



Transformation and Development of University Students through Service-Learning: a Corporate-Community-University Partnership Initiative in Hong Kong (Project *WeCan*)

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Received: 6 May 2019 / Accepted: 21 May 2019 / Published online: 3 June 2019

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Abstract

As service-learning is still at its infancy in Hong Kong, there is a need to systematically evaluate the effectiveness of service-learning projects and bring important implications to the curriculum. In this study, we evaluated the effectiveness of a service-learning initiative that involved a corporate-community-university partnership (Project *WeCan*). In total, 138 university students (service providers) were included. We evaluated the project through three mechanisms. First, pretest and posttest data showed that students changed in the positive direction in terms of the intended learning outcomes in the civic engagement, cognitive and academic domains. Second, students showed positive changes in terms of psychosocial competencies and self-leadership. Finally, qualitative analyses of the reflective journals showed that students demonstrated positive changes in the areas of social responsibility, interpersonal competence, and intrapersonal skills. The findings underscore the utility of service-learning as an effective pedagogy to promote holistic development of university students.

Keywords Service-learning · Positive youth development · Corporate-community-university collaboration · Multiple evaluative strategies

Introduction

Although service-learning (SL) has been defined in various ways, researchers working in the field have consistently recognized it as a type of experiential education that incorporates two fundamental constructs: service and learning (Bringle and Hatcher

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1996; Deeley 2010; Jacoby 1996). It integrates community service with clear educational goals through structured and tailored learning experiences, and hence different from voluntary service or internships (Jacoby 1996; Ma et al. 2019; Seifer 1998). SL has been shown to bring beneficial effects to students. Research findings have revealed that SL projects facilitated students' intellectual and academic development and cultivated their sense of civic responsibility through applying knowledge gained in classroom to real-world practice and critical self-reflection (e.g. Astin et al. 2000; Eyler and Giles 1999; Ocal and Altınok 2015; Welch and Billig 2004).

While service-learning projects and research studies have been conducted in the West, SL remains a comparatively new concept in the Asian context (Xing and Ma 2010). With specific reference to Hong Kong, SL has gained a footing in the Higher Educational Institutions (HEI) curriculum over the past decade and witnessed a steady increase in research. From 2012 to 2013 academic year, XXX University has initiated a course reform in which SL has been introduced as a credit-bearing, mandatory course to students (Shek and Chak 2019). To date, the Senate has approved 72 SL subjects for implementation. In the Department of Applied Social Sciences, the Leadership and Intrapersonal Development Team have developed two SL courses focusing on child and adolescent development (APSS2S05 "Promotion of Children and Adolescent Development") and service leadership (APSS2S09 "Service Leadership through Serving Children and Families with Special Needs"). The details are shown in Table 1.

Overview of Project *WeCan*

Some of the service participation in the above-mentioned subjects has been carried out in the Project *WeCan* schools. Launched in 2011, Project *WeCan* is committed to equal partnership between business, university and community to serve disadvantaged students in local secondary schools who are from low-SES families and new immigrant families. Studies have shown that low SES was tightly associated with poor school adjustment, and higher emotional and psychosocial problems (Becker and Luthar 2002; Shek 2002). According to the Hong Kong Census and Statistic Department (2016), around 17.4% of the children (<18 years) lived in poverty and suffered from financial hardship. In response to this burning social issue, this project strives to enhance learning opportunities for those under-resourced students and increase their chances of social mobility. To date, there have been 76 secondary schools with 66,000 students benefiting from this project. The project that this study focuses on is a business-in-community partnership between The Wharf (Holdings) Limited, the XXX University and 10 disadvantaged secondary schools in Hong Kong. Prior to service delivery, students of XXX University are required to discuss with schools with regard to the needs and interests of their students, and then to design service activities customized to each individual school. Depending on the disciplinary background of the students, the service activities range from interest classes such as arts workshop and cooking class, academic skills such as phonetics class, mathematics booth and STEM week, to activities relevant to educational and career prospect such as leadership workshop and team-building campus visit (Ma et al. 2019). In the academic year of 2017–2018, approximately 587.8 h of service were provided to the ten secondary schools with a total of 8571 secondary school students participating in the service activities.

