

WHAT WORKS IN SERVICE-LEARNING?

Achieving Civic Outcomes, Academic Connection, Career Preparation, and Personal Growth in Students at Ngee Ann Polytechnic

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Abstract

Service-learning (S-L) was adopted as a signature pedagogy in Ngee Ann Polytechnic in 2016. The present study investigated students' civic and academic learning, personal growth, and career preparation in S-L at the School of Humanities & Social Sciences, using mixed methods. The scales and subscales used in this study had acceptable internal consistency (Cronbach's alpha ranged from .71 to .93). Results showed that students perceived significant improvement to their civic outcomes when they participated in S-L compared to when they did not ($n = 351$), strong academic connection and career preparation development through the S-L experience ($n = 832$), and growth in interpersonal and personal development. Significant relationships were found between the student outcomes and S-L design and delivery features, such as perceived impact of S-L, preparedness for S-L, quality of reflection prompts, and amount of interaction with community. Frequency of reflection activities was significantly related to academic connection and career preparation but not civic outcomes. The findings suggest that student outcomes can be optimized through improvements in S-L course design and hold implications for faculty training and development.

Schools in Singapore have been embracing community service through a compulsory Community Involvement Program since 1998 (and replacing it with Values in Action in 2012) with the aim to develop students into socially responsible citizens (Tang & Lim, 2017). As service-learning (S-L) gains prominence in higher education as a high-impact educational practice in the United States (Kuh, 2008), there is also a growing interest in S-L in Singapore's institutions of higher learning. Although a few local universities have made community service a graduation requirement, Ngee Ann Polytechnic (NP) adopted S-L as its signature pedagogy in 2016 (Wong, 2016) and established an Office of Service-Learning to facilitate the institutionalization of S-L in the polytechnic (Tang & Bringle, 2019).

NP adopted the definition of S-L proposed by Bringle and Clayton (2012) as a "course-based, credit-bearing educational experience in which students (a) participate in mutually identified service activities that benefit the

community, and (b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of personal values and civic responsibility” (pp. 114–115). This study examined students’ participation in S-L modules (or courses) across eight diplomas in the School of Humanities & Social Sciences over three semesters, from April 2017 to August 2018. The research was conducted within the strategic planning and other activities to promote the institutionalization of S-L at NP (Tang & Bringle, 2019). Specifically, the research was designed to inform the Office of Service-Learning staff and NP instructors on how best to design and implement S-L and to improve future offerings.

The literature on S-L has provided evidence that S-L courses lead to positive student outcomes across academic, civic, personal, and social domains (Astin, Vogelgesang, Ikeda, & Yee, 2000; Celio, Durlak, & Dymnicki, 2011; Taylor et al., 2015; Yorio & Ye, 2012). For example, in terms of civic outcomes, studies have found S-L to be associated with significant increases in students’ valuing of and commitment to future volunteering service and in students’ belief that they could make a difference (Eyler & Giles, 1999). Local studies in Singapore have found improved civic attitudes in student-teachers who participated in S-L projects (Shumer, Goh, & D’Rozario, 2010) and significant increases in students’ helping behavior and beliefs (Goh, Lim, Ch’ng, D’Rozario, & Cheah, 2009).

The S-L literature on academic outcomes, however, has yielded less consistent results. For example, when self-reported academic impact was measured, McKenna and Rizzo (1999) found positive impact on students’ acquisition and understanding of course concepts, whereas Gray, Ondaatje, Fricker, and Geschwind (2000) found no effect in students’ reported academic abilities. Similarly, where academic outcome was measured objectively in terms of grades, Markus, Howard, and King (1993) found that students assigned to a political science section that included service achieved higher exam scores than those who did not, and Astin et al. (2000) reported a positive effect on students’ academic performance (critical thinking, writing skills, and college grade point average). In a review of the literature, Jameson, Clayton, and Ash (2013) noted that service-learning appears to contribute to equivalent basic factual knowledge acquisition but enhanced critical thinking within disciplinary contexts. Conversely, Lambright (2008) found that students’ participation in S-L was not related to their performance on the final exam. Adding to the complexity, Mungo (2017) found that the better performance by service-learners than non-service learners was mediated by better high school grades. This suggested that having better academic preparation and cultural capital might have helped these students to better navigate the higher education environment. What was consistent in S-L research studies, however, was that effective S-L courses often included deliberate linking of service to curriculum (Billig, Root, & Jesse, 2005; Celio et al., 2011; Taylor et al., 2015).

The benefits of S-L on students’ personal growth in terms of personal and interpersonal development and leadership skills have been demonstrated in various studies (e.g., Astin et al., 2000; Eyler & Giles, 1999; Prentice & Robinson, 2010; Simons & Cleary, 2006). A local study also found enhanced personal relationships and problem-solving skills in student-teachers after participation in S-L projects (Teo & Lim, 2009). In terms of S-L’s potential in students’ career preparation, such as helping students to clarify their career goals and develop skills for the workplace, Gray et al. (2000) found S-L courses to have no effects. However, other studies found

S-L to have a positive impact on students' awareness of career options (Fisher, 2014) and to increase career knowledge and skills and teamwork for service learners (Prentice & Robinson, 2010).

Although evaluative studies of S-L might have shown mixed results, reflection has consistently been identified as a predictor of better student outcomes (Celio et al., 2011; Conway, Amel, & Gerwien, 2009; Mabry, 1998; van Goethem, van Hoof, Orobio de Castro, Van Aken, & Hart, 2014; Yorio & Ye, 2012). Furthermore, stronger positive effects were observed when reflection activities were structured and regular (Hatcher, Bringle, & Muthiah, 2004; Mabry, 1998; Moely & Ilustre, 2014; van Goethem et al., 2014) and when the content of reflection activities was aligned with the desired outcome category (i.e., students' civic attitudes improved when they reflected on their civic attitudes during service) (van Goethem et al., 2014). Reflecting on the connection of service experience to course materials enhances learning (Astin et al., 2000); reflection activities with clear guidelines and directions were also one of the predictors of course quality (Hatcher et al., 2004). In addition, Ash, Clayton, and Atkinson (2005) found improvement in cognitive complexity on independently scored reflection papers across a semester when student reflections were guided by specific prompts designed to facilitate higher-order reasoning. Jameson, Clayton, and Bringle (2008) also found progressively more sophisticated understanding of course materials in students' reflection products from first to second S-L course.

