

2019

## Application of Theory to Guide Development of a Rehabilitation Service-Learning Project in Guatemala

Mary Zadnik

*University of St. Augustine for Health Sciences*

Suzanne Trotter

*University of St. Augustine for Health Sciences*

Cindy Mathena

*University of St. Augustine for Health Sciences*Follow this and additional works at: <https://encompass.eku.edu/jote>Part of the [Occupational Therapy Commons](#), and the [Physical Therapy Commons](#)

### Recommended Citation

Zadnik, M., Trotter, S., & Mathena, C. (2019). Application of Theory to Guide Development of a Rehabilitation Service-Learning Project in Guatemala. *Journal of Occupational Therapy Education*, 3 (4). <https://doi.org/10.26681/jote.2019.030410>

This Educational Innovations is brought to you for free and open access by the Journals at Encompass. It has been accepted for inclusion in Journal of Occupational Therapy Education by an authorized editor of Encompass. For more information, please contact [laura.edwards@eku.edu](mailto:laura.edwards@eku.edu).

---

# Application of Theory to Guide Development of a Rehabilitation Service-Learning Project in Guatemala

## Abstract

International community-based rehabilitation service-learning projects in physical and occupational therapy education programs may impact underserved communities internationally. The intentional inclusion of learning in service activities has been identified as service-learning. Extending the impact and education beyond the service project is necessary in order to provide a sustainable outcome for the community. Faculty at the University of St. Augustine for Health Sciences partnered with Potter's House Association International to develop an interprofessional program to address the rehabilitation needs and continuity of care following a one-week project serving the community members of the Guatemalan City Garbage Dump. The purpose of this article is to describe the program's development based on a five-phase conceptual model of international service-learning. The five phases included program development, design, implementation, evaluation, and enhancement. Data for program improvement was collected through program evaluation, staff interviews, and observations. Suggestions are offered to enhance the model and recommendations are made for further program development. Using a conceptual model as a framework for building a new program resulted in successful planning and reflection.

## Keywords

Community-based rehabilitation, physical therapy, occupational therapy, Guatemala, service

## Creative Commons License



This work is licensed under a [Creative Commons Attribution-NonCommercial-No Derivative Works 4.0 License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

# JOTE

Journal of Occupational  
Therapy Education

Volume 3, Issue 4

---

## Application of Theory to Guide Development of a Rehabilitation Service-Learning Project in Guatemala

---

Mary Zadnik, ScD, MEd, OTR/L

Suzanne Trotter PT, ScD, FAAOMPT

Cindy Mathena, PhD, OTR/L

University of St. Augustine for Health Sciences

United States

---

### ABSTRACT

International community-based rehabilitation service-learning projects in physical and occupational therapy education programs may impact underserved communities internationally. The intentional inclusion of learning in service activities has been identified as service-learning. Extending the impact and education beyond the service project is necessary in order to provide a sustainable outcome for the community. Faculty at the University of St. Augustine for Health Sciences partnered with Potter's House Association International to develop an interprofessional program to address the rehabilitation needs and continuity of care following a one-week project serving the community members of the Guatemalan City Garbage Dump. The purpose of this article is to describe the program's development based on a five-phase conceptual model of international service-learning. The five phases included program development, design, implementation, evaluation, and enhancement. Data for program improvement was collected through program evaluation, staff interviews, and observations. Suggestions are offered to enhance the model and recommendations are made for further program development. Using a conceptual model as a framework for building a new program resulted in successful planning and reflection.

---

### INTRODUCTION

Today, many Americans with various types of medical training travel internationally to volunteer time, expertise, and resources. Some trips are focused on building or providing a service that is not readily available because of high cost, limited resources, and decreased accessibility. Services often include surgical intervention, pharmaceutical care, nursing, rehabilitation, dental, and vision care (Bimstein, Gardner,

Riley, & Gibson, 2008; Brown, Fairclough, & Ferrill, 2012; Clements, Rager, & Vescovi, 2011; Hoang & Nguyen, 2011; Wagner & Christensen, 2015; Volunteer Optometric Services to Humanity, 2016). Also, some trips involve students and a component of active learning that has been embedded into their educational program. The intentional inclusion of learning in service activities has been identified as service-learning (Griffith & Clark, 2016). Service-learning and its value have been well-documented in medical and allied health education for many years (Abedin, Gruppen, Kolars & Kumagai, 2012; Ekelman, Dal Bellow-Haus, Bazyk, & Bazyk, 2003; Pechak & Thompson, 2009; Pechak, Gonzalez, Summer & Capshaw, 2013; Ryan-Krause, 2016; Vu, Johnson Francois & Simms-Cendan, 2014). Most of the literature generated from these service-learning trips has emphasized potential benefits to student team members and the sponsoring university with a lesser emphasis on assessing long-term assistance to the community (Abedin et al., 2012; Ekelman et al., 2003; Ryan-Krause, 2016; Vu et al., 2014).