Table 1 Descriptions of two SL courses developed by the Leadership and Intrapersonal Development Team at XXXX University (Extracted from XXXX University 2007a, b)

	APSS2S05 "Promotion of Children and Adolescent Development"	APSS2S09 "Service Leadership through Serving Children and Families with Special Needs"
Intended learning outcomes - After taking the subject, the students are able to:	<ol style="list-style-type: none"> 1. Critically examine the different perspectives of child and adolescent development and apply the concepts in understanding the needs and potentials of underprivileged children and adolescents in the community 2. Integrate knowledge on child and adolescent development into real life situations through service delivery 3. Apply the knowledge (e.g. discipline specific knowledge, such as theories on child and adolescent development, positive youth development, health education issues and project-specific concepts, such as modes of service delivery) and skills (such as engagement and communication skills with children and adolescents) they have acquired in university education to deal with complex issues in the service setting 4. Reflect on their roles and responsibilities both as a professional in their chosen discipline and as a responsible citizen 5. Cultivate the positive values and strengths orientation 6. Cultivate civic responsibilities and prosocial behaviors 7. Develop the sense of care and compassion towards other people, especially the underprivileged children and adolescents in the community 8. Enhance self-confidence, problem solving and decision-making capabilities 9. Enhance the social competence and interpersonal skills through collaboration with the partners, partner agencies, parents and service targets 	<ol style="list-style-type: none"> 1. Address the needs of the service recipients through service delivery 2. Link their service experiences with academic course materials 3. Appreciate and respect people from diverse background 4. Integrate academic learning (e.g., knowledge on service leadership) into the service experience and activities 5. Demonstrate empathy and care by providing community service 6. Apply the skills (e.g., active listening) and knowledge (e.g., moral character and competencies) they have acquired in university education to deal with complex issues in the service setting 7. Reflect on their service leadership qualities through service learning 8. Work effectively with different parties (e.g., students, teachers, family and community partners) when preparing and delivering service
Course structure	<ul style="list-style-type: none"> • 10-h e-learning module • 34-h lectures, seminars and workshops • 40-h service participation • 28-h post-field work integration and reflection (including 6 h on group presentation and wrap meeting) • 18-h reading and self-study 	<ul style="list-style-type: none"> • 10-h e-learning module • 20-h lectures, seminars and workshops • 40-h service participation • 30-h reflective journals and reading • 35-h service planning, preparation and review (i.e. proposal for service and group presentation)

Research Focus

A systematic assessment of SL program can demonstrate students' learning outcomes, bring valuable implications to curriculum and open dialogues with faculties and administrators on curriculum transformation (Steinke and Fitch 2007). A close review of existing literature in the context of Hong Kong reveals two observations. First, researchers have focused on delineating the overall SL curricular model and practices in local HEIs (e.g. Powers 2010; Wong and Chandra 2015). Second, quantitative self-report survey data, which often lacks strong theoretical frameworks, are commonly used to evaluate perceived benefits of the programs (e.g. Chan et al. 2009; Ngai 2006). Given the mandatory position of SL in many Hong Kong HEIs, there are calls for a more systematic assessment of student learning outcomes in the field that can also well connect with and contribute to relevant theories with a re-contextualization to Hong Kong. In response, this study is an attempt which adopts a mixed-method approach to evaluate the effects of SL on students by exploring their SL engagements from multiple perspectives. The two research questions of the present study are:

- Did the students change through the service-learning process?
- What types of change did students make through their service-learning participation? What is the nature of these changes?

This study focuses on students' SL experiences, as stated previously, drawing on both quantitative and qualitative data collected in the process. The quantitative part explores the changes based on some essentials skills pertinent to SL theories and positive youth development (PYD) model. In contrast, the qualitative part investigates their SL experiences as a dynamic process during which students made sense of their engagements.

Framework

Positive Youth Development (PYD) Model

Divorcing from a deficit perspective, PYD considers adolescents with great developmental potential and capacities instead of treating them as individuals that need to be corrected with problems to be fixed (Damon 2004; Lerner et al. 2005). Researchers (e.g. Eccles and Gootman 2002; Lerner 2004; Zaff and Lerner 2010) have suggested a 5C's model which reflects five developmental positive outcomes of a PYD program and encompasses psychological, behavioral and social characteristics (i.e. competence, confidence, connection, character and caring). With the five characteristics generated over time, adolescents are less likely to be on a developmental trajectory of problem behaviors such as delinquency, and more likely to achieve the ultimate goal of the 6th C's, "contribution" to self, family and community (Lerner 2004). Drawing upon experimental or quasi-experimental research, Catalano and his colleagues (Catalano et al. 2004) identified 15 PYD constructs, including bonding, resilience, social competence, recognition for positive behavior, emotional competence, cognitive competence, behavioral competence, moral competence, self-determination, self-efficacy, clear and positive identity, beliefs in future, prosocial involvement, prosocial norms,

and spirituality. Building on the scales, a few studies (e.g. Shek and Ma 2010; Shek et al. 2007; Shek et al. 2008a) have been carried out to develop the Chinese Positive Youth Development Scale (CPYDS) to assess Chinese adolescents, which showed that the CPYDS possessed good reliability and validity, and provided a useful measure to assess the PYD of Chinese adolescents. Their works entail critical practical implications for this study in that it has been re-contextualized and thus considered more culturally appropriate.