Billig (2007) has argued that course quality matters in S-L: "it is the way in which S-L is implemented that makes a difference" (p. 18). Indeed, more recent studies have uncovered important S-L features associated with effective S-L, and these features have been compiled to develop rubrics and instruments to assess S-L course quality. For example, the IUPUI S-L taxonomy (Bringle, Hatcher, & Hahn, 2017; Hahn, Hatcher, Price, & Studer, 2016) delineates six attributes, namely, assessment, civic competencies, critical reflection, community activities, diversity of interactions, and reciprocal partnerships. The Service-Learning Quality Assessment Tool (SLQAT) measures the quality of S-L courses in the dimensions of course design dimension (e.g., reflection, assessment of student performance), learning dimension (e.g., academic content learning from S-L, connection between service and learning), and student dimension (e.g., student preparedness for S-L, student voice) (Furco & Matthews, 2018).

Although there are many studies on S-L outside North America (e.g., International Christian University, 2009; Ma & Chan, 2013; McIlrath & MacLabhrainn, 2007; Aramburuzabala, McIlrath, & Opazo, 2019), the effectiveness of S-L in the polytechnic context of Singapore has not yet been established. This study evaluated S-L within the School of Humanities & Social Sciences in NP using multiple sources of evidence to triangulate the results as well as investigate what S-L features are associated with the desired student outcomes. To our knowledge, this is the first large-scale, systematic evaluation of S-L in Singapore in higher education.

The research questions of this study were:

1. What is the impact of S-L on students' perceived civic outcomes, connection between service and academic knowledge (academic connection¹), personal growth, and career preparation?
2. What S-L design and delivery features are associated with the student self-reported outcomes?

Method

Participants

There were two groups of student-participants in this study. The first are control and experimental groups—year 1 students from each diploma within HMS were invited to complete a 9-item civic outcomes scale at the start and end of their first semester when there was no S-L module/course (control group). In a subsequent semester when they had an S-L module (experimental group), these students completed the 9-item pre- and a 34-item post-S-L survey. Only participants with both pre- and posttest surveys in the control and experimental conditions were included for the analyses ($n = 351$). Students' responses were tagged to their student identification number to enable comparison of pre- and posttest responses. The second group are students who took an S-L module during a semester within April 2017 to August 2018 and were invited to complete a pre- and post-survey ($n = 832$ enrolled in 13 modules and included the 351 students mentioned above). The mean age of the participants was 18.34 years, $SD = 1.12$, and a majority were female (86.9%).

To triangulate the students' survey results, a survey with 26 community partners (response rate is 46% by representation of modules) and interviews with 12 S-L course instructors (of which six were interviewed twice) and 39 selected students were conducted (see Table 1 for a summary of the diplomas, S-L modules, and number of participants in the survey and interviews).

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1. This study did not measure academic learning in terms of increased scores (academic achievement) or students' perceived improvement in their analytic, problem-solving, or critical thinking skills. Just as mixed results were revealed in this aspect, we also believe that many factors are at play with regards to students' (actual) academic performance. Hence, our measure of academic connection is more a measure of curriculum integration and course quality, asking students to rate how well they were able to connect S-L project/experiences and the module/academic content. Future research accessing direct evidence of student learning will strengthen the case for quality of S-L courses (Tang & Bringle, 2019).

Table 1
Summarized Information of the S-L Modules and Number of Participants

Diploma	S-L module	Type of S-L project—brief description of S-L project	Semester/Level	No. of students surveyed	No. of students interviewed	No. of community members surveyed
Arts business management	Festival & event management	Direct—conduct one or two arts activities for older persons (with financial) at senior activity center	Apr 2017/Year 2	27/37	4	0
			Apr 2018/Year 2	36/39	2	0
Business & social enterprise	Project management	Direct and indirect—plan and carry out projects in collaboration with social enterprises or non-profit organization	Apr 2017/Year 2	34/40	1	4
			Apr 2018/Year 2	30/36	2	6
Early childhood education	Developing family school community partnership	Indirect and direct—create program and product to enhance parental involvement, conduct survey on parenting	Apr 2017/Year 2	125/195	4	0
			Apr 2018/Year 2	155/228	2	2
Chinese studies	Modern Chinese literature	Direct/indirect—promote Chinese language and the Chinese literary association by conducting story reading sessions for children in public libraries	Oct 2017/Year 2	29/29	4	0
			Apr 2018/Year 2	32/39	2	4
Chinese Media communication	News reporting & feature writing	Direct—conduct two outings for older persons from a social club	Oct 2017/Year 1	40/43	4	0

Diploma	S-L module	Type of S-L project—brief description of S-L project	Semester/Level	No. of students surveyed	No. of students interviewed	No. of community members surveyed
Child psychology & early education	Collaboration with family & community	Direct and indirect—conduct programs to enhance parental involvement, survey low-income families with young children, create teaching materials for childcare center	Apr 2018/Year 2	212/266	2	0
Psychology studies	Managing disabilities	Direct—conduct programs for persons with disabilities	Oct 2017/Year 1	54/54	4	7
	Behavior modification & intervention	Indirect—conduct survey to assess views, carry out anti-cyberbullying campaign in different schools at NP	Oct 2017/Year 2	33/54	4	3
Tamil studies in early education	Communication in Tamil II	Direct—conduct skit in Tamil for preschoolers	Oct 2017/Year 1	25/29	4	0
Total				832/1089 (76.4%)		

Additionally, we learned from S-L course instructors that they appreciated the opportunity to reflect on the delivery of their S-L modules through our interviews. We, therefore, also advocate that instructors have a learning conversation with S-L pedagogical trainers or more experienced S-L course instructors at various stages of their induction into S-L pedagogy. That conversation could involve the use of tools such as IUPUI S-L taxonomy (Bringle et al., 2017; Hahn et al., 2017) and the SLQAT (Furco et al., 2017) to explore their perception of the quality of their current S-L courses.

Our findings on the S-L design and delivery features associated with positive student outcomes also appear in several of the S-L course attributes (e.g., community activities, critical reflection, diversity of interaction) in IUPUI S-L taxonomy and in a few dimensions of SLQAT (e.g., the course design, learning, student dimensions). Used as a developmental tool, the three levels in the IUPUI S-L taxonomy and four levels in SLQAT could allow instructors to self-assess the current quality of their S-L courses against those attributes/dimensions and provide them directions to enhance the quality of the next offering of their modules/courses. These frameworks could also be used to obtain feedback from students on the quality of different attributes of S-L courses beyond the ones studied in this research.

Procedure

The survey that community partners completed was adapted from Gelmon, Holland, Driscoll, Spring, and Kerrigan (2006). The relevant items that measured partners' perception on students' civic outcomes were "The students are more aware of community issues after the service-learning experience" and "The students demonstrated a sense of responsibility to help and contribute to the community." The item that measured partners' perception of students' ability to connect the S-L project to the academic contents was "The students' service-learning experience helped them to apply course knowledge and skills to their project." Responses for these items were also on the five-point scale of (1) *Strongly Disagree* to (5) *Strongly Agree*.

