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High Impact Learning in a Short-Term Study Abroad Program

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Abstract

This study examines a short-term study abroad program in Costa Rica. The goals of the study are to (1) investigate the link between high impact learning practices (HIPs) and program learning outcomes and (2) capture the relation between program structure, program facilitation, and student learning networks. The methodology includes ethnographic observations, student interviews, and social network analysis. The implementation of three HIPs in the program (applied learning, project-based, and cultural-learning) drives the change in student network structure. The article places scholarly attention on how HIPs incorporated into the program structure influence changes in student learning and support networks as well as influence student reported learning outcomes.

Abstract in Spanish

Este estudio examina un curso a corto plazo en el extranjero que se llevó a cabo en Costa Rica. Los objetivos del estudio son (1) investigar el vínculo entre las prácticas de aprendizaje de alto impacto (denominado en inglés HIP) y los resultados del aprendizaje del curso y (2) capturar la relación entre la estructura del curso, la facilitación del mismo, y las redes de aprendizaje de los estudiantes.

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La metodología incluye observaciones etnográficas, entrevistas con estudiantes, y análisis de redes sociales. La implementación de tres HIPs en el curso (aprendizaje aplicado, proyectos, y aprendizaje cultural) influye en el cambio en la estructura de la red social de los estudiantes. El artículo enfatiza cómo las prácticas de aprendizaje de alto impacto, incorporadas en la estructura del curso, influyen en los cambios en el aprendizaje de los estudiantes y en las redes de apoyo, así como en los resultados de aprendizaje reportados por los estudiantes.

Keywords:

Social Network Analysis, High Impact Learning Practices, Mixed-Methods, International Education, Short-Term Program

Introduction

In recent years, study abroad programs have gained increased popularity for undergraduate students. Previous research illustrates that participating in an education abroad program enhances the individual success of students in terms of graduation rate, critical thinking, and provides opportunities available for students to engage in hands-on, experiential learning (Dwyer & Peters, 2004; Lee et al., 2012; Potts, 2015). Other research discusses benefits such as increased knowledge of global issues (Carlson & Widaman, 1988), stronger intercultural communication skills (Williams, 2005; DiFrancesco et al., 2019), and development of critical thinking skills (Lee et al., 2012). As study abroad programs provide students the unique opportunity to engage in direct intercultural experiences and are linked to numerous outcomes, more research on program structure and facilitation is necessary to understand how these programs produce beneficial outcomes.

Despite a significant amount of resources invested in these programs, limited research currently assesses *if* and *how* student learning outcomes are being met (Jones et al., 2012; Hartman & Kiely, 2014). Existing research also points to the need for more analysis on the impacts of short-term programs (Opengart, 2017; Walsh et al., 2019). Hence, the purpose of this study is to investigate students' experiences as participants in a 12-day study abroad program and their perceptions of learning outcomes associated with their participation. In this faculty- led program, students travel to a host university located in Costa Rica and spend twelve days learning about sustainable building and construction in a tropical climate.

This study is based on a mixed-method design, which includes ethnographic observations in situ, semi-structured in-depth interviews, and social network analysis (SNA). SNA is an interdisciplinary method that takes as its starting point the premise that social life is created primarily by relations and the patterns formed by these connections (Freeman, 2004; Marin & Wellman, 2011). SNA is defined as “a set of socially-relevant nodes connected by one or more relations” (Marin & Wellman, 2011, p. 2). SNA was used to map student learning and social support networks before and after the program, which provided important insights on how program design facilitated connections amongst students.

This study investigates the learning outcomes of short-term programs and how high impact learning practices (HIPs) were utilized in the program to facilitate student engagement. For the purposes of this study, short term is defined as under two weeks. Specifically, the research goals are the following: (1) investigate the link between high impact learning practices (HIPs) and program learning outcomes and (2) capture the relation between program structure, program facilitation, and student learning networks. While the impact of HIPs on student learning are well documented in the literature, there is currently a lack of empirical evidence that integrates student perceptions of outcomes with social network analysis (Ash & Clayton, 2009; Kilgo et al., 2015). Thus, this article places scholarly attention on how HIPs incorporated into the program structure drive changes in student learning and support networks and influence student reported learning outcomes.

Literature Review

Study Abroad Programs

In contrast to vacations abroad, study abroad programs can more deeply introduce individuals to a new culture and incorporate educational material in an unfamiliar setting. Education abroad programs “constitute all educational programs that occur in a foreign country outside of the geographical boundaries of the country of origin, offering students the opportunity to earn academic credit through international experiences” (Lee et al., 2012, p. 768). Movassaghi et al. (2014) identified intellectual and personal growth, career enhancement potential, ability to graduate on time, cost, and financial aid availability as the most important program-related considerations for students participating in study abroad programs. Educational choices, occupational choices, lifestyles,

perspectives, behaviors, and personal and social skills are listed among the long-term impacts of study abroad participation (Paige et al., 2009).

Developing students' intercultural competence is critical to prepare them with the knowledge and skills to meet the demands of an increasingly diverse and interconnected world (Lee et al., 2012; DiFrancesco et al., 2019). Intercultural competence can be defined as the degree to which an individual possesses an "attitude of awareness and acceptance of both similarities and differences that exist among people" (Salisbury et al. 2013, p. 6). Participating in study abroad programs is also linked to increased involvement in international activities (Paige et al., 2009). The benefits associated with study abroad participation are well documented for long-term experiences -- two to six-month programs --, and less documented for short-term programs (Opengart, 2017). While short-term programs have increased in popularity, as they require less time and less money, research on both program structure and learning outcomes remains limited (Opengart, 2017; Matheus & Gaugler, 2020; Chiocca, 2021).

The Institute of International Education (IIE) documents shorter programs have higher participation rates and found that 60% of the U.S. participants during 2018-2019 were in short-term programs, defined as less than eight weeks (Institute of International Education 2020). Similar to long-term study abroad programs, participation in shorter programs is also linked to an increased understanding of social issues, privilege, and stereotypes (Jones et al., 2012). Gaia (2015) found that short-term programs with durations of three weeks or less enhances student understanding, awareness, and appreciation of other cultures. The research that exist on short-term immersion programs tend to focus on non-credit courses such as alternative spring breaks and international service-learning trips, and argues the potential for these other programs to promote long-term impacts on students as well (Jones et al., 2012; Landon et al., 2017; Schenker, 2019; Matheus & Gaugler, 2020; Chiocca, 2021).

Some studies have found that study abroad of longer duration have more benefits in developing intercultural sensitivity, linguistic ability, lifelong friendships, amongst other outcomes (Dwyer & Peters, 2004; Ingraham & Peterson, 2004; Movassaghi et al., 2014; Tarrant et al., 2015; Schenker, 2019). Coker's et al. (2018) comparative research on student outcomes associated with short-term and semester study abroad programs also found that semester programs reported better outcomes, such as critical thinking and working

effectively with others. In comparison with longer programs, Coker et al. (2018) found that short-term programs had less outcomes but still had more positive outcomes, such as higher rates of satisfaction with the college experience, than not studying abroad. While critics of short-term study abroad programs suggest that these programs may just be tourism opportunities with either credits attached or not, these criticisms do not account for pedagogical differences associated with program design (Dwyer, 2004; Di Gregorio, 2015).

In addition to existing gaps in research of short-term programs, little research explicitly focuses on how these programs are structured and facilitated. Although some short-term programs may indeed be “academically light” and provide few opportunities for deep interaction with host communities, these criticisms are in fact targeted at program design rather than length (Di Gregorio, 2015). Landon et al.’s (2017) seminal piece on fostering higher order learning outcomes, such as a global citizenship perspective, in short-term abroad programs found that when pedagogy and metrics of student learning are aligned with a theoretical framework, educators are able to assess whether the program was effective. Rubin and Matthews (2013) also point to the need to assess how study abroad programs meet their learning outcomes further. In setting out a research agenda for international service-learning, Tonkin (2011) also highlights the importance of investigating outcomes beyond student satisfaction with programs and assessing if international level service-learning practices are achieving their objectives. As the impact of study abroad programs is not just isolated to participating students, given host communities and countries can also experience benefits, analysis should span beyond student learning to assess community impacts. While the learning outcomes and pedagogical approaches utilized in study abroad programs vary, it is when they are aligned with theory that significant student learning is possible (Matheus & Gaugler, 2020; Chiocca, 2021). For example, Whatley et al. (2021) found that program features, such as reflection activities, immersion activities, and in-country travel, are key to developing a global perspective, which is defined as “the acquisition of knowledge, attitudes, and skills important to intercultural communication, as well as the development of more complex epistemological processes, identities, and interpersonal relations” (Engberg & Fox 2011, p. 87).

Program content and design, rather than focusing solely on the length, are thus of pivotal importance when investigating the learning outcomes of study abroad programs. Similar to Landon et al. (2017) and Whatley et al. (2021),

the authors of this article suggest that when programs are carefully constructed and delivered, their impact on learning outcomes should not be understated. Hence, this research examines both the learning outcomes of a short-term program and how high impact learning practices (HIPs) were utilized in the program to facilitate student engagement. This research adds to a limited body of work on assessing learning outcomes of short-term study abroad programs, with an emphasis on investigating the role of program design, rather than length, on student learning. The next section provides a brief discussion of HIPs.