PYD and SL are in a way highly interconnected. Essentially aligned with SL, PYD also recognizes students as active social agents (Golombek 2006). As an asset-based model, it accents the role students assume as participants rather than passive recipient in civic affairs where they are encouraged to address the true community needs and expected to gain civic development (Golombek 2006; McKay-Jackson and Johnson 2015). In a quantitative study, Dávila and Marie (2007) found that SL promoted scholastic performance, as participation in SL significantly improved the odds of college graduation. In addition, PYD and SL can interplay in a mutually-reinforcing and complementary way, as Whitehead and Kitzrow (2010) succinctly put it, “service-learning leads to PYD, and PYD leads to service” (p. 2). For example, empirical studies have shown that SL is a productive way to encourage social and emotional learning (Chung and McBride 2015; Zins et al. 2007), which constitutes an essential part of PYD. In fact, “service learning has become an important strategy for encouraging positive youth development” (Zaff and Lerner 2010, p. 21). In turn, as SL helps foster PYD, the sixth C’s is more likely to emerge and lead to more service (Whitehead and Kitzrow 2010). The present study largely builds upon the PYD perspective to examine the learning outcomes of SL as well as the connections between SL and PYD.

In this study, the change with reference to PYD attributes in young people was assessed via three ways. First, we focused on the learning outcomes of the subject in the area of civic engagement and intellectual as well as cognitive development. These attributes were assessed by a questionnaire developed by the Office of Service-Learning (OSL). Second, we used the Chinese Positive Youth Development Scale to assess changes in the different PYD qualities in the students. Finally, based on the reflections of the students, we assessed their changes in intrapersonal and interpersonal competencies.

Methods

Our research was carried out in 2017–2018 academic year. Overall 138 students (72 from APSS2S05 and 66 from APSS2S09) participating in Project *WeCan* were included in the current study. In order to explore the changes of students in a systematic way, both quantitative and qualitative approaches were adopted as a method of triangulation.

Quantitative Evaluation

Evaluation of Intended Learning Outcomes (ILO)

In order to evaluate the learning outcomes of the service implementers, a self-report questionnaire was administered before the commencement and after the completion of their SL courses. This pre-test post-test design was employed to compare the mean

differences of learning outcomes before and after their SL courses. This assessment tool was developed by OSL of XXX University based on a review of the literature concerning common learning outcomes students claim to be able to achieve via SL, i.e. civic development, and intellectual and cognitive development (e.g. Deeley 2010; Eylar and Giles 1999; Ocal and Altınok 2015). These two well-documented learning outcomes also resonate with the learning objectives of the two aforementioned SL courses. Juxtaposing literature with the learning objectives, OSL designed this 15-item questionnaire (see Tables 2 and 3) covering two main areas, including a) civic development (items 2, 4, 9, 13, 14 and 15, pretest Cronbach's $\alpha = .74$, posttest Cronbach's $\alpha = .64$), and b) intellectual as well as cognitive development (items 1, 3, 5, 6, 7, 8, 10, 11 and 12, pretest Cronbach's $\alpha = .86$, posttest Cronbach's $\alpha = .78$). For intellectual and cognitive development, it covers items in the fields of the application of knowledge (item 1 and 7), self-reflection (item 6), critical thinking ability (item 3, 8 and 12) and problem solving skills (item 5, 10 and 11). It was measured on a 7-point Likert scale with "1" representing "strongly disagree" and "7" representing "strongly agree". In general, the values of Cronbach's alpha are reasonable and indicate good internal consistency. Theoretically speaking, these items are also closely related to PYD attributes (i.e., contribution and competence in the 5C's).

The OSL questionnaire was distributed to all 138 students (service implementers) who took part in Project *WeCan*, and they were asked to complete it and indicate to what extent each item was true for them. A paired samples t-test was performed to compare the mean differences before and after SL courses in terms of students' civic, and cognitive and intellectual development as two main domains as well as 15 individual items. Reverse-scored questions (item 4, 6 and 9) were recoded for analysis.

