

Lessons learned from International Service Learning Projects

Students's Perspective

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Abstract— In recent years, there is a growing trend of engaging engineering students on international development projects in developing and underdeveloped countries. One such example would be International service learning projects (IESL) associated with the EPICS (Engineering Project in Community Services). There are also several other engineering organizations dedicated towards the needs in developed and developing countries such as Engineering without Borders, and Engineering for Sustainable World. These programs require engineering students, young professionals, and faculty members to get directly involved in international development initiatives and projects in the developing and underdeveloped countries. Traditionally, in the Service-learning literature, most of the studies have focused on the learning outcomes, perspectives, and experiences of the students in the domestic service learning programs. Although the research in domestic service learning program grounds in theory and the implications and results are valuable and useful, because of the complexities of cross-cultural differences associated with IESL programs, these findings may not be suitable and applicable for international service learning (IESL) programs. Through this paper, we report the lesson learned by the students and the faculty members engaged in an IESL program. Our initial findings suggest the intended as well as unintended lessons learned by the students and the faculty members engaged in the IESL program. We believe that the findings from this study will contribute to the growing literature of the engineering service learning research. The findings from this study can help the students and the faculty members engaged in IESL programs to set up a better understanding of the expectations from the IESL programs. The findings will also be useful for those service learning programs who engaged with International community partners. Last but not the least, these findings can provide insight for improving IESL program structures and may also inform further investigations of other international partnerships by providing a baseline of presented four international engineering service learning partnership in this study.

Keywords—*International service learning partnerships; community partners; community engagement; service-learning; learning*

I. INTRODUCTION

Traditionally, in the service-learning literature, most studies have been focused on the learning outcomes, perspectives, and experiences of the students engaged in the

domestic service learning programs (Bringle & Steinberg, 2010; Cruz & Giles, 2000). For instance, studies have shown that service learning has a powerful impact on students' personal development (Eyler, Giles & Schmeide, 1996; Kendrick, 1996; Waterman, 1993) and students tend to develop an increased sense of social responsibility when involved in service learning projects (Eyler & Giles, 1996; Giles & Eyler, 1994; Gray et al, 1996; Kendrick, 1996; Markus, Howard, & King, 1993; Myers-Lipton, 1996). However, little research to date has focused on the experiences of the other stakeholders engaged (faculty and community partners) in the IESL partnerships, which is somewhat surprising given that they are an essential part of service learning programs. The domestic service learning partnerships involve community partners located in the same country/state/city of the service learning program, on the other hand IESL partnerships involve community partners from other countries. The IESL programs require engineering students, young professionals, and faculty members to get directly involved in international development initiatives and projects in the developing and underdeveloped countries. The findings from domestic service learning partnership research are valuable and grounded in research but they might not be applicable on the international service learning programs due to the added cross-cultural complexities among partners. The findings from the domestic service learning partnerships remain limited as a result of additional challenges related to language, distance, and the time and resources required to spend abroad building trust and gathering data (Crabtree, 2008; Cruz & Giles, 2000; Hartman, 2014b; Larsen, 2014). This work-in-progress paper is the part of a larger project in which we intend to explore the motivations, expectations, benefits, and challenges of International engineering service learning (IESL) partnerships from the perspectives of community partners, students and staff members involved in such relationships. Through this paper, we report the lesson learned by the students and the faculty members engaged in an IESL program. We collected the data using a semi-structured interview from 15 students and 8 faculty members engaged in 4 different IESL projects. We used qualitative multiple case study method to analyze the data. Our initial findings suggest the intended as well as unintended lessons learned by the students and the faculty members engaged in the IESL program.