High Impact Learning Practices

Over the last two decades, high impact learning practices (HIPs) have received increased scholarly attention and are seen to be a critical component of facilitating student engagement and learning (Kuh, 2008; Kuh, 2013; Ferrari & Fine, 2016). According to Kuh (2008), HIPs are an integral part of increasing student learning. Kuh's (2008) seminal piece on HIPs suggests that eight key elements are essentials when implanting these practices: 1) performance set at appropriately high levels, 2) significant investment of time and effort by students over a period of time, 3) interactions with faculty and peers about substantive matters, 4) experiences with diversity wherein students are exposed to and must contend with people and circumstances that differ from those which students are familiar, 5) frequent, timely, and constructive feedback, 6) periodic, structured opportunities to reflect and integrate learning, 7) opportunities to discover the relevance of learning through real-world applications, and 8) public demonstration of competence. These fundamental elements shape the successful outcomes of incorporating HIPs into the program structure. These outcomes include higher levels of academic achievement, greater problem-solving and research skills, increased likelihood of pursuing a graduate degree, and increased empathy (Kuh, 2008; Brownell & Swaner, 2009).

Previous studies have assessed the outcomes of HIPs on student learning, but few have explicitly assessed how HIPs can shape learning and social networks. For example, Kilgo et al. (2015) estimate the effects of participation in the ten HIPs educational practices endorsed by the Association of American Colleges and Universities (AAC&U) on a variety of liberal arts educational outcomes, and found that active and collaborative learning, as well as undergraduate research, had broad-reaching positive effects such as such as critical thinking and intercultural effectiveness. However, this research did not examine how HIPs were implemented or how they shaped network dynamics.

Another example from the literature can be found in Salisbury's et al. (2013) research on study abroad participation and intercultural competence. Salisbury's et al. (2013) research utilized a longitudinal pretest-posttest design, using data from the Wabash National Study of Liberal Arts Education (WNS), to assess intercultural competence. While Salisbury et al. (2013) found that students who study abroad have marginal increases in intercultural competence, the study only considered whether a student had participated in a study abroad program. In doing so, Salisbury's et al. (2013) analysis is missing key elements of program design such as the location in which the student studied, the program type, and/or program duration.

This study focuses on the following three HIPs concerning program structure and learning outcomes: *applied learning*, *project-based learning*, and *cultural learning*. Ash and Clayton (2009, p. 25) defined *applied learning* as "the nurturing of learning and growth through a reflective, experiential process that takes students out of traditional classroom settings", stating that "the approach is grounded in the conviction that learning is maximized when it is active, engaged, and collaborative." *Project-based learning* experiences have been defined as a project that is organized around a single challenging question or problem that students answer in a small group or collaborative format (Barron et al., 1998). Projects, where students both respond to real world needs and utilize existing knowledge, are critical to fostering a connection between the project and its real-world application (Barron et al., 1998). Both project-based and applied learning relate to the HIP practice of providing opportunities to discover the relevance of learning through real-world applications. Finally, *cultural learning* has been suggested in the literature to increase further critical thinking and student awareness of other cultures (Kuh, 2008). Study abroad programs have great potential to enhance cultural learning when designed in a manner that engages students in projects and relationships with culturally diverse others.

This article focuses on students' reported learning outcomes to better understand the importance of integrating applied learning, project-based learning, and cultural learning into the short-term study abroad program curriculum. While other HIPs were integrated into the program design, such as frequent and timely feedback, we were specifically interested in the outcomes of applied learning, project-based learning, and cultural learning on student outcomes and network dynamics. These HIPs are impactful because they

require students to communicate with classmates and professors about essential topics, expose students to diverse ideas and people of different backgrounds, and enable students to apply their knowledge within and beyond the classroom (Kuh, 2008). While previous studies have connected HIPs to increased student learning (Kilgo et al., 2015; Ferrari & Fine, 2016), few studies have examined the relationship between the integration of HIPs in program structure and a subsequent change in student networks (Brownell & Swaner, 2009; Brownell & Swaner, 2010).

Learning Networks

A growing body of research is using social network analysis (SNA) to understand the impact of social relationships in classrooms. SNA is useful for investigating learning networks as it is primarily concerned with relations among members in a network (Guiffre, 2013). Numerous researchers have found that social networks provide robust and accurate depictions of actual learning processes and social networks (Katz et al., 2004; De Laat et al., 2007; Curşeu, Janssen, & Raab, 2012; Hommes et al., 2012). Network structures can guide education research, such as studying their density, identification of key actors, and the composition of clusters (Marin & Wellman, 2011).

Besides learning, social networks provide substantial social support (Rienties & Nolan, 2014), a sense of belonging (De Laat et al., 2007), and reinforce identity and recognition (Lin, 2017). Social support refers to the “functional content of relationships such as the perceived or actual support received” (Wilcox et al., 2005, p. 708). Wilcox et al. (2005) found that social support is linked to student well-being, with program structure either facilitating or impeding students in building connections. SNA is thus particularly useful to map and assess the social support networks of students and how these support networks change over time.

While existing literature highlights the importance of social networks in student learning and well-being, more research is needed to examine how program structure and facilitation shapes social relationships and ties amongst students. Increased attention must be paid to the effect of HIPs and collaborative learning methods on the density of students’ learning and social support networks. The literature also establishes that program structure and facilitation play a role in achieving, or hindering, ties amongst students (Wilcox et al., 2005; Love et al., 2019). Hereafter, this article provides a mixed-method approach to

explore further the relation between program structure, the integration of HIPs, and the learning/social networks of students in this short study abroad program.

Methods

This research used mixed methods to understand the social networks and student learning that emerged in the program. The results presented in this article are based on the following data: ethnographic observations conducted over the 12-day program, 13 in-depth qualitative interviews with students, relevant staff, and faculty, and social network analysis of students enrolled in the program, lead faculty, the researcher, and the teaching assistant. Social network analysis was used to assess the network structure before the program and at the end of the program. This analysis was based on students completing a social network survey, which is discussed further below. Qualitative methods, including in-depth interviews and ethnographic observations, provided descriptive tools to explain the network composition further. The analysis of qualitative data was a valuable asset in understanding the nexus between high impact learning practices, program facilitation, and network composition.

The data was collected between October 2018 and January 2019. The program took place January 2nd – 13th, 2019. Prior the program beginning, a pre-trip social network survey was distributed at the first student meeting held in October. Following the trip's completed in mid-January 2019, follow-up interviews were scheduled with students and were completed at the end of the month. For students enrolled at WORLD university, follow-up interviews were completed prior to the end of the program and exiting Costa Rica.

Site Location

The focus of the program is on sustainable building design and construction practices. The program's objectives include to:

- Define concepts of sustainability and climate adaptive design, development, and construction
- Build a cross-disciplinary, cross-cultural, learning environment through student diversity, teamwork, and interdisciplinary project work
- Complete a sustainably oriented service experience
- Apply concepts related to human-centered design and sustainability in a tropical climate

The program's curriculum was developed with various learning activities in mind, including student-led case studies, local site visits, guest lectures from Costa Rica, daily reflections, staying with host families, service-learning projects, community need assessment, and working on a final project, which aims to provide a conceptual design that meets local community needs (Valdes-Vasquez et al., 2018). The final project of the program involved responding to community-identified needs, such as increasing tourism revenue and providing a community space, using data collected during the host family stay. The community where the students stayed is located in a rural area and the host families are part of a group that is trying to increase eco-tourism in their local community in partnership with WORLD University. The student groups were formed by considering a variety of cultures, genders, educational backgrounds, and experiences. Students are expected to work collaboratively by applying human-centered (Zoltowski et al., 2012) and integrated design practices (WBDG 2016). The goal of the project is to apply lessons-learned in the course to a real-world situation based on the need assessment that students conduct when staying with their host families and the community. Project deliverables include project goals, conceptual solution, 3D schematics, and cost estimate of resources to build the proposed solution (Valdes-Vasquez et al., 2018).

Mountain State University (MSU) is a public institution located in the Mid-West. WORLD University is a private institution, located in a rural area of Costa Rica, which brings students from around the globe to study agricultural sciences. For the purpose of this paper, Mountain State University and WORLD University are pseudonyms. WORLD University acts as a host university for MSU students during the course of the program and students attending WORLD are encouraged to apply to participate in the MSU program. The student participants in this study were comprised of 12 Mountain State University (MSU) students and four students attending WORLD University who participated in the program (see Table 1). With the exception of one student, all MSU students were majoring in Construction Management degree. All WORLD students were pursuing degrees in agriculture.

TABLE 1. PARTICIPANT DEMOGRAPHICS.