Evaluation of PYD Qualities

The PYD questionnaire was originally developed and validated by Shek and Lin (2016), which was largely informed by the CPYDS discussed in Section Two. It comprises a) Positive development constructs (pretest Cronbach's $\alpha = .85$, posttest Cronbach's $\alpha = .93$), where they were further divided into social competence (3 items, sample item: "I know how to communicate with others"), emotional competence (3 items, sample item: "When I am unhappy, I can appropriately express my emotions"), cognitive competence (4 items, sample item: "I know how to find the causes of and solutions to a problem"), behavioral competence (2 items, sample item: "I can express views that are different from others"), moral competence (4 items, sample item: "I fulfill my promises"), self-determination (3 items, sample item: "I am confident about my decisions"), clear and

Table 2 Differences in learning outcomes before and after SL course using paired samples t-tests

Scale	Condition	Mean	SD	t-value	df	Sig
Civic development	Pre-test	5.07	.75	-.214	121	.831
	Post-test	5.08	.70		121	
Intellectual and cognitive development	Pre-test	5.16	.70	-2.01	121	.047*
	Post-test	5.29	.56		121	

* $p < .05$

Table 3 Differences in learning outcomes before and after SL course using paired samples t-tests (a breakdown of items)

	Pre-test	Post-test	Paired-sample t-test	
	Mean (SD)	Mean (SD)	Mean Difference	t-value
1. I know how to apply what I learn in class to solve the real-life problems encountered in the service-learning projects.	5.25 (1.01)	5.49 (.81)	-.25	-2.54*
2. I care about people who are facing great difficulties in life.	5.63 (.96)	5.70 (.80)	-.07	-.77
3. I often look at complex issues or problems from different angles.	5.36 (1.04)	5.50 (.92)	-.14	-1.39
4. I do not consider it as my civic duty to help disadvantaged people in the community (recoded).	4.70 (1.48)	4.72 (1.64)	.02	-.09
5. I often modify my strategies to solve a problem according to the situation.	5.40 (.87)	5.60 (.80)	-.20	-2.15*
6. I seldom reflect on how I can make a meaningful contribution to my community (recoded).	4.00 (1.50)	3.88 (1.60)	-.15	-1.00
7. I am able to apply my knowledge to design a service-learning project that benefits the community.	5.21 (1.02)	5.47 (.82)	-.26	-2.65*
8. I am able to examine other people's ideas/arguments critically and point out their merits and flaws.	5.32 (.87)	5.30 (.93)	.02	.23
9. I am seldom concerned about the well-being of the disadvantaged people whom I do not know personally (recoded).	4.35 (1.38)	4.03 (1.54)	-.32	2.15*
10. I am able to analyse complex issues to make informed decisions.	5.22 (.93)	5.45 (.81)	-.23	-2.49*
11. I am able to think of different strategies and options to dealing with a problem.	5.40 (.90)	5.61 (.84)	-.21	-2.13*
12. I am able to evaluate the logic, validity and relevance of information.	5.49 (.90)	5.49 (.84)	.00	.00
13. I am committed to helping the disadvantaged in the community.	5.33 (.97)	5.36 (.90)	-.03	-.30
14. I feel a personal obligation to do what I can to help those who are less fortunate than me.	5.31 (.97)	5.39 (.94)	-.08	-.72
15. I believe all of us have a moral commitment to civic affairs, no matter how busy we are.	5.33 (1.07)	5.47 (.98)	-.15	-1.32

* $p < .05$

positive identity (2 items, sample item: "I believe I have the qualities and abilities of a leader"), belief in the future (3 items, sample item: "I have confidence to graduate from university"), spirituality (4 items, sample item: "I have found my purpose in life"), and resilience (3 items, sample item: "I believe problems in life can be solved"), b) service leadership (pretest Cronbach's $\alpha = .87$, posttest Cronbach's $\alpha = .97$), which was categorized into caring disposition (8 items, sample item: "I am always ready to lead a hand to those in need"), self-leadership (5 items, sample item: "I am capable of managing my own life"), character strength (15 items, sample item: "I am grateful for many things in my life"), and beliefs and values of service leadership (6 items, sample item: "Everyone has

opportunities to practice leadership everyday”), and c) other psychosocial variable, i.e. life satisfaction (5 items, sample item: “The conditions of my life are excellent”, pretest Cronbach’s $\alpha = .74$, posttest Cronbach’s $\alpha = .90$). The procedure of data collection resembled that of the evaluation of ILO, with participants being asked to score on a 6-point Likert scale and also pre-tested and post-tested on these PYD-related constructs.