Table 2
Scale and Sub-scale Items and the Corresponding Cronbach's Alphas

STUDENT OUTCOMES	
Civic outcomes—9 items	Cronbach's α = .89 (N = 832)
I often try to act on solutions that address social, local, or international problems in the community.	
I try to encourage others to participate in activities that help to improve the community.	
I am aware of what can be done to meet the important needs in the community.	
I am aware of the important needs in the community.	
I feel I have the ability to make a difference in the community.	
I plan to find time or a way to make a positive difference in the community.	
I participate in activities that help to improve the community.	
Being concerned about local or international issues is an important responsibility for everybody.	
Being informed about social issues is a good way to improve the community.	
Academic connection—4 items	Cronbach's α = .88 (N = 832)
This service-learning experience helped me to learn the academic content of the module.	
Concepts learnt in this module helped me to perform my service-learning well.	
This service-learning experience allowed me to apply things I have learned in class to real issues/situations.	
The academic material came alive for me in this service-learning experience.	
Career preparation—3 items	Cronbach's α = .81 (N = 832)
This service-learning experience helped me to gain a clear idea of my career goals.	
This service-learning experience helped with my decision-making about the career that I will pursue in future.	
This service-learning experience allowed me to gauge my readiness for the workplace.	

S-L DESIGN AND DELIVERY FEATURES	
Perceived impact of S-L—5 items	Cronbach's α = .86 (N = 832)
Many of the tasks I performed for this service-learning made/will make a significant contribution to others' well-being.	
This service-learning experience has increased my interest in participating in community service/volunteer activities.	
This service-learning experience caused me to feel more concerned about social issues.	
In this service-learning experience, I had opportunities to make a meaningful contribution to the community.	
I am more confident of my ability to make a difference in the community after this service-learning experience.	
Perceived preparedness for S-L—3 items	Cronbach's α = .71 (N = 832)
Before the S-L project/activities/ideas, I understood the S-L project and my role in it.	
Before the S-L project/activities/ideas, I understood the purpose and objective of S-L in this module.	
I am interested in this community that I worked with.	
Perceived quality of reflection prompts—7 items	Cronbach's α = .93 (N = 832)
The reflection questions helped me to articulate my learning.	
The reflection questions clearly linked the service experience to the module content and learning objectives.	
The reflection questions were structured with clear directions and guidelines.	
The reflection questions helped me to deepen and broaden my thinking.	
The reflection questions helped me to describe my experiences with specific examples and detail.	
The reflection questions helped me to think critically.	
The reflection questions helped me to examine my own assumptions, beliefs and values.	
Perceived frequency of reflection—2 items	Cronbach's α = .54 (N = 832)
For this S-L module, we have had ___ small group reflection(s) (discussions/activities) on the S-L with my lecturer/tutor.	
Response options: 0, 1, 2, 3, 4 and above	

For this SL module, I had done ___ written reflection(s).

Response options: 0, 1, 2, 3, 4 and above

Perceived amount of interaction with community members—1 item

I spent ___ hours interacting directly with the community that I serve.

Response options: 0 hour, 1–5 hours, 6–10 hours, 11–15 hours, 16 hours and above

Table 3
Students' Perception of Their Personal Growth; Lecturers' Perception of Students' Growth (shaded)

Interpersonal development	
Themes	Sample quotes
Interacting and working with community members	Nowadays, we rarely have the time to interact with other people, like, we are busy with ourselves, we want to study; we want to do things on our own. We really don't know how to interact with other people, especially elderly, because of the age gap. But then through the experience, we get to talk to them ... I find myself more confident. I am willing to talk to them more and find out more about their lives. [3]
Being compelled to initiate interaction	The elderly [that] I was paired with was a little bit more on the quiet side. So you really have to probe and be very active, be a bit more thick-skinned in talking to them. So I think that was something that helped me in my personal growth. [5]
Developing communication skills of (future) profession — with children	A lot of children didn't want to talk to us [after the storybook reading]. I realized that, instead of [asking them], "Do you like cars?" you say, "You like car-car? You like dinosaur?" then they will respond, "Ya, I like, I like," then they will talk to you ... [Say] you're a teacher and you want to share what you know but aren't getting a response, change yourself and talk to them in their way, so you can get a response. [22]

	<p>Developing communication skills of (future) profession—with child's parents</p>	<p>Some parents might be a bit panicky even when they come in because they don't know what to do. So I learned to understand their anxiety and also to guide them through the entire process because some parents might be new to this kind of program. [14]</p>
<p>Working with group members</p>	<p>Being more forthcoming in voicing opinions</p>	<p>If I cannot really get along with you in work, I will just keep quiet about it and just wait for the whole thing to end. But I think, for this S-L module, opinions have to be voiced out in order to ensure that this whole project is successful, I learned how to voice out my opinion in a way that doesn't harm or hurt anyone, and then resolve the conflicts from there. [17]</p>
	<p>Resolving differences and conflict</p>	<p>It wasn't the easiest or the most smooth-sailing process because of differences in our group ... even like wedging different views in my group, having to sort it out and having to work out our differences, that made me grow a lot as a person because you have to develop more of a professional mindset when we're doing this kind of thing; we cannot let our personal feelings get in the way. [16]</p>

	<p>Learning to work with disliked group member (but change seemed transient)</p>	<p>I've students telling me "Oh, I realize that I can work with people I don't like." This time round we expanded the group size a little so they might work with people that are not from their own cliques ... She said, "We still talk. At least I can work with her, at least I know I don't hate her now." [L10a]</p> <p>[At first] some cried, "I cannot work with this person—extreme reactions—but we forced it through, then they changed. They wrote [in their reflection] "I see differently." But then upcoming semester, we gave them the criteria: you form groups based on common social cause, cannot be your best friend, yet they go back to their cliques. [L11a]</p>
	<p>Bonding as a team</p>	<p>I had a really good team. So we're really bonded ... we had a lot of work to do in this whole service-learning project and we split it really well. It's not like when we split our work, we will just do our own [part]. We'll always help each other; we're relying on each other like one whole team. [21]</p>
<p>Interacting and working with external partners</p>	<p>Professionalism in communication</p>	<p>In school, we're always very informal with our friends and lecturers. But when we go out there and actually work with the organization, we actually learn how to talk professional [sic]. [11]</p>