Participant Demographics	
Total Participants in SNA and Program	<ul style="list-style-type: none"> • Faculty (2) • Teaching assistant (1) • Researcher (1) • Students (16)

Interview Participants	<ul style="list-style-type: none"> • Faculty leads (2) • WORLD Students (2) • MSU Students (6) • WORLD staff, including teaching assistant (1), program coordinator (1), and director (1)
University of Participating Students	<ul style="list-style-type: none"> • MSU students (12) • WORLD Students (4)
Student Country of Origin	<p>WORLD Students</p> <ul style="list-style-type: none"> • Costa Rica (1) • Kenya (1) • Ghana (1) • Zimbabwe (1) <p>MSU Students</p> <ul style="list-style-type: none"> • USA (9, two were Latino/a) • Oman (1)
Student Gender	<ul style="list-style-type: none"> • Male (8) • Female (8)

Social Network Analysis (SNA)

SNA was used to map student learning and social support networks before and after the program. Pre-trip social network surveys were given to MSU students at the first preparation study abroad meeting in October, three months prior to the program. Students at WORLD University were given the pre-trip survey on the first day of the program. A total of 20 participants completed the pre- and post-survey, which included 12 MSU students, four students from WORLD University, two faculty members from MSU, the teaching assistant from WORLD University, and the ethnographer. All survey participants filled out the same survey.

The survey included a list of all students and faculty participating in the program and asked students to identify: “Who do you: *a) recognize b) email, c) connect with on social media, d) text/call, e) socialize with infrequently (less than once per month), and f) socialize with frequently (once per month or more)*”? These questions were combined in the network analysis to map who students knew prior to the study abroad program, how they were communicating, and how frequently they were socializing prior to the trip. Secondly, the social network survey asked students to identify: “Who could you: *a) borrow money*

for lunch; b) catch a ride from; c) borrow \$50 from, d) receive school advice from; and e) receive relationship advice from”?. These questions were combined in the analysis of the social support networks of students. This survey has been used in previous research that assessed the development of learning and social networks in residential instruction courses (Love et al., 2019; Love et al., 2020). Post-trip surveys were given at the end of the program before exiting the host country. The post-trip survey included the same questions as the pre-trip survey, and two additional questions were added: “who did you learn from?” and “who learned from you?”.

Social network survey responses were loaded into UCINET, a social network analysis software that allows for network visualization and calculating quantitative network measures (Hanneman & Riddle, 2005). For visualization purposes, final social network diagrams were loaded into Visone, a social network analysis software with high caliber visualization. To assess the change in the network pre- and post-participation in the program, density was calculated. Density is a measure of the number of actual connections in a network divided by the number of possible connections (Giuffre, 2013). The closer the density value is to 1, or when all students are connected to one another, the stronger the network is.

For all the figures shown in the paper, the triangles represent WORLD students, the circles represent MSU students, the squares represent faculty members, and the diamonds the researcher and the teaching assistant. The size of the node illustrates average degree, or the average number of connections an individual had. Lines between the nodes represent connections between individuals. While it is possible to weight these lines on the strength of connection, analysis was restricted to simply mapping relations amongst individuals in this study. Overall, SNA provides a quantitative tool to assess the network of students before and after their participation in the program.

Qualitative Research Methods

Qualitative methods help to describe a system of relationships with participant observation, fieldwork, and qualitative interviews to highlight the meanings, experiences, and views of individuals to make sense of social life (Weiss, 1995). Instead of drawing from a large sample of an entire population, qualitative researchers seek to acquire personal information from a small group of individuals. Ethnographic research is a qualitative method that relies heavily

on observation, participation, and field notes (Emerson et al., 2011). In ethnographic research, the researcher gains access to a setting and conducts observations to better understand the meaning-making processes and experiences of individuals involved. With this in mind, the first author attended each excursion, including the host family stay, lectures, and discussion as an ethnographer. Throughout the program, the first author took jottings each day, and full-field notes were taken each night. The ethnographic observations captured all of the students participating in the program, given that the first author attended all program activities.

In total, 13 semi-structured in-depth interviews were conducted, ranging from thirty to sixty minutes in length. Interviews were recorded and then transcribed. The final interview sample was composed of five male students, four female students, both lead faculty members, WORLD international coordinator, the teaching assistant, and WORLD's director of international affairs. Faculty leads and staff from WORLD university were interviewed to develop a better understanding of program design, structure, and how the MSU program differs from other study abroad programs hosted at WORLD. Both MSU and WORLD students were selected to participate in follow-up interviews. Students were strategically sampled based on the university they belonged to, if they had participated in a prior study abroad program, and their demographics, such as gender, major, and race/ethnicity. These criteria were utilized to sample for diversity amongst the participating students to develop a more robust understanding of how students perceived their study abroad experience. All respondents have been given a pseudonym to protect confidentiality.

The first author coded all interviews and ethnographic observations using NVivo 11, a data management tool that allows for the organization and analysis of qualitative data. As coding is the process of defining what the data is about (Saldaña, 2015), interviews and field notes were read and reread numerous times. In the first cycle coding, the first author coded each interview line by line using descriptive and process coding. In moving from open coding to the second cycle coding, interconnections amongst initial codes were explored during the process of code mapping. Code mapping helps progress first cycle codes into second cycle codes by "bringing meaning, structure, and order to data" (Saldaña, 2015, p. 218). This approach then generated the central themes of the analysis section. The themes included, but were not limited to, perceptions

of high impact learning practices, connections amongst students, and descriptions of learning outcomes.

Findings and Discussion

This short-study abroad program combined a range of guest lectures, site visits, and project-based learning to facilitate high impact learning. Within the program curriculum, applied learning, project-based learning, and cultural learning are integrated through individual and group assignments such as lectures, reflections, case studies, a service-learning project, and local site visits. For instance, as students were responsible for developing and presenting a sustainable case study, participating in building a bahareque wall system, and developing a final design project, they strengthened their ability to both articulate and implement sustainable building practices. Bahareque is a natural building method similar to adobe, made up of clay, sand, straw, aloe vera, and water. This method has some great attributes that make it a sustainable building choice for tropical areas. Some of the attributes behind bahareque include the following: a) materials can be harvested on site, b) simple, renewable, maintainable, c) requires no prior building experience (age-friendly), and d) strong and fire resistant (Alvarado, 2011). In addition to the applied learning strategies integrated into the program curriculum, the inclusion of WORLD students and host family stays were linked to increased intercultural awareness. The results discussed below suggest that program structure and facilitation is a crucial component of producing positive learning outcomes for students enrolled in this short-term study abroad program.

Applied Learning, Integrating Sustainability and Community Needs

Existing literature documents the importance of applied learning strategies (Barron et al., 1998). Program lectures and site visits focused on the importance of integrating community needs and values into the human-centered design process (Zoltowski et al., 2012), and the host family stays provided an applied experience in which students could practice community-based research. In this program, students stayed with host families for two days. The faculty members mindfully form student groups, which represent a variety of cultures, genders, educational backgrounds, and experiences. They were deliberately grouped with four to five other peers from both MSU and WORLD University and placed with a local family. While only one of the four WORLD

students were from the host country, all WORLD students are fluent in Spanish and acted as translators. During this time, students conducted a needs assessment with each host family during their stay, which revolved around host families identifying existing community challenges and projects that could increase economic opportunities and community development. In all host families, students took notes on what was requested and identified ways the final project, a project where students designed a construction plan and developed a timeline, could respond to these needs.

As the program highlighted the social aspect of sustainability, i.e., engaging community members into the design process, the ability to interact with the community was seen as a critical component of meeting program objectives. Ranging from a guest lecture that focused on examples of community design partnerships to program reading material on social sustainability, students became increasingly exposed to and aware of the importance of engaging local community members into discussions of sustainability. The interview quote below demonstrates how Sarah's perspective on sustainability changed throughout the program:

If I'm being completely honest with myself, I was so narrowminded, it was unbelievable, and coming out of this experience, I feel like I've learned a lot. You think of sustainability, and it's like, ah, trees, plants, grass, but there's a whole different side of it. I never thought about social sustainability. It's just a very different way of looking at it from not necessarily having plants and grass and trees to actually benefiting the community.

Integrating her own experiences during the host family stay, and conversations she had with her host family, shifted her understanding of sustainability. Rather than sustainability being cultivated through a focus on environmental factors and technological advances, Sarah now sees the importance of also engaging local people in sustainability efforts.

The change in Sarah's perspective on sustainability was echoed in classroom discussions, interviews with other students, and ethnographic observations of conversations amongst students. In class discussions, students often returned to the idea of thinking about sustainability in a more nuanced and community-based manner. In one example, Jack, a junior from MSU, reflected on how the importance of communities and how *"he never really considered the social norms of sustainability and how measurements and metrics*

don't take the social aspects into account." This quote illustrates the importance of students expanding their understanding of sustainability to include social dynamics, measures, and social norms. While gathering stakeholder input is a critical component of social sustainability, it is equally as essential to incorporate mutual benefits in the design process for the community members (Bal et al., 2013). During this discussion, Lily, a graduating senior in the MSU landscape architecture program, also emphasized the importance of building reciprocal relations with community members. In cultivating a reciprocal learning environment, these discussions served as spaces for students to engage in peer-to-peer education and reflection. Classroom discussions can foster collective reflection, which leads to generating, deepening, and documenting learning (Ash & Clayton, 2009). The changes in perspectives, as observed through classroom discussions and follow-up interviews, indicate that the program meets its objective in both defining concepts of sustainability and having students experience a sustainably oriented service project through the integration of applied learning and project-based learning into the program curriculum.