Qualitative Evaluation

Reflective Journals

Upon completion of the service activities, all students were required to submit a credit-bearing, reflective journal (approximately 1000 words) to elaborate on their SL experiences. It should be a reflection of their personal experiences, such as their roles and contribution, in-service activities, the challenges they confronted, the skills they used in solving problems, their strengths and weaknesses, and the link they perceived between theory and practice. Only journals graded B plus and above were included for data analysis because such journals are kept for record purpose. In total, 39 journals were collected for the qualitative analysis.

A well-trained researcher visited the raw data and conducted open coding to identify patterns in the first round, i.e. what types of changes students experienced in SL (e.g. enhanced analytical skills). In the second round, the researcher revisited the identified patterns and grouped them into broader categories (e.g. “enhanced analytical skills” was grouped into “cognitive competence”). This process was followed by another cycle that themed those categories into intrapersonal, interpersonal and societal domains (e.g. “cognitive competence” was themed into “intrapersonal competence”). It was noted that themes and categories in the last two rounds were based on frameworks in previous studies (Shek 2010; Shek and Sun 2012), which drew on more than 1100 student diaries and were also informed by PYD model. The final coding process concerns the nature of the overall changes. The students’ experiences would be labelled “positive” if the perceived changes are primarily positive, “negative” if they are primarily negative and “neutral” if there are relatively equal share of mixed ones.

Intra- and interrater reliability were conducted to enhance the reliability of data analysis. Among 39 journals, 10 were randomly selected with overall 94 codes cross-checked by another well-trained researcher. Attention was given to broad categories (e.g. cognitive competence and emotional competence) and the nature of the overall change (i.e. positive, negative or neutral). For the broad categories, intrarater and interrater agreement percentage reached 98.9% and 94.7% respectively, and they both reached 100% for the nature of overall transformation, suggesting a high reliability for the codes.

Results

Evaluation of ILO

A total of 131 respondents completed and returned the questionnaire to us, among which 122 matched questionnaires were found for the overall 15 items. With regard to the analysis of breaking down of items, the degrees of freedom varied slightly between individual items

as respondents were allowed to skip questions. As shown in Table 2, positive changes were found in both civic and intellectual/cognitive development, however only the latter category produced a significant increase with $t(121) = -2.01, p = .047$. A further analysis of individual items (see Table 3) reveals a positive trend in 12 items out of 15. Among the 12 items, five learning outcomes increased significantly at .05 significance level, i.e. application of knowledge (item 1, $p = .012$; item 7, $p = .01$), problem-solving skills (item 5, $p = .03$; item 10, $p = .01$; item 11, $p = .04$). However, one item (item 9, $p = .03$) in “civic development” produced significant decrease in pre- and post-test, while other items within the same category indicated a moderate positive trend.

Evaluation of PYD Qualities

Only students who completed both the pretest and posttest ($N = 35$) were included in the analysis. As Table 4 demonstrates, service implementers reported statistically significant improvements for all PYD qualities at .01 significant level between pre- and post-test, indicating a great impact of SL participation on those students. The three most significant changes were found in social competence (pretest: mean = 2.16, posttest: mean = 5.04), cognitive competence (pretest: mean = 2.39, posttest: mean = 4.76), and beliefs and values of service leadership (pretest: mean = 2.04, posttest: mean = 4.84).

Qualitative Evaluation of Reflective Journals

The experiences of 39 students were all characterized by distinct positive transformation with overall 381 codes emerging from the raw data. As stated above, the original codes of types of transformation were then further categorized into several broader levels, i.e. societal level, interpersonal level and intrapersonal level, with details shown in Table 5. The five most frequently recognized benefits are “applied knowledge, theory or expertise into practice” (82.1%, cognitive competence), “enhanced problem-solving skills/learned to make better or immediate decisions/learned to manage crisis” (53.8%, cognitive competence), “enhanced interpersonal skills” (41.0%, general interpersonal competence), “enhanced sense of contribution to society” (35.9%, social responsibility and affairs), and “learned teamwork/built team spirit/enhanced collaborative capability” (33.3%, general interpersonal competence).