With many people seeking to volunteer, it is important in the planning process to distinguish some of the types of services that can be provided. Corbett and Fikkert (2009) identify three ways providers may offer assistance: relief work, rehabilitation, and development work. Relief work is provided when a country has had a disaster, and the help provided might be temporary. Rehabilitation may take place after relief work; community needs can factor into the length of service. Finally, development work should be the goal of service delivery and may provide long-term solutions to areas of need when considering medical and rehabilitative care. Sheppard and Landry (2016) recognized that rehabilitation professionals serve a critical role in disaster relief work as noted through their experiences following a natural disaster in Nepal. This role extends from the initial stages of recovery to long-term interventions that support local community involvement.

Typically, the intent of service-learning trips is to provide assistance to communities that might not have access to a full range of services on a routine basis. However, it has been noted that some aspects of service trips can do more harm than good; some services are organized with good intentions but do not always reflect the needs of the local community and often services are provided, and then taken away (Crump & Sugarman, 2008; Nouvet, Chan, & Schwartz, 2016; Reisch, 2011). Aligning with a local community partner can be difficult and setting up a program that targets the local population carefully can be met with many logistical, temporal, financial, and cultural challenges (Bridges, Abel, Carlson, & Tomkowiak, 2010; Horowitz, 2012; Lau, 2016). As a result, there is an identified need to apply structure during the early phases of program development to ensure the project can fully meet the needs of both the service providers and the recipient. The focus of this paper is to apply a well-documented conceptual model to a newly developing service-learning project, and to examine its utility in organizing future programming. In addition, sustainability as an essential element of extending services provided through service-learning programs will be described.

## CONCEPTUAL MODEL TO DEVELOP A SERVICE-LEARNING PROJECT

Several models have been proposed to integrate service-learning into a curricular format for health care professionals (Pechak & Thompson, 2009; Peterson, Harrison & Wohlers, 2015; Tapley & Patel, 2016). Many of these models only focus on adding cultural experiences to existing or new curricula. However, one in particular, formulated through qualitative research by Pechak and Thompson (2009), created a step-by-step structure that could be applied to the development of a service-learning project.

Pechak and Thompson's (2009) research utilized grounded theory methodology to examine established physical therapy service-learning programs, their structure, and procedures. They sought to use survey data to create a model for service-learning and to establish the role of physical therapy in the global health community. Following several layers of qualitative analysis, themes emerged that established the basis for five phases of "optimal international service learning" (p. 1196). The phases included development, design, implementation, evaluation, and enhancement. These have been collectively combined into their conceptual model for service-learning. A description of each will follow.

*Development* consisted of identifying partners on both sides of the project: one leader who would champion and assemble the team and plan the trip from the provider side and one partner who could coordinate how and what services would be delivered on the receiving end. The second phase, *design*, was described as one that included operational decision-making, such as choosing the appropriate team members, constructing the learning and service elements, planning the logistics of the trip itself, and lastly, identifying sources of funding. Next, *implementation* involved executing the service components between the community member and team leader before arrival and once on-site. It was considered the step where the plan is put into action. The fourth phase, *evaluation*, focused on an assessment of the program outcomes from the perspectives of the students, faculty, university, and community partner. This phase was considered to overlap with the implementation phase in terms of timing, as the evaluation process can be ongoing. The fifth and last phase of Pechak and Thompson's model was *enhancement*, which focused on activities of the development team. The goal was forward thinking, planning and discussing ways to enhance and build the program for the future.

To date, no published literature has been found to apply this conceptual model as a framework for a newly developing program of interdisciplinary service-learning. The model's focus on international service-learning and application to rehabilitation appears to lend itself to guide the development of new programs. Thus, it was chosen and applied here.

Following a discussion with the Institutional Review Board (IRB) of the intent to utilize this conceptual model to inform the development and evaluation of the 2016 Guatemala service trip, the IRB determined this study to be exempt.

## APPLICATION OF THE MODEL

Pechak and Thompson's (2009) conceptual model for international service-learning was applied to the development of an inter-professional service-learning program at the university. The components of the model were reviewed and discussed in detail by the faculty who were developing the program, both before and after the trip. The application of the model and its utility began with a thorough look at both its constructs and how it would apply to this project. Each phase and its application are summarized in Table 1.

Table 1

### *Application of the Model*

<b>Pechak Conceptual Model Phase</b>	<b>University Application of the Model</b>
Development: Identifying the partners	Community partnerships had already been established with Potter's House Association International (PHAI) through a physical therapy faculty member. By leveraging existing relationships, this partnership was the starting point for the project.
Design: Logistics and operational decision-making	<p>Conversations between faculty and the contact at PHAI focused on identifying community rehabilitation and health initiatives that would be delivered by the team. Discussions involved:</p> <ul style="list-style-type: none"> <li>-potential access issues for the community</li> <li>-locating patient populations who needed care planning</li> <li>-educational programs for the community members and staff at PHAI</li> <li>-housing, transportation, meals for service trip members</li> </ul> <p>Additional planning by the faculty team included</p> <ul style="list-style-type: none"> <li>-recruiting students/team members</li> <li>-pre-trip education/preparation</li> <li>-trip cost</li> <li>-fundraising</li> <li>-identifying additional service components (house build, tear down)</li> <li>-creating a master schedule of activities and student rotations</li> </ul>
Implementation: Execution of the program	<p>Daily debriefing with faculty members:</p> <ul style="list-style-type: none"> <li>-accomplishments (House build timeline on target, educational sessions completed; clinics well-staffed)</li> <li>-team dynamics (how teams worked together, challenges and ability to keep pace)</li> <li>-adjustments as needed to the schedule and the working groups</li> </ul>