Research on applied learning emphasizes the importance of integrating existing knowledge into project-based contexts and is grounded in the belief that learning is maximized when it is active, engaged, and collaborative (Ash & Clayton, 2009). Ash and Clayton (2009) also point to the importance of encouraging students to develop creative, reflexive solutions together. The applied learning and project-based learning strategies utilized in the program generated student reported outcomes of feeling more confident in their ability to solve complex problems. Due to extensive classroom discussions, site visits, and lectures, students commented in interviews that they succeeded in applying their knowledge to develop creative and innovative solutions to solve community-identified problems.

In one interview, a student remarked that it felt like she "*never stopped learning*" as each aspect of the curriculum centered on sustainability. Another MSU student, Ben, contrasted the applied learning strategies used in the Sustainable Buildings course with other courses he has taken:

It was way more hands-on. I hate the classroom. My first day of school was yesterday, and it was miserable. So in that class [Sustainable Buildings], you're moving around. You're always doing something. That's how it differed, because most of the other classes you see, you sit in a

classroom, and somebody runs through a PowerPoint slide. I don't learn in that situation at all. I learn nothing. The biggest difference that I saw was the whole hands-on aspect and just the relevancy of it.

Students are more motivated when they value what they are learning, and when their educational activity is implicated in personally meaningful tasks (Hmelo-Silver, 2004). As program learning objectives directly informed the final project, the findings suggest that for applied learning to garner the most benefits, it is critical to integrate relevant concepts (e.g., social sustainability) continuously and collaboratively with students. As illustrated by the interview data, student reported outcomes of applied learning strategies in this program were linked to an increased understanding of sustainability, increased engagement with the program curriculum, and an increased ability to solve design problems.

Cultural Learning by Integrating Host Families and WORLD Students

For all MSU students interviewed, staying with host families was seen to be a critical component of changing their perspective on how individuals in Costa Rica live; thus, also increasing their intercultural awareness and understanding of sustainability. During the host family stay, students stayed with a local family for two nights with a small group of other students. The stays provided a unique opportunity for students to immerse themselves in the local culture. Multicultural experiences that highlight “encountering two cultures simultaneously” (Cheng et al., 2011, p. 814) can expand intercultural awareness by exposing one’s own cultural norms and ideas. Here, we can see how staying with a host family increased cultural awareness for Sarah, an MSU student:

I've never been to a country where you can't flush toilet paper. I didn't know that was a thing, so there was that. Cold showers, I've never taken one until Costa Rica. I never had to sleep with one of the canopy nets around. There's just a lot of different things. I'm not going to lie, it kind of made me feel like I was being a little bit of a brat, spoiled, very well-off in terms of where I could be. However, it also showed me that you could be happy with very little, because some of the families, they were very happy. They didn't have warm water or air-conditioning. I think it was good for me to see how much I don't need in my life, because I complain about a lot, and I'm very well-off in terms of what I have.

Throughout the interview, Sarah commented on the host family stay drastically changing her perception of her position in the world. Recognizing her privilege as a middle-class, educated, white woman was seen to be a moment of growth and change. The service-learning component not only enhanced student understanding of sustainability, it also contributed to a better awareness of global conditions and norms. Likewise, Ben, a MSU student, commented that *“my biggest takeaway was that the program reminded me of a lot of what’s going on out there in the world that people don’t usually think about”*. The inclusion of host family stays into the program was thus an integral part of meeting program objectives and facilitating a key element of HIPs, i.e., strengthening cross-cultural awareness.

Another key aspect of fostering intercultural awareness was the integration of four WORLD students who participated in the 12-day program. Both WORLD and MSU students reiterated the benefits of this cross-collaboration in their interviews. MSU students saw WORLD students as being critical participants in classroom discussions and leading activities on campus. WORLD students were able to help translate during homestays as well as offer their unique perspectives in discussions. For example, during a discussion of sustainable life practices, a few of the MSU students commented on the importance of shopping second-hand. During this conversation, a WORLD student named Fanai, shared her perspective as a West African woman. *“In my culture, shopping second-hand means you are poor”*, she commented before she continued to explain that as a scholarship student, she had been shopping second-hand and felt as if this was something to be ashamed of. Based on the conversation with MSU students, she reflected that she now felt proud to shop second-hand as it was a positive cultural connotation for MSU students. This conversation resonated with many students and instructors as it highlighted differing cultural perspectives on sustainability and consumption.

As all WORLD students were from different countries (e.g., Costa Rica, Ghana, Zimbabwe, and Kenya), they further increased cultural awareness in the program. All interviewed MSU students commented that the involvement of WORLD students increased their experience and noted the importance of the cultural perspective they provided. Ben, an MSU student, commented on the importance of integrating WORLD students throughout his interview:

Even outside of what we were there for, talking to Fanai about her home country and hearing the problems that they have. I’ve never been to Africa

before, and it's been one of the places I wanted to go, and just talking to her about the things that interest me, how their government system works and the problems they have that exist inside their country, what the negative and positive influences she sees on a daily basis. I've always known that there's a lot of things going on out there, a lot of things way bigger than we have going on here and a lot more dire situations, so to speak. But just getting that global perspective, and I know there's quite a few people that are on that study abroad that have never been outside the U.S. before. Even when you're here in the U.S., you talk to somebody about their home country, I think it's a little bit different, but when you're in a different country with somebody else, it's a very eye-opening experience. I think they're a little bit more honest when you're not in your own country. It's just a little bit different of an aspect, so having the WORLD students there was pretty cool.

Other students also highlighted the importance of engaging local students in education abroad programs to increase intercultural awareness further. For example, Lily, another MSU student commented:

With Fanai being from Ghana, just learning about what they think of sustainability, her culture, and how they're not really sustainable, and then also in comparison with ours in the U.S., and then comparing it with Costa Rica, you're learning about three different areas kind of all at the same time. That's really unique perspective that the WORLD students brought. They have a really good perspective on what sustainability actually is. That was different than some of the views from our group, I feel like.

WORLD students thus offered not only a perspective on living in Costa Rica but also a perspective on their home country and on sustainability.

Interviews with both groups of students illustrated that this cultural learning was reciprocal. For WORLD students, this was one of the first times they spent an extended time with a group of U.S. students. WORLD students commented on how this experience shifted their views of U.S. citizens and reinforced the importance of learning from those who differ from oneself. Zuni, an East African woman and WORLD student, commented on how her perception of MSU students changed throughout the program.

*At first, some people in the group were kind of intimidating. I've never been around people like them so it was just like okay this...how am I gonna approach this because I've never been around it. He's... *laughs* large and tall. I've never been around someone like that. It's people that I see on television. It's the typical American high school bully and the jock. He gives off that impression.*

When asked how her perception shifted over the program, Zuni replied that her biggest takeaway was “*don't write off anyone before you get to speak to them and to know them*”. Zuni also surprised the group with her knowledge of alternative rock and collection of t-shirts. When another classmate asked Zuni if she knew songs by the Red Hot Chili Peppers, even though she was wearing the band's shirt, she commented that “*Africans listen to rock music too.*” These small conversations helped break down cultural stereotypes and broadened students' worldview.

While the host family stays increased intercultural awareness, peer-to-peer interactions also helped students get out of their comfort zone and break down stereotypes. The interview excerpts above illustrate that the program succeeded in its goal to build a cross-cultural learning and peer-to-peer environment. The program also succeeded in fostering a key element of HIPs: facilitating experience with cultural diversity where students are exposed to people and circumstances that differ from their own (Kuh et al., 2013). Hence, cultural learning was twofold: 1) WORLD students learned more about Western culture from the MSU students, and 2) the MSU students learned more about the respective cultures of the WORLD students and the local culture of Costa Rica. Peer-to-peer learning translated to both classroom discussions and design projects, as well as broader takeaways, such as the importance of engaging with different cultures and customs or challenging preconceived beliefs. While cultural learning may be challenging to teach, study abroad programs that engage local and international students can foster increased intercultural awareness. Being in various locations in the host country was not only relevant but rather how the inclusion of these WORLD students helped to facilitate cultural learning and meet learning objectives. Again, the program structure and intentionality of program design were critical.

Changing Networks, Changing Students

To further investigate patterns between program structure and student learning outcomes, pre- and post- networks were created based on social network survey responses. Figure 1 shows the network of all the participants by asking the question “who do you recognize outside of the classroom,” capturing the baseline network before students fully embarked on the program. This question was used to assess who students recognized, e.g., if they had had a class before or were familiar with the student.

FIGURE 1. PRE-TRIP: WHO DO YOU RECOGNIZE OUTSIDE OF CLASS?