	<p>Professionalism in written communication</p>	<p>Students write to you, very childish but when you make them work with external partners, they start to be conscious of the language to use. (WhatsApp group with partners and me). I modeled for them also in the way I write to the partner. Then they see, they learned very fast. So they would say “thank you,” “please.” They write a lot of all these, “If you don’t mind, this is what we will propose. Let us know your thoughts.” They’re very pro now. They talked to the partner. Very careful. Very mindful. This, I can see. Now they talk to me also like that. “Thank you, Mr J.” [L11a]</p>
	<p>Learning to take perspective of community partner and being tactful</p>	<p>You really have to consider their positions, speak with tact, allow them to understand you and also relate to you ... our community partner was quite condescending; he will speak very rudely so he won’t really consider your feelings so you really have to work around him, like walk on the edge. So it’s very difficult. [9]</p>
	<p>Learning to say no</p>	<p>During this whole project, it actually taught me a lot like I should voice my own opinion and not being stepped over on, like, if the stakeholder is asking for too much, it’s actually ok to say no. [7]</p>
<p>Leadership</p>	<p>Being thrust into leadership position</p>	<p>[I developed leadership skills] because I had this picture in my mind, so I had to, kind of, assume the leader position and tell them what I visualized and what materials to prepare, what steps we should take. [30]</p>

	Thinking through consequences of decision	<p>I learned how to be responsible. Because my team's mistake is also my mistake as well, because that's what my instructions were ... I learned that every action that I [take] will have consequence, if I didn't think properly. So it taught me to think through what I want to do first before even carrying it out in the first place. [7]</p>
	Bringing the whole team along	<p>I can really think far ahead but then some of my group mates they need just a little more time to catch up ... and walk on par with the rest of us ... But then, in this group of five, it was a different dynamic. So I have to like, "Okay, you understand? Everybody on the same page?" Just give that few minutes. [13]</p>
	Empowering leader to re-assign team members' roles by strengths	<p>At the start, they didn't know each other. The leader just assigned, you—logistics, you—volunteer management, you—budget. Then cannot work. Halfway through the leader came and see me, then I said, "Look again at their personalities. You now know them more." I empowered him. Then he changed. You—volunteer management, blossom. You—do the program, blossom. [L11a]</p>

	<p>Responding appropriately to challenging situation</p>	<p>[The team leader], at the implementation phase, really held everything together because during the rehearsal, our community partner was very demanding ... on the stage, the show manager would just say, “your singing sucks, you know,” that kind. How would a teenager feel? [The team leader] was the one who got his friends to go and sing. So he felt the need to mediate. His friend said, “I don’t want to do this already. I’m out. I do it because of you only. If I get this kind of treatment, forget it.” Then he walked out. [The team leader] was very good. He is, by nature, quite confrontational, explosive, flip-table type. But I saw how his maturity took over. Very cool. At the back, he pacified his friend. The friend, after all this, went back to practice. [L11b]</p>
	<p>Being assertive and adept at negotiation</p>	<p>I specifically told the leaders that they need to be assertive but of course in a very courteous, respectful way to the partners. Know when to say no and also define their personal and team objectives well, and what’s in it for them ... As was evidenced in some leaders, they really went ahead and negotiated and stated their ground: what they can do and what they cannot do. [L11b]</p>
<p>Personal development</p>		
<p>Themes</p>	<p>Sub-themes</p>	<p>Sample quotes</p>

<p>Changing perceptions and challenging assumptions</p>	<p>Reducing/debunking stereotype</p>	<p>We always feel that the elderly can't do this, can't do that. But then when we were there, they actually love [our activities], and they actually can do very well. The first time we went, we did Bingo and some karaoke sessions. So they really love singing. Then the second time we went, we did canvas painting and silk screen painting, and they love it also. We found out that they are actually not that different from us. They enjoy the same things as us. [3]</p> <p>I used to think like [the migrant workers] were very shady people and they were nothing good to be around with. But after my [S-L project] event, I realized that they are actually full of dreams, aspirations. Some of the migrants who attended my event were actually teachers back in Bangladesh but because it wasn't paying much, so they came over to Singapore ... It's very sad to think how I used to view them, like bad people just because they are different in skin color and then, now, once I get to know them, they are actually very good people too. [7]</p>
		<p>I think, based on what the students said, they [had] never really talked to elderly. [To] young people, they are just old. But I think because the students are forced to spend hours with them for each trip, so they talked. And then some of the students shared that they hear interesting stories. You know, the seniors have life stories to share that sometimes the students just don't see otherwise. So I think that's the change. [L2]</p>

	<p>Changing attitude and behavior toward S-L—from being reluctant to putting in effort</p>	<p>We found it a bit frustrating because we didn't really learn a lot of things during the lecture, and we still needed to give up our two lecture [slots] to go for this service-learning. [And] we're going out to do it; we need to interact with them; we need to interview them ... But after we went for the service-learning, we find it very fun. I think we really want to do it. [25]</p>
		<p>Right from the start, they were quite reluctant to go down because all of the sessions fall on Saturday. They complained why on a Saturday then I have to explain ... I think after the session, they felt tired, but in a way, they also felt rewarded ... and I can see that they are more committed. They even changed the props which I did not ask them to change because they felt that the props from the first run were not so solid, not so good. So they re-did everything. And they came up with better props [to represent the donkey]. [L5b]</p>
	<p>Growth in civic attitudes and behaviors</p>	<p>One of the biggest advantage of service-learning is it's not fake. Everything you do impact lives. Students, although their grades are at the back of their minds, they know, "Hey, that family is waiting there. The woman who sewed a teddy bear, I must sell it for her." They wrote that [in their reflections]. [L11a]</p>
	<p>Appreciation/gratitude</p>	<p>When I helped those families, I can see that because the parents have to work a lot and the children need to go school, they have very little time together. It makes me feel appreciative of the time that I spent with my parents and family members. [15]</p>

<p>Greater self-knowledge/awareness</p>	<p>Realizing that I can</p>	<p>I was a bit scared. I was not very familiar with elderly so I don't really know how to talk to them, how to approach them. But after this experience, I find it's actually not so bad. So something I discovered was, "Oh, I actually can do this." [5]</p>
	<p>Realizing that I'm more capable than I thought</p>	<p>I usually [was] more of a team member than a team leader. Then, when I was forced into the team leader position for the other projects, I realized that I'm actually quite competent, in a sense because the other project, we got an A+. If I didn't step in, we really can't go far because like 70% [of it] was my idea, my effort ... So I felt that I was more capable than I thought. [30]</p>
	<p>Recognizing personal weakness</p>	<p>One personal weakness that I found out through this experience was that I've a tendency to not take the perspective of the learners. In one of the activities, I was introducing [a topic on] emotions to the children but I didn't realize that the picture of the emotion was facing my direction. Because we were sitting in circle, the children on my side could see but the children opposite could not see. So I failed to realize that. I only realized it after my lecturer pointed that out. So that was a weakness that I found out. [29]</p>
	<p>Realizing undesirable traits in self and changed</p>	<p>I used to be very possessive of my own project, like, "If this is my work, then this is my work. Don't come and criticize it." But then after reflecting, I realized that the community partner's feedback is actually very useful. So after a while I told myself I need to let go. [32]</p>