<p>Evaluation: Combining perspectives of students, faculty, and community partner</p>	<p>Evening debrief sessions with the students and rehab team to:</p> <ul style="list-style-type: none"> <li>-share and learn from each day's projects</li> <li>-highlight successes</li> <li>-problem solve challenges</li> <li>-discuss supply need</li> </ul> <p>At the end of the project and post trip, faculty members sought feedback from the PHAI team via informal interview to review the project and determine whether the goals we had set were met.</p>
<p>Enhancement: Future planning</p>	<p>Discussions with both students and PHAI team members during and after the trip focused on future learning opportunities, goals and community needs; notes were taken during these discussions.</p>

*\*\*Note that it is possible to have some areas of overlap*

### Development

Development of this project began in 2013 when the second author (current program leader) attended a community project with her church, which has a long-standing relationship with Potter's House Association International (PHAI), a Christian, non-profit organization located in Guatemala City. PHAI has been providing a variety of services to members of the community surrounding the Guatemala City Garbage Dump for 30 years (Potters House Association International, 2016a). This area is home to approximately 13,000 people who survive by scavenging the largest and most toxic landfill in Central America. Access to basic healthcare and rehabilitative services are significantly limited due to lack of financial resources within the community and lack of local providers willing to serve what has been considered a dangerous neighborhood (Mandy Herrera, personal communication, 2016). The trip in 2013 was the beginning of relationship building with the partner, which continued as the second author took her first group of six physical therapy students on the first official rehabilitation service trip in 2014.

Annually, international teams partner with PHAI to build homes, provide micro-enterprise and educational opportunities, and offer dental and medical services to the community. Seventy percent of the staff at PHAI are former beneficiaries of services and feel empowered to serve with the skills and knowledge to tackle community problems (Potter's House Association International, 2016b). Many staff members of PHAI have little to no formal medical training. They work alongside international medical teams because they understand the community members' needs and can direct patients to appropriate care and follow-up treatment recommendations. Until 2013, when the second author began working with PHAI, rehabilitation teams were not part of services offered, and the rehabilitation care that took place during these service-learning projects provided no direct training to the staff of PHAI who could provide some continuity and after care support when service teams returned to the United States.

The relationship with the PHAI staff (teachers, medical assistants, and staff who help administer the local and regional programming for the community members) and Leadership Board members was developed over a three-year period to ensure that mutual trust and respect for each other's mission and vision would be understood. With careful consideration to the need for continuity, physical and occupational therapy faculty at the university developed a week-long inter-professional community-based service project with program graduates and current students to assess and provide rehabilitation services to the Guatemalan landfill community.

What resulted from the carefully cultivated relationship was a commitment to communicate expectations and goals for both parties, as well as a realistic understanding of the unique rehabilitation and healthcare education needs of the community. Identifying these community health needs (education for local community dwellers, rehabilitation needs, and training for PHAI medical assistants) at an early stage helped in planning for what types of supplies were necessary. In addition, it assisted in the logistics of acquiring supplies before travel, and in making determinations of what patient referrals would be appropriate to the rehabilitation clinic-based on the team's expertise. Table 2 includes a supply list generated for the trip. With an interdisciplinary focus, including both physical and occupational therapy services, it was communicated to the local administrative and medical assistant staff that patients with hand injuries could be evaluated and splints could be made for a variety of orthopedic and neurological issues, in addition to other occupational therapy services such as adaptations and a focus on activities of daily living. Also, PHAI requested some education for both the community members and medical assistants. With a large diabetic population locally, it was recommended that there be an emphasis on a diabetic clinic and diabetes education to the community members. Basic rehabilitation education for medical assistants serving in their clinic was also requested so that they could provide follow-up care. Lastly, a conversation thread that was maintained throughout the planning included sustainability for this and future projects. As a result, an additional goal for project design emerged which was to identify and offer solutions for continued care.