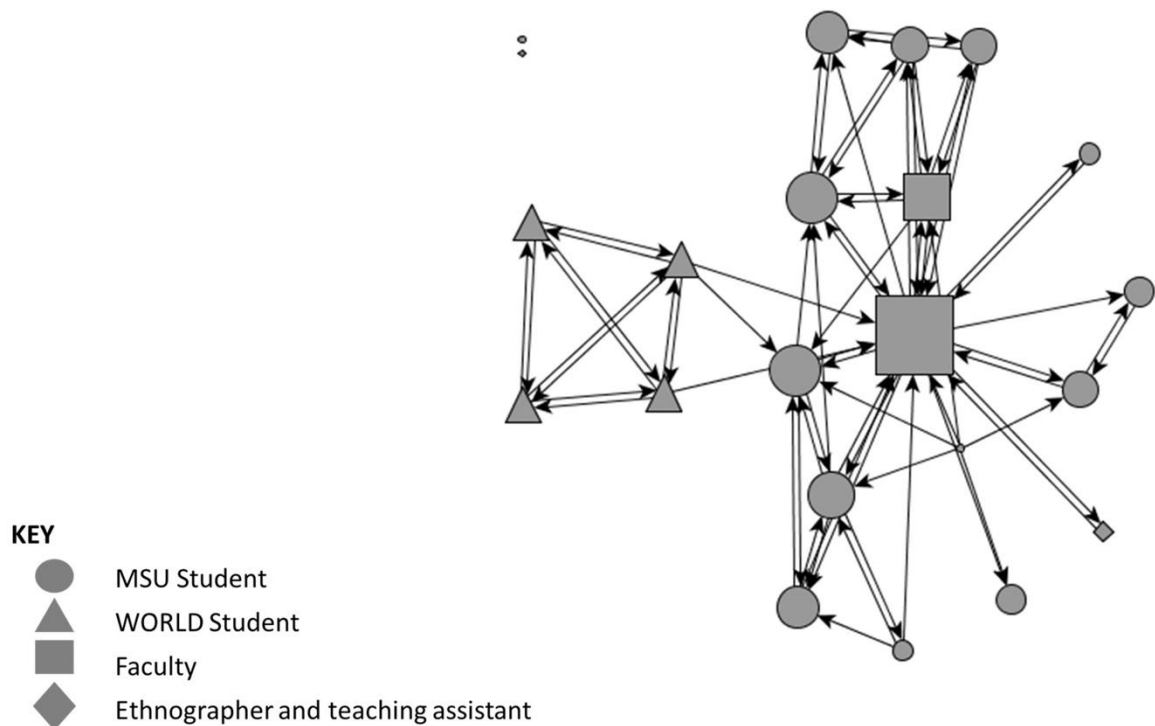
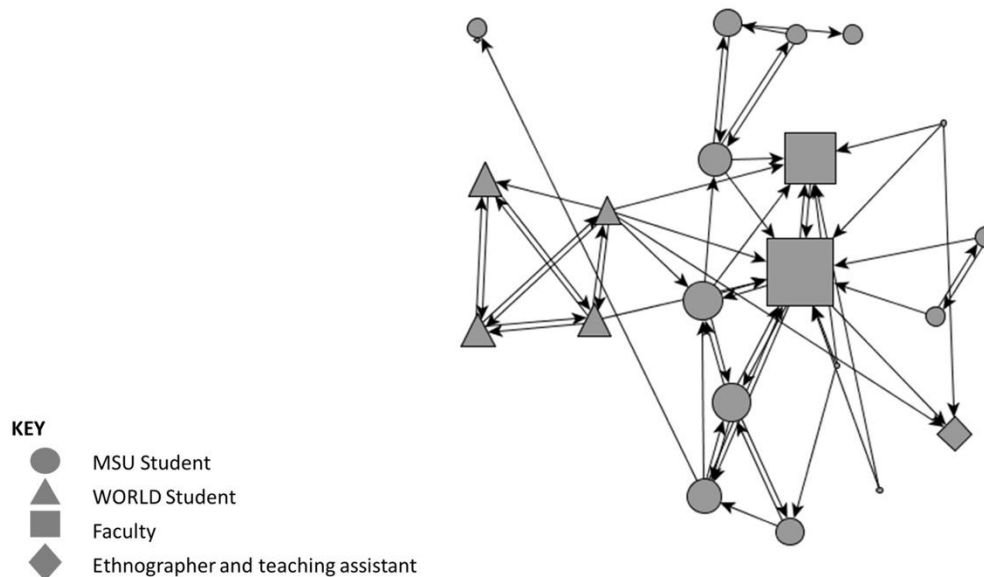


Figure 1 clearly shows that faculty play a vital role in the network at the beginning of the program. Nodes are sized by degree, or in this case, the number of times an individual was recognized by others, illustrating that faculty are most recognized and central in the network. Two nodes in the network are unconnected, which shows that they had no previous relations to either other students or faculty members. This makes sense, given that one student was outside of construction management and the other node is the researcher. Many

of the MSU students report recognizing one another, which is expected due to the majority studying the same major. Due to the geographic distance between the two campuses, there were limited connections between MSU and WORLD students.

In addition to measuring existing connections amongst students, students answered questions regarding their pre- and post- support network within the classroom. Social support undergirds student relationships (Wilcox et al., 2005; Rienties & Nolan, 2014). The support network measure consisted of the combined score of the following questions: who could you “ask for a ride”, “ask for lunch money”, “borrow \$50”, “go to for school advice”, “go to for relationship advice”, and “go to for help in a crisis”. While the type of “crisis” was not defined for students, and crises may require different types of social support, this category was used to assess who students felt comfortable approaching in a time of need. These social support measures were selected based on previously conducted research that assessed changes in student networks across different courses (Love, 2015).

FIGURE 2. PRE-TRIP SOCIAL SUPPORT.



After an intensive 12-day study abroad program, the social support network's density was .12 in the pre-test survey and .82 in the post-test survey, a 580% increase. This finding illustrates that students felt confident in their ability to rely on one other for a range of support measures, such as financial, a car ride, or help in a crisis (as shown in Figure 2 and Figure 3). While we expected that the network density would change after spending 12 days together, the high level of density across each measure exceeded the previous social network diagrams of the program in 2017 (Love et al., 2019).

FIGURE 3. POST-TRIP SOCIAL SUPPORT.

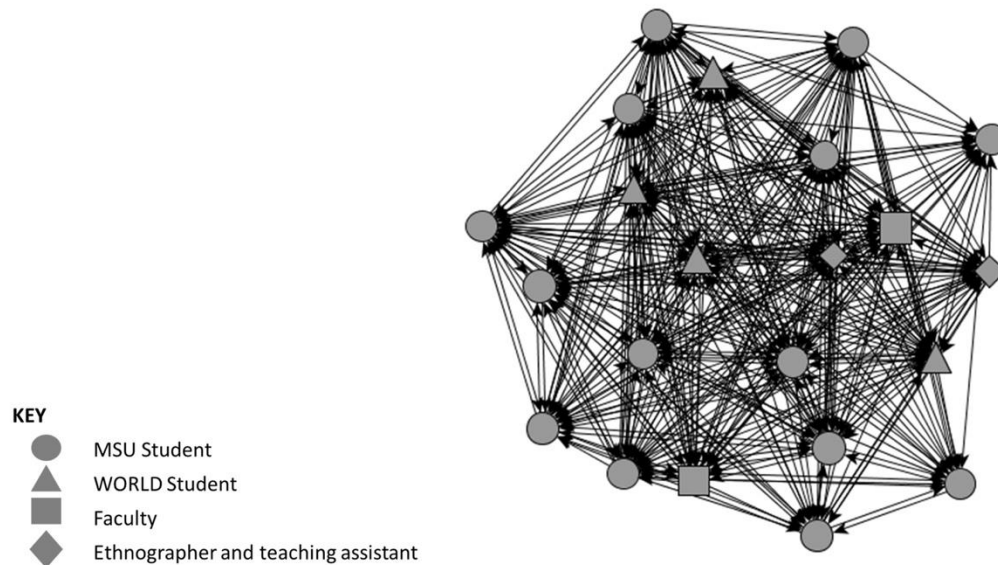


Figure 2 and Figure 3 show pre-trip and post-trip social support networks. Pre- and post-network diagrams of student perceptions of social support also highlight drastic changes. In Figure 2, the pre-trip social support network diagram, the faculty played a crucial role in offering social support. While there are clusters of students who support one another, the network is sparsely connected. Figure 3 shows that the support network is densely connected.

In-depth interviews further illuminated high levels of trust, friendship, and connection amongst students. Ethnographic observations clarified that program structure and facilitation were important factors in driving the density

and extent of these connections. Jenny, a MSU student, reflected that structure of the program changed the way she viewed herself, due to forcing her out of her comfort zone and encouraging conversations with students she was unfamiliar with through shared meals, group projects, class conversations, and periodically changing roommates. Here, she comments on this:

What I learned about myself is that I've never really been a social person, so I think being in the group that was really social, when they included me, I felt like I could be social as well. I'm proud that I was able to talk to everybody in the group.