		<p>I had two students who, even in class, were not punctual. They were not committed to their group. It kind of started at the start of the service. Then I sat the whole group down and talked about it. So I think for them, they realized that I am serious about this, they need to be committed to the group and to the organization, and I think there is an improvement in terms of professional behavior expected. [L3]</p>
<p>Strengthening character and professional traits</p>	<p>Adaptive; quick thinking</p>	<p>There were a lot of hiccups with our service-learning. I'm not someone who is very fast in adapting but I guess at that point in time, I was being forced and pushed to adapt ... The [stationary] bus that we were supposed to conduct our indoor activity broke down. We were short of one member, and we had to split our group of five, all of sudden, to conduct one activity indoor and one outdoor, and we changed another activity. We just split up naturally and then we just do it. [17]</p>
	<p>Perseverance</p>	<p>Through this S-L experience, we actually go out and talk to people that we don't know, like strangers ... My friends and I were a bit shy and embarrassed to go up to the parents to talk to them, but after multiple tries, we actually became more confident. We showed perseverance too because not everybody that you ask will actually answer you. Some will ignore and not participate ... We didn't really give up so we managed to get quite a number of survey responses. So it really helps us to grow as a person. [11]</p>

	Resilience	<p>They really just complained and whined to one another. Then they talked to me, “Miss, why like that? Why so rush?” Because after the change, they had to rush to prepare the proposal presentation. And then we told them that the implementation would be in July but some had to start end of June. So that was when I explained to them that life is unpredictable, “I know it’s a sudden change. You got to plan at the last minute but you just got to do what you’ve got to do.” So that’s where they learned the resilience. [L6]</p>
	Patience	<p>I think I’ve grown to be a more patient person. To handle the kids is one thing, I mean, you [also] have to be patient to answer their questions because they have many questions to ask which are not related. But you still have to answer. [39]</p>
	Initiative	<p>For our sessions, we have to be early, like an hour earlier, to prepare all our materials. Then after the session, we also have to pack up. So actually, you must be on time, then you must know what is happening during the whole session. Then take initiative. You see anything that needs your help, then you just do it, even though it’s not your responsibility. [6]</p>
Having limited personal growth	Having done such things before	<p>I think for me it’s about the same because I’d interacted with small children before. So it’s just like more of a reinforcement of how to interact with them. [22]</p> <p>Not much growth...because like in Secondary School you also go down to elderly centers, in CIP (Community Involvement Program). [1]</p>
	No opportunity for leadership	<p>I don’t stand out; the group leaders were the main facilitators. I don’t think I’ve got any strength. [1]</p>

	<p>Behaving in a self-entitled way</p>	<p>The two students walked with the elderly, just following them around. Then one of them actually let the elderly hold the umbrella for her [to shield them from the sun]. I went there a few times, I [said], "Do you want to take the umbrella?" She replied, "But my elderly said she wants to hold it." And I chided, "Then you let her?" [L2]</p>
	<p>Lacking a sense of responsibility</p>	<p>I said "Where are the other two group members?" Then they had no choice but to tell me. They were at one of the back lanes [in the area]. They were still painting the bottles, which I was very upset about. What if the children hold it and it's all sticky? I said, "On implementation day, you shouldn't be preparing your materials anymore; they should be ready." [L8b]</p>

Career Preparation

A single-sample t test showed that the career preparation mean score of 3.78, $SD = 0.77$, $t(831) = 29.28$, $p < .01$, was significantly greater than the neutral/mid-point (3.0), following S-L. Students perceived positive impact in career preparation through their S-L experiences. Qualitative findings from students' interviews largely supported these results. Most student interviewees found that the S-L project helped them (a) clarify their career direction, and (b) gain insights into what is required in the job, while a few students reported limited development in their career preparation.

In terms of career direction, S-L experiences provided students some career direction in terms of making them aware of other course-related careers, allowing them to assess their own suitability for a career related to their courses, their areas of strength, or the helping profession. S-L also provided students opportunities to identify areas of work not to pursue because of poor match between their personal attributes and the job requirements (e.g., being impatient is not good for working as a teacher) or because the job provided limited stimulation and challenge.

Students also gained insights into what is required in the job. Through the S-L projects, students had a better understanding of what it takes to be, for example, an early childhood educator, in terms of the attributes required, the amount of work that goes into lesson preparation, and recognizing the gaps in their current skills. Students also appreciated the real-world context of S-L in which they could get a realistic sense of the work; there was "no more babysitting" by instructors, and they had to manage all the demands of a real project. Students also got to experience or practice skills related to the profession such as planning lessons, engaging children, and managing behaviors.

A few student interviewees found little relevance between the S-L projects and career preparation. They described the S-L project as being too small scale, too specific to the module, or that the project activities (running a campaign) were not aligned with their personal career aspiration (clinical psychologist).

Instructors' perspectives on S-L preparing students for their future careers were mostly positive. They reported opportunities during the S-L for students to be guided to perform to a professional standard; they emphasized why the students, as future early childhood educators, were in the capacity to do something about an issue; they believed the S-L experiences were relevant to the students' desired careers, although it might not seem directly relevant; and there was guidance from the community partners (co-educators) who supervised students to meet industry standards in project management. Where career preparation development was limited, a few instructors reported instances in which students were unable to see the relevance of skills (interview skills) learnt in the S-L project to their desired career or students had failed to exhibit professionalism during the S-L activities.

S-L Design and Delivery Features Associated with Student

Outcomes

Pearson correlations showed positive and significant relationships between S-L design and delivery features (i.e., perceived preparedness for S-L, perceived impact of S-L, perceived quality of reflection prompts) and change in civic outcomes score (r s ranged from .21 to .34, $p < .01$), academic connection (r s ranged from .61 to .79, $p < .01$), and career preparation (r s ranged from .61 to .73, $p < .01$). Spearman correlations showed weak positive and significant relationships between the amount of interaction students had with the community and change in civic outcomes score $r(831) = .17, p < .01$. There were positive and significant correlations between S-L features (i.e., perceived amount of interaction with community and perceived frequency of reflection) and academic connection (r s ranged from .17 to .23, $p < .01$) and career preparation (r s ranged from .14 to .16, $p < .01$) (see Table 4).