Table 2

*Supply List*

<b>Goals/Needs</b>	<b>Supplies</b>
Education	-Home Exercise Programs and nutrition information (adapted for language)
Splinting/Positioning	-Splinting material: include splinting pan and heat gun -Pre-fabricated Ankle Foot Orthosis
Therapeutic Exercise	-Pre-made slings- with instructions for use in Spanish -Taping supplies: Kinesio Tape ® -Pre-wrap -Athletic tape -McConnell tape -Hypafix® -Sacroiliac belts -TheraBand ®- 2 rolls
Activities of Daily Living	-Adaptive equipment: sock aid, button hook, tubing for adapting feeding utensils -Diabetic socks -Nail clippers
Functional Mobility	-Crutches, walkers, canes -Wheelchairs: if able -Shoe inserts/heel lifts
General Supplies	-Wipes to use on tables in-between patients -Scissors -Alcohol wipes -Hand sanitizer -Pens and blank paper -Gloves -Blood pressure cuff/stethoscope

**Design**

With the components of Pechak and Thompson's model (2009) in mind, a careful approach was taken with design. This was done to ensure a focus on both the student and practitioner learning experience as well as the continuity of program outcomes for the community. The faculty sought to build a team with a balance of experienced practitioners and students to ensure the students had an appropriate level of supervision (giving them the opportunity to learn and practice their skills), while also providing the clients opportunities to receive care from seasoned clinicians. Formal applications and interviews by the faculty assisted in the selection of the student team members. The selection criteria for students included professionalism, a strong work ethic, good academic standing, a service oriented and humble attitude and those who were willing to abide by the policies of PHAI. Additionally, there were other qualities of both student and clinical team members that were considered that included prior service

with PHAI or another international mission project, currently licensed therapists, students who already had clinical fieldwork experience, and those who spoke Spanish. The final team included one physical therapy faculty member, two occupational therapy faculty members, and 20 graduates and current students from physical and occupational therapy.

Design for the service-learning experience included a focus on both a pre-travel debriefing for participants, and the actual service-learning experience in Guatemala which included logistics to support the venture. Once the students and other team members (local clinicians and other faculty who volunteered to participate) were selected, the faculty provided education before the trip to prepare the team physically and mentally for the experience, including both the environment and extreme level of poverty they were going to face. Table 3 offers a guide to questions used before departure for the team to identify their feelings towards poverty and to begin preparing emotionally for what might be encountered during the trip. This pre-briefing was felt to be an important component in giving the team members an idea of some of the experiences they would face in case it impacted their decision to participate.

Table 3

*Pre-briefing Discussion Prompts*

<p>What has been your experience with poverty, if any? What do you anticipate may be the most difficult thing for you to see while working in the Guatemala City Garbage Dump? How do you anticipate being helpful, but without being harmful? What are ways that we can work to empower the community?</p>
---

With a large number of service team members, there was an increased need for collaboration with the community partner, which focused on how best to organize and distribute the clinical expertise. It was determined that the teams would split into four groups that would staff three separate clinics each with a different clinical emphasis: adult rehabilitation needs, pediatrics, upper extremity splinting, and lastly, one group to focus on a house build.

It is important to note that flexibility was an essential part of the design because it was difficult to anticipate how the community would respond to the program and how many people would show up for the planned services and education. With this in mind, the faculty members intended to reassess the program daily so that the team could best respond to community needs and keep a faculty to student ratio that was deemed to be safe and effective. The design intended for each of the three clinics to be staffed with an experienced faculty member and program graduate who would oversee and guide students during patient interactions. Clinic assignments were based on student preferences for patient experiences and clinic demands. Arrangements taken before the trip included obtaining necessary materials for clinical care (identified in Table 2).

Lastly, consideration was made to both the logistics and cost associated with this trip. Budget (airfare, housing, food), transportation, language barriers, local resources, and safety were top priorities. At the start of project planning, it was difficult to determine where to stay, how the team would get around, plan meals, and locate translators. This further highlighted the need to partner with someone in the community who could assist with the organization of these services in the host community. With PHAI as the local partner who has supported many trips in the past, this was not an issue. Potter's House Association International staff managed many of the logistical issues that might have otherwise proven difficult. They arranged all transportation within Guatemala, housing, food, translators, and a local guide for a day of tourism for the team. Individual team members were responsible for raising their funds, approximately \$2000. To help offset some of the costs, students raised some funds through raffles, monetary donations from family and friends, sponsorship from a local restaurant close to the university, university apparel sales, and supply donations from local clinics and vendors.

### **Implementation**

Once on the ground in Guatemala, the team leaders organized the students and other team members into small groups for the first day of the project. The crew was divided into four teams: three groups to staff clinics at different locations and one who would start on the house build. Team leaders gave the group an overview of the agenda for the week which included reviewing elements of the program that were planned: house build, community and medical staff education, as well as the time transportation, would take them to and from PHAI headquarters, when and where meals would be served, and plans for an evening debrief and team building.

After routines were established, a primary responsibility during the implementation phase was for the team leader to provide an ongoing assessment of how the team was fitting into their assigned daily roles and the emotional responses they were experiencing. This review occurred most evenings following the group dinner. It included a debriefing session with students and faculty, which provided them with the chance to discuss and process their feelings regarding situations and experiences they had seen while interacting with the community (see Table 4 for daily debriefing questions). Each evening the three faculty members would discuss project effectiveness, emotional and physical health of the team, individual learning experiences and requests for the next day to organize clinical assignments that would best serve current community conditions.