In most cases for “applied knowledge, theory or expertise into practice”, students brought with them the knowledge and theories gained from the two SL courses as a toolkit to deal with real-world situations. For example, Student A’s journal captures how theories acquired in class shaped his rationale for designing SL activities:

The idea of the Mathematic Week is mainly based on the theories of Positive Youth Development (Damon 2004) and game-based learning (Lange et al. 2010). The former one is to suggest education focus on each learners’ strength while the latter one is to encourage learning through games and interesting tasks. We aimed to make the Mathematics Week a combination of learning and gaming. Moreover, Karsenty et al. (2007) has suggested that interesting task and informal approach can effectively increase the learning intention in Mathematics of the relatively low-achieving

Table 4 Differences in PYD qualities before and after SL course using paired samples t-tests

	Pre-test	Post-test	Paired-sample t-test	
	Mean (SD)	Mean (SD)	Mean Difference	t-value
Social competence	2.16 (.47)	5.04 (.48)	-2.87	-21.04**
Emotional competence	2.55 (.70)	4.76 (.86)	-2.21	-12.15**
Cognitive competence	2.39 (.52)	4.76 (.72)	-2.36	-16.63**
Behavioral competence	2.51 (.58)	4.69 (.88)	-2.17	-11.70**
Moral competence	2.27 (.62)	4.66 (.75)	-2.39	-11.80**
Self-determination	2.44 (.57)	4.45 (.84)	-2.01	-11.95**
Clear and positive identity	2.79 (.64)	4.13 (.80)	-1.34	-7.12**
Belief in the future	2.20 (.52)	4.78 (.82)	-2.58	-14.14**
Life satisfaction	3.00 (.68)	3.89 (.10)	-.89	-3.41**
Spirituality	2.56 (.57)	4.41 (.68)	-1.86	-9.90**
Resilience	2.42 (.46)	4.57 (.91)	-2.15	-10.71**
Self-leadership	2.42 (.46)	4.51 (.82)	-2.09	-12.09**
Caring disposition	2.16 (.41)	4.81 (.80)	-2.66	-15.74**
Character strength	2.41 (.40)	4.57 (.78)	-2.16	-12.48**
The beliefs and values of service leadership	2.04 (.10)	4.84 (.13)	-2.80	-16.16**

** $p < .01$

students. This can avoid their resistance on learning at the aspect with no confidence while the conventional learning ways cannot resolve.

Student A's words, along with many other students' descriptions, consistently show that the knowledge and theories gained in SL classes provided a sufficient knowledge base for students to effectively function during service participation. With regard to the second popular subcategory, the enhancement of problem-solving skills and decision-making capability, it was in many cases triggered by the dissonance incongruent with students' previous assumptions or plans. Salient in these problem-solving processes is that students were forced to reevaluate the context, cognitively process the circumstances and function accordingly. Student B gave an example of her development in her grapple with challenges:

Table 5 Categorization of perceived benefits

Area of competence	Subcategory	Benefits	Students	Total
Societal level	Social responsibility and affairs	Increased awareness of citizen's responsibility	3, 4, 8, 12, 13, 15, 17, 19, 23	9
		Enhanced sense of contribution to society	3, 8, 11, 13, 15, 16, 17, 22, 24, 26, 27, 28, 35, 37	14
Interpersonal level	General interpersonal competence	Increased awareness of social issues	5, 6, 11, 13, 14, 30, 37	7
		Enhanced interpersonal skills	1, 7, 8, 9, 10, 11, 13, 20, 21, 22, 23, 24, 27, 32, 33, 37	16
		Enhanced instructor-student relationship and understanding/Strengthen bond with student/Established connections with students	1, 2, 4, 8, 9, 14, 20, 26, 30, 36, 37	11
		Learned teamwork/Built team spirit/Enhanced collaborative capability	4, 5, 6, 10, 14, 20, 24, 26, 28, 30, 32, 37, 38	13
		Better understanding of others	1, 2, 8, 15, 22, 23	6
Specific interpersonal competence		Learned to trust, respect and accept others	1, 18, 33, 38	4
		Leadership	1, 2, 6, 20, 25, 31, 35, 36	8
		Learned how to treat people and deal with issues	2, 5, 19, 27, 34	5
		Enhanced empathy	2, 4, 6, 8, 13, 22, 26, 27, 29, 34, 38, 39	12
		Learned to take care of others	2, 26, 37	3
		Better a(n) good/active listener	2, 8, 16, 31, 34, 38	6
		Learned how to encourage people	3, 13, 27, 29	4
		Used one's own knowledge and expertise to help or teach others	3	1
		Learned to love and care for others/Developed a sense of care/developed sense of compassion	4, 7, 9, 15, 16, 18, 22, 23, 29, 39	10
		Better awareness of other's needs	5, 8, 15, 25, 31	5
		Learned to respect and appreciate others	5, 10, 14, 16, 18, 23, 28, 32	8
		Enhanced communicative skills	13, 14, 24, 27, 28, 29	6
Developed open-mindedness	15, 26, 28	3		