Research notes the importance of students' living arrangements and structured and unstructured excursions, trips, and experiential activities as significant out of class experiences that foster more meaningful abroad experiences (Vande Berg et al., 2009). In this program, students shifted roommates at each new location, sharing meals and new experiences beyond the classroom. These out of classroom activities included swimming in the ocean as well as participating in a zip-lining experience. When connections amongst students are robust, they are more confident in taking on risks. Jenny reflected on the importance of feeling supported by her fellow classmates and how her confidence grew throughout the program throughout the interview.

I think in the beginning, I was really scared, and I was like, oh, man, I don't know if I should go either, because I didn't know anybody, and I thought I was just going to be the person on the side... the whole trip I was kind of like, I don't know if I should go, but then when I actually went, it was great. It was amazing, just like the zip lining. I was super scared, but it was great at the end, great experience.

During the zip-lining experience, Jenny began crying out of fear. Two of her peers comforted her, encouraging her to move beyond her comfort zone and try something new. Later, she reflected on how important it was to feel supported by them and the reward of trying something that scared her.

In addition to the importance of social support in fostering student well-being, peer-to-peer learning has been documented in the literature as advancing student engagement and expanding critical thinking. Building a dense network of students is a critical component of cultivating and sharing collective knowledge (Love, 2015). Both Figure 4 and Figure 5 illustrate students reporting

learning from their peers. These figures also shows a dense peer-to-peer learning network with teachers on the periphery.

FIGURE 4. WHO DID YOU LEARN FROM?

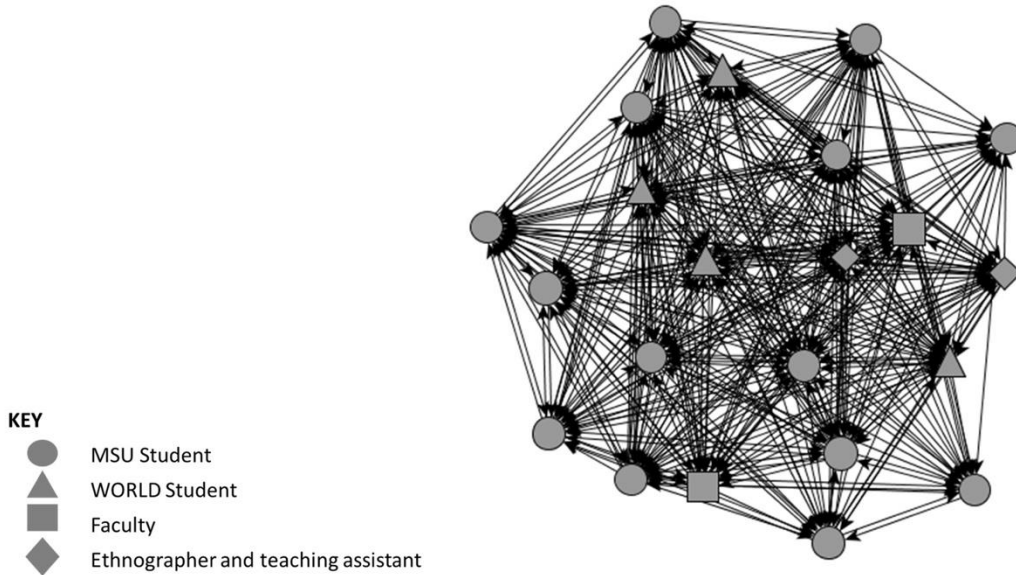
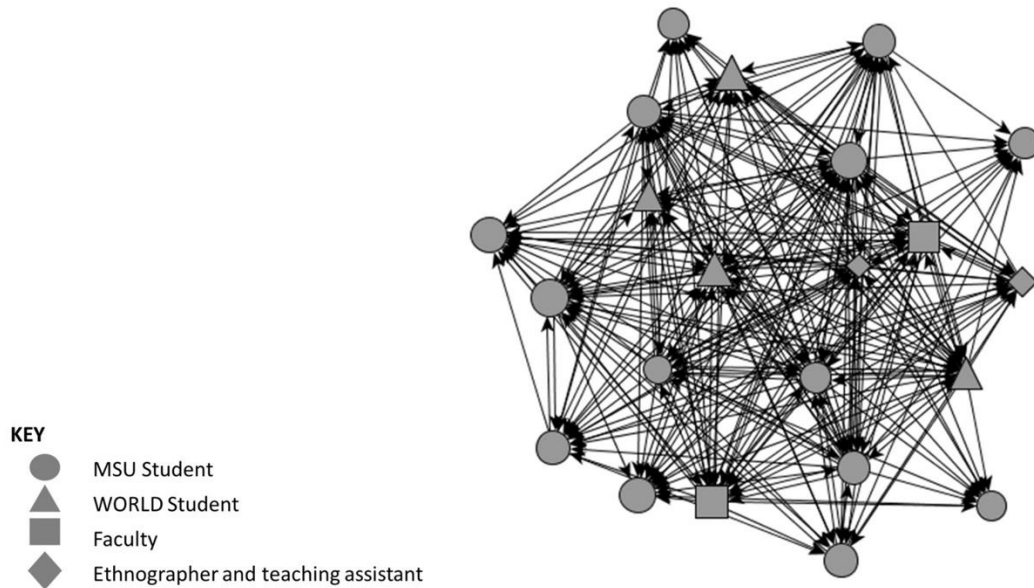


FIGURE 5. WHO LEARNED FROM YOU?



In interviews, students highlighted central elements of what they thought others had taken away from them, such as a differing political stance,

sustainability knowledge, career advice, or a broader cultural perspective. For example, when answering the question of what others learned from her, Lily, a self-identified politically liberal lesbian, commented that *“I’m open about my sexuality and my political views, so I think that that brings some newness to the types of people that were there”*. She then reflected on what she learned from the course, stating that *“one of the biggest things I learned was to just talk to people that are different than you. Everyone has something to offer, I think, was another takeaway, even if you don’t see things the same way”*. Likewise, another student, Khalid, echoed the importance of connecting with those that differ from you, and how in the process, you can learn something about oneself in the process.

*I don’t know how to explain this but he [another student] affected me because he can be open and people think of him as a d****. When you actually get to know him, he’s a really cool person. I learned that you shouldn’t really care about the judgment that you get from society as long as you know who you are.*

Both Figures 4 and 5 illustrate a dense network of peer-to-peer education. Peer-to-peer education was facilitated through the following pedagogical practices: having students present a case study on a relevant sustainable building design, including hands-on activities where students had to work together to identify solutions and problem solve, such as constructing a chicken co-op using a traditional building technique, and the final group project where students collaborated together to develop a construction plan and timeline. The density score for “who did you learn from” was .76, and the density score of “who learned from you” was .57. These high scores confirm the interconnected learning network of students. In a seminar style classroom, faculty are frequently in the center with students on the periphery (Love, 2015). Figure 4 and Figure 5 show that both MSU students and WORLD students are central in the education network with faculty on the periphery. As the structure of the program integrates applied learning, project-based, and cultural learning, it makes sense that students emerged as educational leaders within this network.

There are three few key elements to highlight from Figure 4 and Figure 5: (a) the social support network drastically changed after the end of the program, (b) faculty members moved to the outskirts of the network and students were able to occupy central positions in the learning network, and (c) the dense post networks illustrate the changes in peer-to-peer social support and

learning. The triangulating of social network diagrams with ethnographic observations and in-depth interviews allowed the researchers to identify the importance of facilitating relationships in the program. The findings suggest that the structure and facilitation of the program are integral components of shaping the network. Key pedagogical practices utilized in the course to facilitate these relationships included eating meals together to build community, rotating roommates throughout the 12-day program, and encouraging students to participate in open discussions about not only the program, but on how students were expanding their own perspective on sustainability. The social network diagrams exemplify the change in social support and learning networks after twelve days, while the interview data speaks about student perceptions of program outcomes and learning strategies.

Limitations

As this was an exploratory study, with a sample size of 16 students, the small sample size can be a limitation for the generalizability and external validity of the results. Establishing external validity is difficult with field research methods because data is only collected on a small sample. However, generalizability in qualitative studies is often focused on the researcher's analysis and understanding of circumstances rather than on the collection of representative data (Delmar, 2010). As validity enables qualitative theories to be generalizable and useful when re-contextualized and applied to other settings, the findings of this study can be replicated in different settings to assess the nexus between course curriculum, learning outcomes, and network dynamics.

As the first author conducted ethnographic observations, there is the potential that the presence of a researcher changed group dynamics. However, the first author's identity as young, female, graduate student served to her advantage, as she was in a similar age group as participating students and thus was able to blend in. In an interview, two MSU students commented on the presence of the researcher, stating that it "*was cool*" and that "*it didn't feel weird... because I was able to connect and talk to her*". These excerpts illustrate that students felt comfortable with the presence of the researcher and thus suggest the influence of the researcher on the group was limited. Although the second and third authors were leading faculty on the trip, their thoughts, opinions, and beliefs were not driving the analysis of the research project. This was accomplished through a limited role in data collection and data analysis process. The fourth author also provided important corroboration of the

analysis, given their institutional knowledge gained from many years coordinating study abroad programs. The potential for biases in reporting on the course is limited as both the first and fourth authors are not regularly engaged in the program.