Table 4

*Daily Debriefing Questions*

<p>First night: Why did you come?</p> <p>Daily: Physical health check-in (check in with the team each day to assess the health and status of any traveler's illness). What are you most looking forward to tomorrow? What most concerns you? What has been your favorite moment so far? What has been your most stressful moment so far? How is your experience matching your "why I came?" In the midst of the suffering you may have witnessed today, where did you see life and joy? What was the hardest thing about today? What stood out to you today? What was your "take-away" from today? Consider writing this in a notebook, then allow yourself to let go and rest to prepare for tomorrow.</p>
---

*Note: Questions adapted from Christine Warner, Christ Church Austin*

Flexibility was also found to be an essential component of implementation. This element factored into the program because of the challenges that were faced in the local community. One day during the trip there was a landslide inside the city dump that resulted in both fatalities and missing persons. While the rehabilitation team was not involved in search and recovery efforts, the PHAI leadership asked for members of our team to assess a man who had been buried upside down in the garbage for twelve hours to see if he should go to the hospital. Three licensed professionals on the team were sent out to assess him and make professional recommendations. Because fewer experienced professionals were available to supervise students at the clinics during that time, assignments were adjusted for the afternoon to accommodate the urgent need.

With prior preparation, students provided a diabetic education clinic (in Spanish) to approximately 30 community members after PHAI requested this type of educational experience for the community members. Education covered diet, exercise management, and skin care. Socks and medication were distributed. The community members were engaged in active participation to enhance the learning experience. Engagement included exercise demonstration and lively discussion regarding diet.

At one community clinic, faculty and students instructed the PHAI medical assistant staff members in simple therapeutic exercise management of basic conditions (stretches for low back pain and body mechanics in lifting and moving heavy items). Following the training, the medical assistants were asked to demonstrate what was learned.

Application of this learning experience was observed through patient education and continuity of care that was provided involving both family members and clinic staff. For example, some patients required upper extremity positioning and needed to use a sling for support. These had never been provided in the local clinics for this community and thus the clinic staff had no experience with them. In preparation for the potential lack of exposure to positioning and sling use, instructions had been created and printed using pictures to demonstrate each step of the folding and tying process. Patients who were given a sling had a family member present who was educated in the steps for correctly placing the arm in position as well as tying the sling. A translator was present to accommodate any language barriers in the demonstration and education process. Also, immediately following the session, the family member was asked to demonstrate the correct application of the sling. Patients and family members were invited to return to evaluate carryover from education and for additional treatment. Finally, to add to the continuity of care, the clinic staff was also part of the patient and family education process.

### **Evaluation**

Evaluation of the Guatemala trip was a continuous process that included consideration for program enhancement and sustainability. There has been some emphasis in the literature on program evaluation from the perspectives of the students, faculty, and university (Bimstein et al., 2008; Brown et al., 2012; Clements et al., 2011; Hoang & Nguyen, 2011; Kaddoura, Puri & Dominick, 2014; Vu et al., 2014; Wagner & Christensen, 2015), but less emphasis on perspectives from the community partner. Practice guidelines in community-based rehabilitation have been established and provide a further framework for program evaluation and enhancement with the emphasis being on engaging the community partner (Grandisson, Hebert, & Thibeault, 2016). As a result, considerations were made to include this level of evaluation that included the perspective of the community partner, how the information obtained will improve future projects, and how it can be enhanced to ensure sustainability. A continuous process of program evaluation was performed throughout the trip and after its completion.

For the faculty and the staff at PHAI, the evaluation process involved informal interviews with the community partner during and after the trip to gain an understanding of the successes, areas for further improvement, and how an ongoing partnership could be sustainable. Staff members at PHAI were asked their opinion regarding identified areas of need that could be addressed by future teams (see Table 5).

Table 5

*Informal Interview Questions for the Staff at Potter's House Association International*

What is the best way to advertise the rehabilitation services that would be offered to attract those in need?
Now that you see what we can offer, how can we best serve you on future trips to emphasize the continuity of care?
How many times per year would you recommend a rehabilitation team come to serve your community?
What is the largest rehabilitation need in your community? Are there durable medical equipment needs for your community?
What is the medical staff most interested in learning from us?
What future educational training can we bring to your staff or community members?

Evaluation of the outcomes of this service trip integrated assessing community response, which included examining attendance in the clinics, the diabetic education seminar, and training with the PHAI staff acting as medical assistants. Methods for evaluation included the following: examining attendance in the clinics (during implementation); daily debriefings with students and faculty; evening faculty discussions of project effectiveness, emotional and physical health of the team, individual learning experiences and requests for project assignments for the next day; and informal interviews with the community. One final debriefing occurred with the students on the last night before departure to discuss the outcomes, and to share experiences and emotions. Discussions on this last day helped inform the team on what worked and what did not work regarding organization, supplies, scheduling and to help plan for the following trip. In addition, upon return, the faculty members brought the group of students together informally several times to continue to discuss and debrief their personal experiences and to set goals for the next trip. Lastly, there were continued informal conversations with the team at PHAI to review the outcomes of the trip as well as to establish goals for the following year.