Table 4
Correlations Between Outcome Measures and S-L Design and Delivery Features

	Change in civic outcomes	Academic connection	Career preparation
	r	r	r
S-L designs and delivery features			
Perceived impact of S-L	.34**	.77**	.73**
Perceived preparedness for S-L	.21**	.61**	.61**
Perceived quality of reflection prompts	.30**	.79**	.70**
Perceived frequency of reflection	.031	.23††	.16††
Perceived amount of interaction with community	.17††	.17††	.14††

** Pearson’s correlation, $p < .01$ †† Spearman’s correlation, $p < .01$

The data analyses revealed that better perceived student outcomes were associated with students’ more favorable perceptions of the impact of the S-L project, preparedness for S-L, and quality of reflection prompts, as well as greater amount of interaction with the community and more frequent reflection activities.

In eliciting student interviewees’ perspective of what helped their learning (an open-ended question), the following list was obtained: consultation and guidance from the instructor; direct interaction with the community members and the actual S-L experience; and class discussion, reflection, and S-L celebration exhibition. In terms of reflection prompts, most student interviewees found the reflection prompts beneficial because they helped trigger their thoughts and broaden their thinking to consider other perspectives; the prompts helped

them to be more comprehensive, to go more in-depth and be more specific in their written reflections, and to articulate their learning and elaborate using examples. However, some students found the structured reflections to be restrictive and/or not yield genuine responses because they would craft their reflections in accordance to the grading rubrics.

A few students reported that there was “not really a lot of reflection; everything was so rushed.” Indeed, a few instructors also stated that they did not have time to carry out reflection before, during, and after S-L, as recommended. On the format of reflection activities, several students indicated that written reflections were most effective for their learning. Student interviewees also gave feedback that they found writing about their civic learning to be challenging; one student reported that although the provision of reflection prompts was helpful, she found some prompts hard to comprehend. Concerning in-class discussion, there were students who deemed it effective and students who did not find it effective.

Discussion

This study confirmed the expected results that S-L would be associated with positive student outcomes and marks an advance in the field of S-L and S-L research in several ways. In terms of the research objectives to evaluate the impact of S-L on civic outcomes, academic connection, personal growth, and career preparation in Ngee Ann Polytechnic, Singapore, the findings are consistent with positive results from many efficacy studies in Western settings (Astin et al., 2000; Celio et al., 2011; Yorio & Ye, 2012) and support the generalizability and transferability of the good outcomes from S-L to a polytechnic setting in Singapore. With its large sample size of over 800 student-participants and inclusion of career preparation outcomes, which is very much the nation’s focus in SkillsFuture (Government of Singapore, 2019), this study provides support for S-L as a high-impact pedagogy that can potentially enhance a range of learning outcomes.

Complementing the investigation on the impact of S-L on student outcomes with a qualitative approach had revealed largely positive outcomes, although students’ individual responses to the same S-L experience were often varied and diverse, similar to what Eder (2016) found, and so it is perhaps unsurprising that student perceptions varied from strong civic learning, academic learning, personal growth, and career preparation to limited growth in these areas. Nevertheless, the qualitative findings uncovered more comprehensive insights into students’ learning.

In terms of the other research objective to examine S-L features that were associated with the student outcomes, our study moved beyond merely comparing distinct S-L versus no-S-L groups (using a within-subject design) to provide some “fine-grained analysis” of “promising S-L practices” that Billig (2007) had described. The findings revealed particular S-L course attributes, such as impact value of S-L project and quality of reflection prompts, that were related to variations in student outcomes and offered stronger implications for good quality S-L practices through S-L course design (design of reflection activities and selection of community activities and partnerships) and delivery (course implementation) and, importantly, faculty development.

Implication for S-L Course Design

Designing reflections. Besides the consistent finding in the literature on the importance of reflections in effective S-L (Hatcher et al., 2004; Lambright & Lu, 2009; Mabry, 1998; van Goethem et al., 2014), we found that the better the quality of reflection prompts, the better the student outcomes. Interviews with students revealed that most students found the DEAL reflection prompts provided by their instructors to be useful in guiding them to give detailed description of events; examine their own assumptions, beliefs, and values; think broadly and critically; and articulate their learning. However, some students also found the phrasing of some prompts hard to understand. Although the findings on the usefulness of the DEAL model attest to its potential to enhance the quality of reflections, the phrasing of the current reflection prompts probably need to be simplified and contextualized for ease of understanding for the polytechnic students (whose language skills likely varied across the diplomas). Instructors and staff from the Office of Service-Learning can help instructors with subsequent revision and improvement of the reflection activities.

Students had also mentioned in their interviews that they received instructors' guidance and facilitation in the reflection process. Specifically, students often referenced feedback received from instructors or community partners when describing their growth in self-knowledge/awareness. Indeed, the level of instructor guidance has been identified as a factor in effective S-L (Astin et al., 2000; Lambright & Lu, 2009). According to Lear and Abbott (2009), guided student reflection enhances student learning and gives the instructor an opportunity to gauge misaligned expectations. However, instructors need to guard against leading students to respond in particular (e.g., socially desirable) ways. Outside of written reflections, instructors should probably build their facilitation skills to more effectively draw out students' learning and challenge them cognitively to strengthen their academic and civic learning during in-class reflection discussion (based on mixed responses toward perceived effectiveness of in-class reflection discussion). The qualitative findings pertaining to civic action and civic efficacy revealed that where student interviewees gave examples of changed behaviors, it was because they had connected the S-L experiences with their personal lives. Hence, designing reflection prompts that linked the S-L experiences to students' personal experiences is likely to result in more enduring civic learning outcomes after graduation (Richard, Keen, Hatcher, & Pease, 2017). Helping instructors improve students' reflection across semesters must be a high priority to improve the quality of S-L modules and outcomes. These recommendations for improving reflection could be embedded in subsequent S-L course design and development at NP and at other institutions.

The survey results showed that doing more frequent reflections was associated with better academic connection and career preparation outcomes. This result is aligned with the literature that found frequency of structured reflection to be a key factor in effective S-L. Yet students perceiving limited academic connection because they had "no time to think [about] what we [have] learned" suggests that instructors need to consciously set aside time to prioritize space for thinking-about-learning and not allow students to get sucked into busily-getting-tasks-done. It also appeared that students would not intuitively perceive the academic connection or application of academic concepts as they unfold or the relevance of skills used in the S-L project to

their desired future careers. Explicit reference to the academic content during debriefs or reflections as students implemented their S-L project will probably make the academic connection more apparent to them, just as with students' perception of career preparation. The need to be explicit in communicating with students has also been reiterated (though not prominently highlighted enough) by several researchers such as Billig (2007).