Table 5 (continued)

Area of competence	Subcategory	Benefits	Students	Total
Intrapersonal level	Behavioral competence	Enhanced mutual support	16	1
		Learned to handle conflicts	21, 24	2
		Learned to express oneself	25, 26	2
		Learned to be considerate	31	1
		Learned to accept other's opinions	38	1
		Learned to take initiative/be proactive	4, 38	2
		Became more attentive	8	1
		Strengthened positive behaviors	13	1
		Promoted public speech/presentation skills	35	1
		Applied knowledge/theory/expertise into practice	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 33, 35, 36, 39	32
Cognitive competence	Enhanced problem-solving skills	Learned to make better/quick/immediate decision	1, 2, 4, 5, 7, 8, 11, 13, 15, 17, 22, 23, 24, 25, 26, 28, 31, 32, 33, 34, 36	21
		Learned to manage crisis		
		Flexibility/Learned to handle changes/Adaptability to changes	4, 6, 15, 17, 18, 19, 30, 32, 37	9
		Enhanced analytical skills	3, 4	2
		Learned to plan and be organized	30	1
		Enhanced ability in handling emotions (e.g. disappointment, anger)	2, 10, 11, 17, 37, 39	6
		Developed good temper (e.g. patience)	8, 13, 16, 19, 33	5
		Eliminated stereotypes and bias	2, 11, 13, 15, 16, 19, 28, 38	8
		Cultivated a sense of responsibility	2, 6, 21, 26, 35	5
		Enhanced sense of equity	5	1
Enhanced integrity	6	1		

Table 5 (continued)

Area of competence	Subcategory	Benefits	Students	Total
Beliefs in the future		More willing to help others	9, 14, 23, 25, 38	5
		Provoked thinking for the future	2, 17	2
Positive self-image		Prepared for the future career	3, 4, 6, 13, 23, 25, 28, 33	8
		Enhanced self-understanding	2, 4, 6, 10, 11, 13, 15, 16, 23, 30, 32, 34	12
		Identified one's strengths	11, 12, 15, 17, 18, 26, 33, 37	8
Resilience		Enhanced self-confidence	25, 26, 35	3
		Be more persistent when facing adversity/resilience	1, 2, 20, 26, 35, 38, 39	7
Spirituality		Learned to be grateful	5, 24	2
		Enhanced self-reflection	3, 6, 7, 12, 14, 20, 34	7
General gains		Improved understanding of service learning/service leadership	1, 3, 21, 24, 25, 29	6
		Improved understanding of theory	3, 26	2
		Mutual growth	25, 26, 29	3

During our lunchtime activities at the XXX College, we had to get contact with students from various backgrounds. Majority of them were really active, naughty, like messing around or even causing destruction. My teammates and I felt really frustrated and depressed by facing them at the first time...The naughty students were really making us pissed off...I tried to cool down myself and attempted to treat and communicate with them honestly, in order to develop a positive relationship with the students...At the beginning we had tried our best to think of different interesting and meaningful games to the students, however, they didn't actually enjoy, we felt really upset and confused...I tried to communicate and discuss with my group mates, in order to identify the characteristics of the students and think of some new games for the students to play. Eventually, we found the characteristics of the students and designed some new games that match their characteristics. They started to participate more actively, as well as we are having greater satisfaction and enjoyment while serving them.

Her experiences, in fact, echo many other social implementers in that problem solving leads to notable development in different dimensions. According to the reflective data, the aforementioned problem-solving progress was very often accompanied by an enhancement of interpersonal skills (41.2%), team spirit and collaborative capability (33.3%), emotional competence (28.2%, e.g. enhanced ability in handling anger and disappointment), leadership (20.5%), and resilience (17.9%).

On a societal level, social implementers demonstrated increased awareness of social inequality in Hong Kong, as these social implementers were working with students from low social milieu. Embedded in the process was their enhanced sense of commitment to social responsibility as compassionate citizens and serving resource-deprived social groups ("enhanced sense of contribution to society", 35.9%). For example:

Before studying this course, the ways that I learnt about the underprivileged in society are only from the news or books. I believed I understood the needs of the underprivileged children and adolescents well until I started planning and providing service in this course. Planning and providing service have provided me with chances to understand the actual needs of the underprivileged children and adolescents and discover their potentials (Student C).