Beyond issues of potential biases, the social network survey did not weight the strength of relationships and merely depicted patterns of connections between students. As students took the survey in a group setting, it is possible that students recognized each other which thus influenced the density of the network map. However, the recognition question did not assess the strength of the tie (e.g., recognizing the name of student based on a prior class or having a close relationship). It is likely that students have stronger connections with some students, and weaker connections with others. In this study, we mapped connections but did not assess the strength of these connections. In turn, this hinders the ability to assess the depth of student relationships. While in-depth interviews and ethnographic observations alluded to close relationships amongst students, further research is necessary to assess varying characteristics of ties and student networks.

Conclusion

This article contributes to the literature by using a mixed-method approach to better understand the relationship between short-term study abroad program structure, high impact learning practices (HIPs), and support/learning networks amongst students. The results presented in this article illustrate the nexus between the integration of HIPs and student learning. This article fills a gap in the literature by providing an in-depth exploration of how integrating HIPs into program structure shapes learning outcomes and network dynamics. Students reported outcomes of participating in the study abroad program were a deeper understanding of sustainability and increased cultural awareness.

While the change in student networks as an outcome of program structure is highlighted, more research is necessary to provide further data points on the long-term impacts of this program and other short-term programs. As education abroad programs continue to gain popularity and expand into new geographical areas, more research is needed to assess the learning outcomes of participating in these programs. This study contributes to existing research on education abroad programs by suggesting that integrating HIPs into program

structure is an integral component of building dense learning and social support networks of students.

This research adds to existing literature on short-term duration programs and suggests that program structure and facilitation, rather than length, is a crucial component of producing positive outcomes for students. This study also contributes to the expansion of systematically gathered qualitative and quantitative data that assesses the impact of participating in short-term study abroad programs (Coker et al., 2018; Makara & Canon, 2019; Matheus & Gaugler, 2020; Whatley et al., 2021). This research also adds to the recently growing body of literature which assesses program structure, rather than length, on learning outcomes (Makara & Canon, 2019; Matheus & Gaugler, 2020; Whatley et al., 2021). The findings suggest that (1) HIPs are a necessary component of education abroad programs, (2) social support networks are an essential component of student learning, and (3) most importantly, program structure, rather than length, is fundamental. These findings hold important implications for educational policymakers, higher education institutions, and study abroad educators.

The results from this study indicate an interrelationship between program structure and student learning outcomes; a finding that can influence future study abroad programming and design. As the findings of this study demonstrate that aligning theory with program structure and specific learning objectives is at the heart of cultivating engaging study-abroad programs, these findings can influence the design process of other courses and programs. Given our findings, we suggest that educators incorporate the following into their study abroad program curriculum: incorporating local students into the program when possible, engage students in co-creating and knowledge-building projects, such as community-service or case studies, and cultivating connections amongst students in the classroom and beyond. Key successes from this program included rotating roommates to build community amongst students, as well as sharing meals together, including a service-learning component to the program, applied learning strategies such as taking design strategies out of the classroom and building a chicken coop for a local family, and including international students from the host university. When working with communities, it is not only important to listen to them, but integrate their knowledge into design solutions.

As study abroad programs continue to rise, further scholarly attention must be placed on how program design facilitates learning and social networks. It is through theory driven evidence-based research that program improvement and evaluation are enabled. This study has important implications for a better understanding of the relationship between program structure and student learning. This research suggests that study abroad programs should aim to provide students with opportunities to engage in high-impact practices, such as active and collaborative learning, to increase student reported learning outcomes. Moreover, the findings suggest that the integration of domestic, international, and study abroad students facilitated intercultural awareness and an enhanced global perspective; suggesting that other programs include this component to maximize learning opportunities and outcomes.

Further ethnographic studies could provide more information related to the differences in group dynamics and subsequent influence on the benefits of this study abroad program. As ethnographic observations help explain network changes, additional comparative studies with more students in various education abroad programs could provide greater insight on variations of discipline, student demographics, and setting and increase generalizability. This study has important implications for integrating high impact learning practices into program design for both short term and long-term study abroad programs. For students to fully benefit from the cross-cultural experience, they need to be in environments that facilitate cross-cultural interactions, applied learning, and peer-to-peer education.

References

- Alvarado Grugiel, S. (2011). *Arquitectura con bahareque: Centro de visitantes, Museo de Cultura Popular Universidad Nacional*. <https://www.kerwa.ucr.ac.cr/handle/10669/78077>
- Ash, S. L., & Clayton, P. H. (2009). Generating, deepening, and documenting learning: The power of critical reflection in applied learning. *Journal of Applied Learning in Higher Education*, 25-48.
- Bal, Menoka, David Bryde, Damian Fearon, and Edward Ochieng. "Stakeholder engagement: Achieving sustainability in the construction sector." *Sustainability* 5, no. 2 (2013): 695-710. <http://doi.org/10.3390/su5020695>
- Barron, B. J. S., Schwartz, D. L., Vye, N. J., Moore, A., Petrosino, A., Zech, L., & Bransford, J. D. (1998). Doing with understanding: Lessons from research on problem- and project-Based Learning. *Journal of the Learning Sciences*, 7(3-4), 271-311.
- Brownell, J., & Swaner, L. (2009). High-impact practices: Applying the learning outcomes literature to the development of successful campus programs. *Peer Review*, 11(2), 26.

- Brownell, J., & Swaner, L. (2010). *Five high-impact practices: Research on learning outcomes, completion and quality*. Association of American Colleges and Universities.
- Carlson, J. S., & Widaman, K. F. (1988). The effects of study abroad during college on attitudes toward other cultures. *International Journal of Intercultural Relations*, 12(1), 1-17.
- Cheng, C. Y., Leung, A. K. Y., & Wu, T. Y. (2011). Going beyond the multicultural experience—creativity link: The mediating role of emotions. *Journal of Social Issues*, 67(4), 806-824. <http://doi.org/10.1111/j.1540-4560.2011.01729.x>
- Chiocca, E. S. (2021). Talking with ‘others’: Experiences and perspective transformation in a short-term study abroad program. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 33(2), 35-60. <http://doi.org/10.36366/frontiers.v33i2.484>
- Coker, J. S., Heiser, E., & Taylor, L. (2018). Student outcomes associated with short-term and semester study abroad programs. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 30(2), 92-105.
- Curşeu, P. L., Janssen, S. E., & Raab, J. (2012). Connecting the dots: social network structure, conflict, and group cognitive complexity. *Higher Education*, 63(5), 621-629. <http://doi.org/10.1007/s10734-011-9462-7>
- De Laat, M., Lally, V., Lipponen, L., & Simons, R. J. (2007). Investigating patterns of interaction in networked learning and computer-supported collaborative learning: A role for social network analysis. *International Journal of Computer-Supported Collaborative Learning*, 2(1), 87-103. <http://doi.org/10.1007/s11412-007-9006-4>
- Delmar, C. (2010). “Generalizability” as recognition: Reflections on a foundational problem in qualitative research. *Qualitative Studies*, 1(2), 115-128.
- DiFrancesco, D., Nguyen, L. K., Spurlin, D., Dutt, A., Furst-Holloway, S., & Rogers, N. (2019). The effects of short-term study abroad on expanding students’ culture perception and identity. *Journal of Higher Education Theory and Practice*, 19(7).
- Di Gregorio, D. (2015). Fostering experiential learning in faculty-led study-abroad programmes. In *The Palgrave handbook of experiential learning in international business* (pp. 569-584). Palgrave Macmillan, London. https://doi.org/10.1057/9781137467720_33
- Dwyer, M. M. (2004). More is better: The impact of study abroad program duration. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 10(1), 151-164. <https://doi.org/10.36366/frontiers.v10i1.139>
- Dwyer, M. M., & Peters, C. K. (2004). The benefits of study abroad. *Transitions Abroad*, 37(5), 56-58.
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes*. University of Chicago Press.
- Engberg, M. E., & Fox, K. (2011). Exploring the relationship between undergraduate service-learning experiences and global perspective-taking. *Journal of Student Affairs Research and Practice*, 48(1), 83-103. <https://doi.org/10.2202/1949-6605.6192>
- Ferrari, C. M., & Fine, J. B. (2016). Developing global perspectives in short-term study abroad: high-impact learning through curriculum, co-curriculum and community. *Journal of Global Initiatives: Policy, Pedagogy, Perspective*, 10(1), 8.
- Freeman, L. (2004). The development of social network analysis. *A Study in the Sociology of Science*, 1(687), 159-167.
- Gaia, A. C. (2015). Short-term faculty-led study abroad programs enhance cultural exchange and self-awareness. *International Education Journal: Comparative Perspectives*, 14(1), 21-31.
- Giuffre, K. (2013). *Communities and networks: using social network analysis to rethink urban and community studies*. John Wiley & Sons.