Quite unexpectedly, we found no significant relationship between frequency of reflection and students reported change in civic outcomes. Explanations for this result might be inferred from the informal assessment of reflection assignments, which revealed that only one module clearly had reflection prompts on the civic perspective. Instructors might have left out the civic perspective because the community activities were not appropriate for students to explore civic issues through reflection (which suggested that they might be more technically oriented than civically oriented) or due to lack of knowledge of what civic outcome is.

Interviews with instructors suggested that faculty were unclear about civic learning; they gave examples of students demonstrating responsible behaviors during the implementation of S-L when asked to assess students' level of civic responsibility after S-L. Drawing from van Goethem et al.'s (2014) findings that desired outcomes are achieved when the content of reflection activities is aligned with that learning outcome category (i.e., students' civic attitudes improved when they reflected on their civic attitudes during service), the lack of significant association between civic outcomes and frequency of reflection seems logical if, indeed, some instructors were not orienting students to reflect on civic attitudes. Another possible reason that can be inferred from students' feedback is that they found reflection on civic perspective to be challenging. Hence, it appears that there is a need to strengthen both instructors' and students' understanding of civic learning. Speculatively, instructors' and students' familiarity with community services was probably limited to the compulsory program implemented at Ministry of Education schools, and given the adoption of academic S-L in NP in recent years, instructors were unlikely to have a clear understanding of S-L. This identifies an area for subsequent institutional development focused on S-L design and improvement.

Selection of community activities and partnerships. The survey results that revealed significant relationships between student outcomes and impact value of S-L and amount of interaction with community concur with research findings that revealed "value of service" to be an important predictor for academic learning and gains in problem-solving (Moely & Ilustre, 2014) and service hours to be positively associated with academic learning (Mabry, 1998); longer duration of contact between students and service beneficiaries (Lambright & Lu, 2009) and longer project duration (Billig, 2007) are features of effective S-L.

The qualitative findings also supported the critical factor of S-L course design in selecting community activities and partnership: students attributed increases in civic outcomes scores to their interactions and bonds built with the community and witnessing community issues; students spontaneously credited the direct interactions and experiences with community members for their learning; students also attributed the direct experiences with the community to affirmation of or reassessment of their career choices. Students' reported gain in their personal growth—interpersonal development (e.g., enhanced skills in interacting and working with group members and external partners, leadership) and personal development (e.g., reduced stereotyping)—is consistent with other works that confirmed the importance of contact in promoting attitude change (Conner

& Erikson, 2017) and is aligned with the intergroup contact theory (Everett, 2013). Hence, selecting direct service that affords students greater opportunities for face-to-face contacts with the community in the S-L projects could be beneficial to student outcomes and should be an integral component of S-L course design.

Insights on S-L course design in selecting community activities and partnerships could also be gleaned from student interviewees who accounted for a decrease in civic outcome scores (e.g., perceived limited impact, no real issue), which suggests that S-L course instructors should select and design projects to have perceivable impact and address real issues. Instructors might need to ensure some novelty in the S-L activities/project they design so that students do not perceive the activities to be something that they had done before (students perceived limited growth because S-L activity was similar to secondary school's community service program; student perceived S-L to be interesting and wanted to do more S-L). The S-L activities should be substantial enough to allow every student to contribute meaningfully (student perceived limited academic connection due to limited participation), be challenging enough to be just beyond students' reach and stretched them beyond their comfort zone (students enhanced their character and professional traits such as adaptability and perseverance due to unpredictability of some S-L projects), be designed to apply specific academic concepts and skills (students perceived limited academic connection because generic skills would suffice for implementing the S-L project), and be accompanied with substantial opportunities to discuss and reflect on the application of those concepts and skills. Yet, there is a need for balance. The constraints (or rationalizations) reported by student interviewees with decreased civic outcomes scores (stress from school workload) might be very real to time-strapped students juggling the competing demands of school, part-time employment, and co-curricular activities. Hence, it seems to be an endorsement for NP to structure civic involvement through S-L modules because many students are unlikely to engage in community activities on their own.

At the same time, we observed from student interviewees (e.g., those who reported low civic efficacy and feeling two-minded about acting on a social issue) that their lower sense of efficacy might be due to a greater understanding of the complexities of the social issues. Students with higher civic efficacy who believed that "even though it's a small gesture, as long as your heart is there, it's good" might not have explored a social issue more deeply. Perhaps, as Billig (2007) has suggested, scaffolding smaller tasks in the S-L project with follow-through will help students see the results of their activities and mediate the frustration they might feel when tackling a formidable social issue (e.g., discrimination of persons with disabilities).

Also, where student interviewees had made accounts in terms of feeling stressed from misunderstanding with community members (the elderly "felt used" that the students went out with them so that they could interview them to write their feature article assignment), it is critical that instructors clarify expectations with community partners and critically evaluate their S-L activities to prevent "the danger of 'using' individuals and communities in inappropriate ways" that Eby (1998, p. 3) warned about. Following negative experiences, the onus is, perhaps, on the instructors to help students process their learning through reflections.

Implications for Faculty Development

A key factor to ensuring quality in S-L that can be drawn from the research results and the above discussion on S-L course design—designing reflections and selection of community activities and partnership—is the course instructor. Because, as Billig (2007) has claimed, quality of S-L matters, it, inexplicably, meant that faculty development activities matter to the design and implementation of an S-L course. Good faculty development would support instructors to produce good initial S-L courses and continue to enhance and stabilize their S-L courses. For example, strengthening course instructors' understanding of civic learning and civic competencies and equipping them with strategies to discuss social issues and civic attitudes with students appear warranted.

From the findings of a significant relationship between students' perceived preparedness for S-L and student outcomes, and students' accounts for decreased civic outcomes scores (e.g., feeling stressed by workload and/or demands of community partners), it seems necessary that course instructors prepare students for the demands of the S-L project. Indeed, Billig, Root, and Jesse (2005) identified preparation of students for all aspects of their service activities to be a factor of effective S-L. Hence, faculty training should emphasize to course instructors the importance of preparing students mentally and emotionally for S-L.

To date, more than 400 academic staff have been trained in S-L at NP, and this is an ongoing effort (Tang & Bringle, 2019). Undeniably, a lot of work goes into the design of a quality S-L course, and scaffolding of training may be necessary in order that new S-L course instructors are not overwhelmed while they build the quality of existing S-L courses. Making decisions on the questions in Table 5 might be a good start for new S-L course instructors to focus on one or two key S-L features at the start of their S-L journey and gradually incorporate other features in the subsequent offering of the course.