An estimated total attendance across all three community centers was 120 patient visits. Sixty percent of the patients returned to the clinic three times during the week for consistent care and home program modifications. Debriefing with the student and faculty team often included sharing emotional exchanges between the students and the community members who received care, discussing accomplishments in each of the project areas, and identifying areas of clinical practice students explored through their interventions with their community member clients. Informal conversations with the community members who attended the clinics or educational sessions occurred typically on the spot during and after their visits, which provided more immediate feedback of how they were feeling before, during, and after they received care.

### Enhancement

Several ideas emerged from discussions with PHAI leadership working alongside the team to improve the program, including the need for rehabilitation teams to return to the community at least two to three times per year. More opportunities to train the PHAI staff who worked as medical assistants was requested, and ways to improve community outreach to attract those individuals needing services to attend the clinics when the teams are visiting was discussed. Staff members asked that teams return to Guatemala City to serve in the Garbage Dump Community, but also be willing to travel to rural areas where PHAI is expanding its services. Topics generated for future educational training sessions for the local PHAI staff working as medical assistants are listed in Table 6.

Table 6

#### *Future Educational Topics for Medical Assistants Associated with PHAI*

- Tissue healing for sprains, strains, and fractures
- Basic first aid response
- Palpation lecture/labs
- Massage lecture/labs
- Adaptive equipment and techniques for Activities of Daily Living
- Basic principles of therapeutic exercise including indications, contraindications, and progressions for a return to activity
- Diabetic Care- foot care/ basic wound management
- Home Exercise Programs

Emphasis moving forward will be on training additional trip leaders (either university alumni or clinicians who might opt to lead service trips throughout the year), which will foster the mission and vision of PHAI and ensure continuity of service for the community it serves. The leader will need familiarity with cultural differences and expectations and will serve as a liaison between the team and staff at PHAI. Improvements in recruiting patients will be implemented in future trips to ensure maximal outreach.

Additionally, consultations with other groups implementing a similar vision have begun which has provided additional focus for this project. The mission of the Stand (Sustainable Therapy and New Development) Project in Haiti is to establish “permanent access to orthopedic rehabilitative services in the country of Haiti through direct patient care and clinical training of its citizens” (STAND-The Haiti Project, n.d.). Members of The Stand Project of Haiti suggest including other health care practitioners so that services provided could be more comprehensive (STAND-The Haiti Project, n.d.). With that consideration, the addition of nursing staff is planned.

Lastly, there are plans to work directly with the community itself to help members become self-managers of chronic conditions; additional education and training will be given to the community clinic teams who could provide extended coverage of

therapeutic services as continuity of care. Educational training programs will be created and delivered locally with the focus of turning over service delivery to the community clinics.

## **DISCUSSION**

The conceptual model created by Pechak and Thompson (2009) provided a useful structure to develop this service-learning project. Using this as a framework during the design stages of the trip gave insight into what considerations should be made in planning, staffing, and evaluating success. Learning from teams who have experience creating structured service-learning can alleviate the stress that can occur in designing and implementing programs. Many of the elements of these phases encourage a level of consideration that will result in a thorough plan. As a result, the authors feel that the application of the Pechak and Thompson model was a valuable component in the success of the trip and could help others have a similar outcome.

While the application of the conceptual model was felt to be successful, additional considerations were identified as essential for future trips. Pechak and Thompson (2009) identified a need to find a community partner in the development phase and later introduce the concept of reciprocity (whereby both the community and the team are serving each other) as a theme that emerged from their data. In the model, reciprocity should have a stronger focus. It is imperative to find a partner who not only provides the connections and resources one might need to implement the project but whose mission and vision can be shared by the team. By aligning the mission, vision, and resource sharing, a stronger bond can be formed which could ensure a higher level of success in the partnership.

Adherence to the mission and vision of the host in Guatemala was paramount to success. Thus, we prioritized carefully selecting team members who would first, respect the tenets of the community partner, and then focus on meeting the rehabilitation needs of the community. Without alignment and mutual respect for the mission, implementation of the project may have resulted in the provision of rehabilitation services without long-term benefit.

The vision to train the local community providers could take years of continued partnership and commitment from everyone involved, with ongoing program evaluation of successes and failures (Ryan-Krause, 2016). This would be the same for any group wanting to provide international community-based rehabilitation.

## **Barriers**

The process of enhancement according to Pechak and Thompson (2009) included planning for the future, but not much emphasis was placed on a discussion of barriers. While each service trip will have unique challenges, careful early consideration of any potential roadblocks needs to be part of the discussion early on and throughout the project. This seems to be an essential element of development and evaluation. Barriers for the current team included gathering and transporting needed materials, the potential for environmental constraints (such as weather), and continued difficulties in reaching



community members who would benefit from services. Barriers for teams looking to duplicate a trip similar to this one could include identifying and locating a partner who can connect with community members who could benefit from allied health services, obtaining local and safe transportation, finding adequate workspace, providing translators, and understanding of how to disseminate services to the local community.