- Hanneman, R. A., & Riddle, M. (2005). Introduction to social network methods.
- Hartman, E., & Kiely, R. (2014). A critical global citizenship. *Crossing boundaries: Tension and transformation in international service-learning*, 215-242.
- Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn?. *Educational psychology review*, 16(3), 235-266. <https://doi.org/1040-726X/04/0900-0235/0>
- Hommers, J., Rienties, B., de Grave, W., Bos, G., Schuwirth, L., & Scherpbier, A. (2012). Visualising the invisible: a network approach to reveal the informal social side of student learning. *Advances in Health Sciences Education*, 17(5), 743-757. <https://doi.org/10.1007/s10459-012-9349-0>
- Ingraham, E. C., & Peterson, D. L. (2004). Assessing the impact of study abroad on student learning at Michigan State University. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 10, 83-100. <https://doi.org/10.36366/frontiers.v10i1.134>
- Institute of International Education. (2020) "Detailed Duration of US Study Abroad, 2006/07-2018/2019". Open Doors Report on International Education Exchange. Retrieved from: <http://www.iie.org/opendoors>
- Jones, S. R., Rowan-Kenyon, H. T., Ireland, S. M. Y., Niehaus, E., & Skendall, K. C. (2012). The meaning students make as participants in short-term immersion programs. *Journal of College Student Development*, 53(2), 201-220. <https://doi.org/10.1353/csd.2012.0026>
- Katz, N., Lazer, D., Arrow, H., & Contractor, N. (2004). Network theory and small groups. *Small Group Research*, 35(3), 307-332. <https://doi.org/10.1177/1046496404264941>
- Kilgo, C. A., Sheets, J. K. E., & Pascarella, E. T. (2015). The link between high-impact practices and student learning: Some longitudinal evidence. *Higher Education*, 69(4), 509-525.
- Kuh, G. D. (2008). *High-impact educational practices what they are, who has access to them, and why they matter*. Washington, DC: Association of American Colleges and Universities.
- Kuh, G. D., O'Donnell, K., & Reed, S. D. (2013). *Ensuring quality & taking high-impact practices to scale*. AAC&U, Association of American Colleges and Universities. <https://doi.org/10.1007/s10734-014-9788-z>
- Landon, A. C., Tarrant, M. A., Rubin, D. L., & Stoner, L. (2017). Beyond "just do it" fostering higher-order learning outcomes in short-term study abroad. *AERA Open*, 3(1), 1-7. <https://doi.org/10.1177/2332858416686046>
- Lee, C. S., Therriault, D. J., & Linderholm, T. (2012). On the cognitive benefits of cultural experience: Exploring the relationship between studying abroad and creative thinking. *Applied Cognitive Psychology*, 26(5), 768-778. <https://doi.org/10.1002/acp.2857>
- Lin, N. (2017). Building a network theory of social capital. In *Social Capital* (pp. 3-28). Routledge.
- Love, H. B. (2015). *Long term learning outcome of sociology capstone courses at Colorado State University* (Master's Thesis, Colorado State University. Libraries).
- Love, H. B., Ozbek, M. E., & Cross, J. E. (2019). Assessment of the development of social and learning networks in construction management courses using social network analysis. *International Journal of Construction Education and Research*, 16(4), 290-310. <https://doi.org/10.1080/15578771.2019.1657208>
- Love, H. B., Valdes-Vasquez, R., Olbina, S., Cross, J. E., & Ozbek, M. E. (2021). Is cultivating reciprocal learning the gold standard for high impact pedagogies?. *Higher Education Research & Development*, 1-16. <https://doi.org/10.1080/07294360.2021.1896483>

- Makara, M., & Canon, K. (2020). More than a vacation? Assessing the impact of a short-term study abroad program to the Middle East. *Journal of Political Science Education*, 16(3), 314-334. <https://doi.org/10.1080/15512169.2019.1599292>
- Marin, A., & Wellman, B. (2011). Social network analysis: An introduction. *The SAGE Handbook of Social Network Analysis*, 11 (25).
- Matheus, C., & Gaugler, K. M. (2020). Fostering Global Mindedness in Short-Term Community-Based Global Learning Programs: The Importance of Strategic Design, Collaboration, and Reflection. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 32(3), 156-181. <http://doi.org/10.36366/frontiers.v32i3.583>
- Movassaghi, H., Unsal, F., & Göçer, K. (2014). Study abroad decisions: Determinants & perceived consequences. *Journal of Higher Education Theory and Practice*, 14(1), 69-80.
- Opengart, R. (2017). Short-term study abroad and the development of intercultural maturity. *Journal of International Education in Business*, 11(2), 241-255. <https://doi.org/10.1108/JIEB-02-2017-0009>
- Paige, R. M., Fry, G. W., Stallman, E. M., Josić, J., & Jon, J. E. (2009). Study abroad for global engagement: The long-term impact of mobility experiences. *Intercultural Education*, 20(1), S29-S44. <https://doi.org/10.1080/14675980903370847>
- Potts, D. (2015). Understanding the early career benefits of learning abroad programs. *Journal of Studies in International Education*, 19(5), 441-459. <https://doi.org/10.1177/1028315315579241>
- Rienties, B., & Nolan, E. M. (2014). Understanding friendship and learning networks of international and host students using longitudinal social network analysis. *International Journal of Intercultural Relations*, 41, 165-180. <https://doi.org/10.1016/j.ijintrel.2013.12.003>
- Rubin, D. L., & Matthews, P. H. (2013). Learning outcomes assessment: Extrapolating from study abroad to international service-learning. *Journal of Higher Education Outreach and Engagement*, 67-86.
- Tarrant, M. A., Rubin, D. L., & Stoner, L. (2015). The Effects of Studying Abroad and Studying Sustainability on Students' Global Perspectives. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 26, 68-82.
- Tonkin, H. (2011). A research agenda for international service learning. *International service learning: Conceptual frameworks and research*, 191-224.
- Saldaña, J. (2015). *The coding manual for qualitative researchers*. Sage.
- Salisbury, M. H., An, B. P., & Pascarella, E. T. (2013). The effect of study abroad on intercultural competence among undergraduate college students. *Journal of Student Affairs Research and Practice*, 50(1), 1-20. <https://doi.org/10.1515/jsarp-2013-0001>
- Schenker, T. (2019). Fostering global competence through short-term study abroad. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 31(2), 139-157. <https://doi.org/10.36366/frontiers.v31i2.459>
- Valdes-Vasquez, R., Clevenger, C. M., Thornes, L., & Olbina, S. (2018, June). Cross-cultural Collaboration Inspired by a Sustainable Building Course in Costa Rica Paper presented at 2018 ASEE Annual Conference & Exposition, Salt Lake City, Utah. <https://peer.asee.org/30243>
- Vande Berg, M., Connor-Linton, J., & Paige, R. M. (2009). The Georgetown consortium project: Interventions for student learning abroad. *Frontiers: The interdisciplinary journal of study abroad*, 18, 1-75.

- Walsh, K. P., Sanders, M., & Gadgil, S. (2019). Equivalent but not the Same: Teaching and Learning in Full Semester and Condensed Summer Courses. *College Teaching*, 67(2), 138-149. <https://doi.org/10.1080/87567555.2019.1579702>
- WBDG Aesthetics Subcommittee, "Engage the Integrated Design Process," Whole Building Design Guide, October 17, 2016. <https://www.wbdg.org/design-objectives/aesthetics/engage-integrated-design-process>
- Weiss, R. S. (1995). *Learning from strangers: The art and method of qualitative interview studies*. Simon and Schuster.
- Whatley, M., Landon, A. C., Tarrant, M. A., & Rubin, D. (2021). Program design and the development of students' global perspectives in faculty-led short-term study abroad. *Journal of Studies in International Education*, 25(3), 301-318. <http://doi.org/10.1177/1028315320906156>
- Wilcox, P., Winn, S., & Fyvie-Gauld, M. (2005). 'It was nothing to do with the university, it was just the people': The role of social support in the first-year experience of higher education. *Studies in Higher Education*, 30(6), 707-722. <https://doi.org/10.1080/03075070500340036>
- Williams, T. R. (2005). Exploring the impact of study abroad on students' intercultural communication skills: Adaptability and sensitivity. *Journal of studies in international education*, 9(4), 356-371. <https://doi.org/10.1177/1028315305277681>
- Zoltowski, C. B., Oakes, W. C., & Cardella, M. E. (2012). Students' ways of experiencing human-centered design. *Journal of Engineering Education*, 101(1), 28-59. <https://doi.org/10.1002/j.2168-9830.2012.tb00040.x>

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Laura Thornes is currently the Associate Director of Development for International Programs and was the Director of Education Abroad from 2011 to 2021 at CSU. She held similar administrative leadership positions at the University of Arizona. Laura completed her Bachelor's in Secondary Education with German and Spanish from the University of Arizona and Master's in Educational Psychology from Northern Arizona University. She has led several student groups abroad to Germany and Mexico. She regularly collaborates with researchers on studies related to the social, academic, and professional outcomes of education abroad and benchmarking best practices for supporting historically underrepresented students abroad.