Table 5
Questions to Consider when Designing S-L Course

S-L design and delivery features	Questions
Impact value of S-L project	<p>What S-L project would allow students to make meaningful contribution?</p> <p>Is it adequately challenging?</p>
Amount of interaction with community	<p>What are the opportunities for interaction with the community member?</p>
Civic learning	<p>What social issue would be addressed through the project?</p> <p>At which points of the S-L experience are discussion of the social issue and civic learning most appropriate?</p>
Academic connection/learning	<p>What academic concepts would students apply?</p> <p>What opportunities in the S-L project are available for students to apply these concepts?</p> <p>What reflection prompts would help students make the academic connection?</p>
Reflection (quality, frequency)	<p>How should the reflection prompts be phrased for easy understanding?</p> <p>What reflection activities are beneficial before, during, and after S-L?</p>
Preparing students for S-L	<p>What are potential challenges that students could be prepared for?</p>

Additionally, we learned from S-L course instructors that they appreciated the opportunity to reflect on the delivery of their S-L modules through our interviews. We, therefore, also advocate that instructors have a learning conversation with S-L pedagogical trainers or more experienced S-L course instructors at various stages of their induction into S-L pedagogy. That conversation could involve the use of tools such as IUPUI S-L taxonomy (Bringle et al., 2017; Hahn et al., 2017) and the SLQAT (Furco et al., 2017) to explore their perception of the quality of their current S-L courses.

Our findings on the S-L design and delivery features associated with positive student outcomes also appear in several of the S-L course attributes (e.g., community activities, critical reflection, diversity of interaction) in IUPUI S-L taxonomy and in a few dimensions of SLQAT (e.g., the course design, learning, student dimensions). Used as a developmental tool, the three levels in the IUPUI S-L taxonomy and four levels in SLQAT could allow instructors to self-assess the current quality of their S-L courses against those attributes/dimensions and provide them directions to enhance the quality of the next offering of their modules/courses. These frameworks could also be used to obtain feedback from students on the quality of different attributes of S-L courses beyond the ones studied in this research.

NP is also exploring ways to build upon the initial rollout of S-L (Tang & Bringle, 2019). Subsequent faculty development will focus on scaffolding S-L (i.e., students taking a second module with S-L, working on final year or capstone S-L projects that address social causes, participating in a civic internship with organizations that help to promote public good, embarking on international S-L programs, initiating co-curricular projects that address social causes). Another area of faculty development we propose is in faculty's scholarship of teaching and learning. The team that volunteered to trial the S-L pedagogy one year before the start of this research conducted a literature review on S-L, acquired knowledge on the promising practices in S-L, and, perhaps, more consciously delivered on the features to enhance the quality of our S-L courses. Hence, we encourage more S-L course instructors to conduct some form of informal assessment or formal research on their own S-L course delivery and use the data to improve their practice and, by sharing their research, inform the field about good practice.

Limitations

The current study had a few limitations worth noting. Although there was a large sample size, the sample came from one school and is not representative of the whole NP student population. It is said that the School of Humanities & Social Sciences attracts students who are aligned to the school's culture of "think people" and may be more receptive to S-L and reflection activities than students in other schools. Another limitation is that almost 87% of the student-participants were female, but we found no significant difference in student outcomes by gender, which is consistent with Lambright and Lu's (2009) study that also found no significant difference in outcomes between males and females.

The collection of tagging survey responses to student identification number and the fact that the researchers

were also the course instructors for five of the S-L modules risked social desirability and self-report bias. There might also have been self-selection bias in students agreeing to complete surveys and to be interviewed. Nevertheless, we had attempted to mitigate these limitations by assuring students that there was no penalty for non-participation and that only the research assistant accessed the tagged data. We also framed and emphasized participants' role as helping us improve the S-L pedagogy through giving honest feedback.

Furthermore, this study (as with many S-L research studies) only used self-report data that, according to Steinke and Buresh (2002), does not directly assess student learning but possibly measured student satisfaction (Eyler, 2000). This study attempted to address this limitation by obtaining other forms of evidence such as student interviews and instructors' and community partners' perspectives.

Future Research

Some past S-L studies have been criticized for not detailing features of the S-L course that brought about the documented outcomes (van Goethem et al., 2014). Although more studies are starting to detail some features of S-L that brought about the documented outcomes (e.g., Billig, 2007; Hatcher et al., 2004; Lambright & Lu, 2009), the intricacies of how different variables work under different conditions to lead to the desired outcomes might still be elusive. Our study might be considered a step toward the "more fine-grained analysis" to move S-L research beyond evaluation or mere comparisons on the performance of service-learners versus non-service-learners. We advocate that future research use tools such as IUPUI S-L taxonomy or SLQAT to assess levels attained by S-L courses as variables to investigate for their association with gains in student outcomes. Future research will need to explore further how various theories behind these variables clarify the results and extend them.

Conclusion

Tang and Bringle (2019) documented the recent and rapid institutional steps that NP took to implement S-L as the institution's signature pedagogy. The modules that were in this research, therefore, were brand new or relatively new S-L modules. The encouraging results from this study adds support to S-L being a high-impact pedagogy in developing student outcomes in civic, academic, personal growth, and career preparation domains within the context of a polytechnic academic culture. These early steps warrant subsequent attention to all activities focused on integrating S-L into NP's culture. The significant associations between the student outcomes and S-L design and delivery features such as impact value of the S-L project, amount of interaction with community, preparedness for S-L, quality of reflection prompts, and frequency of reflection activities suggest that the work for the instructors to design S-L courses is not easy. Yet, in this age of disruption and declining civic engagement (De Sio, 2018), fulfilling the educational mission of developing civic mindedness and active citizenry is even more paramount. When instructors can be convinced that S-L works, and that they

hold the key to effective S-L because they interact with students at their zone of proximal development, they are more likely to embrace the S-L pedagogy. Investing time and applying critical, creative, and caring thinking into the planning of S-L projects—critical decision-making on meaningful S-L projects (including suitable community partners to collaborate with) and academic content for application, creative use of time to incorporate reflection sessions, using creative means to explicitly guide students, and caring-focused facilitation of the reflections toward civic mindedness—is definitely worthwhile for enhancing the educational experiences of students, instructors, and community partners. Correspondingly, commitment from senior management of institutions of higher learning to support the faculty in their endeavor to deliver quality S-L should be evidenced in resource investment toward faculty training and development (Tang & Bringle, 2019).

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