II. LITERATURE REVIEW

In ISL programs in engineering, students engage with international community partners and develop projects using engineering and technology methods based on the needs of the international community partners. The history of engineering-for-development, similar to the international development more broadly, contains many examples of failed and unsustainable projects (Engineers without Borders, 2009). Crabtree (2008) argues that international service learning often engages students in development work – education or health interventions such as building a school or a water system – and, therefore, needs to incorporate understanding of the history of development and “consider participatory development theories, models, and strategies” (p. 24). The ISL programs involve inherent complexities such as cross-cultural interactions, identifying needs of the international communities, negotiation of power dynamics, and global injustice and inequality (Crabtree, 2008). These complexities increase in the IESL programs due to the nature and focus of the projects to be development work, involves engineering design principles and analytical and critical problem-solving. Due to these added complexities, IESL field demands separate attention from the researchers in the broader service learning field.

In last decade, research in the ISL field is gaining momentum and growing faster. In 2010, Tonkin published a research agenda for ISL in the International Service Learning: Conceptual Frameworks and Research. This research agenda included topics related to students’ recruitments, outcomes and characteristics; faculty practices, attitude and belief and; the practice of ISL. He particularly emphasizes the need for research in the field of the international partnership and impact on the community (Tonkin, 2010). A quick look at the ISL literature reveals that the focus of the research in ISL field is more on the students’ beliefs, outcomes and their learning similar to the broader service learning research. For example, Curtin, Martins, Schwartz-Barcott, DiMaria and Ogando (2013) report that the students engaged in an ISL program experience an increasing cultural awareness, adapting physically, shifting focus from self to other, and encountering frustration in the ability to fully meet international community need. Main, Garrett-Wright and Kerby (2013) found that “international service learning opportunities increase students’ awareness of their place in a global society and the potential contribution they can make in society” (p. 10). In a longitudinal study conducted with 22 students engaged in an ISL program, Kiley (2004) found that each student had a change in worldview, but those who stated a desire to alter their lifestyle and work toward social justice faced challenges in their efforts to act on their beliefs and desires (Kiley, 2004). Also, the literature focusing on the students engaged in ISL confirms students’ development of civic and research skills (Schensul & Berg, 2004), the effect on diversity learning and realization of power differential (Camacho, 2004) and positive longitudinal impacts on students’ worldview on moral, political, intellectual, personal, cultural and spiritual (Kiley, 2004).

In addition to the studies focused on students’ perceptions and outcomes, it is worth noting that there are few studies in the ISL field that focus on faculty beliefs and their involvement in the ISL programs. For example, Pechak and Thompson

(2009) conducted a study to understand the perception of faculty on benefits and barriers of the ISL program in physical and occupational therapy. The authors found that the greatest barrier to the ISL program is the program cost and lack of time and funding for faculty. The main benefits were the development of cross-cultural competence and students’ personal development such as core professional values of altruism, professional duty, and social responsibility (Pechak & Thompson, 2009).

While looking at the international engineering service learning literature more specifically, we found that most of the studies were focused on the student outcomes and learning (Philips et al., 2007; Borg & Zitomer, 2008; Budny & Gradoville, 2011; Plumblee, Cattano, Bell &, Klotz 2012). For example, Phillips, et. al. (2007) collected data from a pre- and a post-trip survey from students engaged in an ISL design project. Through this study, the authors found that this international service learning experience helped the students to achieve the ABET Criterion 3 which addresses the skills, knowledge, and behaviors that graduates should have [ABET, 2004]. Borg and Zitomer (2008) collected data through pre- and post-trip surveys, and found that decrease in students’ ratings of four of the 11 learning objectives related to ABET Criterion. The authors suggest the reason behind these decreased ratings was often due to the frustration when students are thrown into a completely new environment (Borg & Zitmore, 2008). While these studies focusing on student learning outcomes are useful, they did not explore the unintended learning of the students involved in the IESL program.

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$$a + b = \gamma \quad (1)$$

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Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
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^a Sample of a Table footnote. (Table footnote)
b.

Fig. 1. Example of a figure caption. (figure caption)

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REFERENCES

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[1] G. Eason, B. Noble, and I.N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529-551, April 1955. (references)

[2] J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68-73.

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[4] K. Elissa, “Title of paper if known,” unpublished.

[5] R. Nicole, “Title of paper with only first word capitalized,” J. Name Stand. Abbrev., in press.

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