Finding a balance between meeting the true needs of the local community and managing the perceptions of what the student and faculty teams' good intentions to "help" was a challenge. Ultimately the team strived to find a way to meet people where they were (metaphorically); taking their idealized perspective from trying to get community members 100% back to "normal" to a more realized focus on simplifying interventions and giving the support needed to successfully manage on their own. Adaptations and resources were provided, but there was a focus on teaching the community members to help themselves. Materials were not provided as a handout to community members but were intentionally combined with education and purpose.

There were several barriers to the logistical component of the trip. Time and energy should be spent discussing the logistics in both the development and design phases. Some of these included transporting supplies, local scheduling of patients/extending our reach into the community, and language. Restrictions exist in the transport of items from the United States to international locations for several reasons. Local government controls limit what can be sent into the country as well as the length of time it could be held for inspection. Some supplies can be packed and taken in suitcases, but with space limitations and cost this can be prohibitive. Reliance on local suppliers can also be hit or miss. The ability to best prepare for all possible patient scenarios is not realistic. However, increasing the frequency of trips could improve understanding of the continued needs of the community by fostering trust and commitment between organizations and ultimately help the program to match the changing needs of the community.

Next, although there was significant planning and education within the local community by PHAI staff before our arrival, there were still some constraints related to getting members of the local community to the clinics due to obligations of work, limited transportation, and a lack of understanding of the services being providing. Also, due to the local emergency in the dump, some of the PHAI staff serving as translators were pulled to fill different needs. Lastly, it is important to identify the small scope of this project and the limitations in generalizing the information provided here. However, the authors feel this project and the application of the model to it provides an important first step in developing a service-learning program.

There were several lessons learned regarding the service-learning program itself. Getting the message out to community members that a rehabilitation team was coming was something that had been considered prior to their arrival but despite passing information by word of mouth, communication could be enhanced to increase the numbers of community members who received services. Flyers in the local language with pictures demonstrating services offered will be used on future trips advertising the

daily clinics and services offered. Further, while several translators were available for the days volunteers were working in the clinics, the volume at all three clinics was inconsistent which resulted in the need for more translators in one location than another.

One enhancement to the model would be to add a focus on flexibility into the design and implementation phases, as this could prove vital for new programs. Considerations should be made regarding how different the service-learning program might be in the early conceptual stages of development versus how it operates in actuality. Even with the best of planning, some elements of the plan do not work out as expected. This understanding would allow for necessary planning (and back-up planning) for changes that might need to happen on the fly as required for success on the ground. Ultimately, the utility of the model extends to the evaluation and substantiation of existing programs. However, the element of flexibility is vital here too as there might be substantial changes in the local community, which might significantly impact the delivery and sustainability of services.

Finally, it is important to focus on the educational experience of the students in adopting a service-learning project whether it be near home or abroad. Student participants in this project regularly reflected about how much they were learning to work together, to think on their feet, and to really consider the needs of the community. The impact of this experience has the potential to add value to any educational program by enhancing communication, problem-solving, and providing an opportunity for students to view their impact on populations and society. Adopting a service-learning project can be a powerful addition to both the curriculum and clinical fieldwork experiences.

## CONCLUSION

The Pechak and Thompson (2009) conceptual model of international service-learning provides a solid framework for anyone wishing to develop a new community partnership for the development of rehabilitation services. The steps of the model related to developing community partnerships and program design call into focus the need to not only spend adequate time in developing an awareness of the community being served but also in further cultivating those relationships for future program sustainability. Overall, this model is recommended to provide a meaningful student experience and an impactful program for the community.

---

## References

- Abedin, I N.C., Gruppen, L.D., Kolars, J.C., & Kumagai, A.K. (2012). Understanding the effects of short-term international service-learning trips on medical students. *Academic Medicine, 87*(6), 820-828.  
<https://doi.org/10.1097/ACM.0b013e31825396d8>
- Bimstein, E., Gardner, Q.W., Riley, J.L., & Gibson, R.W. (2008). Educational, personal, and cultural attributes of dental students' humanitarian trips to Latin America. *Journal of Dental Education, 72*(12), 1496-509.

- Bridges, D., Abel, M., Carlson, J., & Tomkowiak, J. (2010). Service learning in interprofessional education: A case study. *Journal of Physical Therapy Education*, 24(1), 44-50. <https://doi.org/10.1097/00001416-201010000-00008>
- Brown, D.A., Fairclough, J.L., & Ferrill, M.J. (2012). Planning a pharmacy-led medical mission trip, part 4: An exploratory study of student experiences. *Annals of Pharmacotherapy*, 46(9), 1250-5. <https://doi.org/10.1345/aph.1Q784>
- Clements, J.N., Rager, M.L., & Vescovi, E.M. (2011). The value of pharmacy services on a short-term medical mission trip: Description of services and assessment of team satisfaction. *Annals of Pharmacotherapy*, 45(12), 1576-81. <https://doi.org/10.1345/aph.1Q328>
- Corbett, S., & Fikkert, B. (2009). *When helping hurts: how to alleviate poverty without hurting the poor ...and yourself*. Chicago, IL: Moody Publishers
- Crump, J.A., & Sugarman, J. (2008). Ethical considerations for short-term experiences by trainees in global health. *Journal of the American Medical Association*, 300(12), 1456-1458. <https://doi.org/10.1001/jama.300.12.1456>
- Ekelman, B., Dal Bello-Haus, V., Bazyk, J., & Bazyk, S. (2003). Developing cultural competency in occupational therapy and physical therapy education: A field immersion approach. *Journal of Allied Health*, 32(2), 131-137.
- Grandisson, M., Hebert, M., & Thibeault, R. (2016). Practice guidelines for program evaluation in community-based rehabilitation. *Disability and Rehabilitation*, 39(12), 1243-1251. <https://doi.org/10.1080/09638288.2016.1189604>
- Griffith, T., & Clark, K. (2016). Teaching techniques. Service learning. *Radiologic Technology*, 87(5), 586-588.
- Hoang, D., Nguyen, K.T. (2011). Volunteering in Nha Trang, Vietnam: Senior medical students' perspectives of a surgical mission trip. *Yale Journal of Biological Medicine*, 84(4), 461-70.
- Horowitz, B.P. (2012). Service learning and occupational therapy education: Preparing students for community practice. *Education Special Interest Section Quarterly*, 22(2), 1-4.
- Kaddoura, M., Puri, A., & Dominick, C.A. (2014). International academic service learning: Lessons learned from students' travel experiences of diverse cultural and health care practices in Morocco. *Journal of Nursing Education*, 53(1), 45-7. <https://doi.org/10.3928/01484834-20131223-01>
- Lau, C. (2016). Impact of a child-based health promotion service-learning project on the growth of occupational therapy students. *American Journal of Occupational Therapy*, 70(5), 1-10. <https://doi.org/10.5014/ajot.2016.021527>
- Nouvet, E., Chan, E., & Schwartz, L.J. (2016). Looking good but doing harm? Perceptions of short-term medical missions in Nicaragua. *Global Public Health*, 13(4), 456-472. <https://doi.org/10.1080/17441692.2016.1220610>
- Pechak, C.M., & Thompson, M. (2009). A conceptual model of optimal international service-learning and its application to global health initiatives in rehabilitation. *Physical Therapy*, 89(11), 1192-204. <https://doi.org/10.2522/ptj.20080378>
- Pechak, C.M., Gonzalez, E., Summers, C., & Capshaw, S. (2013). Interprofessional education: A pilot study of rehabilitation sciences students participating in interdisciplinary international service learning. *Journal of Allied Health*, 42(3), e61-e66.

- Petersen, C., Harrison, L., & Wohlers, C. (2015). Evaluation of an international service/learning/clinical education experience utilizing an existing conceptual model. *Journal of Physical Therapy Education*, 29(1), 34-42. <https://doi.org/10.1097/00001416-201529010-00007>
- Potter's House Association International (Internet). (2016a). Retrieved from: <https://pottershouse.org.gt/a-favor-became-a-calling-potters-house-guatemala/>
- Potter's House Association International (Internet). (2016b). Retrieved from: <https://www.pottershouse.org.gt/community-centers>
- Reisch, R. (2011). International service learning programs: Ethical issues and recommendations. *Developing World Bioethics*, 11(2), 93-98. <https://doi.org/10.1111/j.1471-8847.2011.00299.x>
- Ryan-Krause, P. (2016). Short-term global experiences: Reflections, themes, and implications. *Journal of Nursing Education*, 55(7), 379-384. <https://doi.org/10.3928/01484834-20160615-04>
- Sheppard, P.S., & Landry, M.D. (2016). Lessons from the 2015 earthquake(s) in Nepal: Implication for rehabilitation. *Disability and Rehabilitation*, 38(9), 910-913. <https://doi.org/10.3109/09638288.2015.1064482>
- STAND- The Haiti Project (n.d.) Retrieved from <https://www.standhaitiproject.org/about-us>
- Tapley, H., & Patel, R. (2016). Using the PRECEDE-PROCEED Model and service learning to teach health promotion and wellness: An innovative approach for physical therapist professional education. *Journal of Physical Therapy Education*, 30(1), 47-59. <https://doi.org/10.1097/00001416-201630010-00007>
- Volunteer Optometric Services to Humanity (Internet). (December 2016). Retrieved from <https://www.vohs.org/>
- Vu, M.T., Johnson, T.R., Francois, R., & Simms-Cendan, J. (2014). Sustained impact of short-term international medical mission trips: Resident perspectives. *Medical Teaching*, 36(12), 1057-63. <https://doi.org/10.3109/0142159X.2014.920491>
- Wagner, L.D., & Christensen, S.E. (2015). Establishment of a short-term global health nursing education experience: Impact on students' ways of knowing. *Journal of Nursing Education*, 54(5), 295-299. <https://doi.org/10.3928/01484834-20150417-09>