Along with the enhanced social responsibility, these service implementers also stated growth in the related dimensions of "enhanced empathy (30.8%), "learned to love and care for others/developed sense of compassion" (25.6%), and "eliminated stereotypes and bias" (20.5%).

Discussion and Conclusion

The purpose of the present study is to explore the transformation of service implementers by drawing on multiple evaluative strategies. The triangulated data demonstrate a generally consistent picture that service implementers had positive views towards the program, in which they reported great impact of SL participation and showed positive changes at intrapersonal, interpersonal and societal levels. Consistent with many

previous studies (e.g. Brown and Bright 2017; Celio et al. 2011; Ma et al. 2019; Peters et al. 2006), it also provides empirical evidence that SL promotes meaningful, positive changes to students as it builds community engagements, fosters a sense of empathy, respect and caring for others, and enhances leadership, social skills, teamwork, and cognitive and behavioral capabilities, etc.

Among the attributes, the two most prominent perceived changes emerging from both ILO evaluation and qualitative evaluation of student journals lie in the field of intellectual and cognitive competence, i.e. application of knowledge and problem-solving skills. Students were more able to connect ideas, knowledge, and expertise to practices and transfer them into service participation. According to the data, problems occurred in service participation granted student real-world challenges which seldom could be otherwise experienced in university. In a sense, it facilitated deep learning in that students could make sense of the complex situations and cultivate their cognitive competence. These findings are consistent with the existing evaluation studies in different contexts (e.g. Guo et al. 2016; Jones et al. 2012; Kiely 2004, 2005) which demonstrate that problem-solving process in SL participation integrates higher-order thinking skills such as processing, connecting and reflecting, and contributes to deeper learning with far-reaching effects on students. Furthermore, it is worth noting that the attributes assessed in ILO questionnaire are not in isolation with PYD attributes; instead, they are intertwined. For instance, the caring disposition (e.g. item 2) under the category of “civic development”, and the problem-solving skills (e.g. item 11) under “intellectual and cognitive development” are well reflected in the PYD model as well.

Interestingly, civic development did not produce statistical significance in the ILO evaluation. There are several possible explanations for the result. It can be a result of “regression to the mean” – initial high score may drop because it is already too high. Second, one-third (two out of six) items under the category of “civic development” are reversely coded questions, which may lead to respondents’ inattention or confusion in scoring. Third, the sample size was relatively small. Nevertheless, the items generally showed positive changes. Besides, civic development stood out as a critical domain from the PYD self-report questionnaire and reflective journals. The pre- and posttest for PYD qualities showed significant positive changes in beliefs and values of service leadership, caring disposition and character strength, most items of which exhibit abilities to love and care for others and commitment to helping and serving people. Students’ journals resonate with this finding that students, after working with underprivileged social groups, increased awareness of citizen’s responsibility and enhanced sense of contribution to society, together with enhanced interpersonal competence such as empathy and compassion, and respect and love for others. Thus, it can be seen that SL, in general, promotes holistic development and adds additional breadth for students. As Kiely (2005) argues, it offers *unique* learning opportunity for students to develop and transform, more than passively participating in traditional classrooms.

Second, this present study contributes to a deep understanding of reciprocal and complementary relationship between the PYD and SL. Besides the interconnected relationship between ILO and PYD attributes discussed above, what is evident in the pre- and posttest result of PYD evaluation is that all 15 PYD attributes showed significant enhancement. The result is complemented by the students’ journals which indicate this SL program created supportive environment and meaningful engagement for them to develop emotionally, socially, behaviorally and intellectually. It echoes existing literature

(e.g. Chung and McBride 2015; Golombek 2006; McKay-Jackson and Johnson 2015) that an effective SL program thus can be utilized as a productive pedagogy for students to achieve positive development. In addition, the data of qualitative evaluation also indicates that PYD leads to sustainable positive effects towards SL. For example, after service participation, many students perceived civic contribution of higher value and developed commitment to continue serving community and society. Furthermore, the enhanced domains such as confidence, caring disposition, competence demonstrated in findings can in turn help generate “contribution” to family, community and society (Whitehead and Kitzrow 2010). Overall, this study provides empirical support for proving that SL is a solid way to improve PYD and vice versa. As there are few studies in this area, this is an interesting addition to the literature.

This study also represents an attempt of employing mixed method that includes both qualitative and quantitative evaluation of the effectiveness of SL participation. Despite the capability of quantitative evaluation in establishing causality and working with larger sized sample, qualitative approach allows more freedom in expression and enables the exploration of experiences with great depth (Creswell 2007). In particular, with regard to reflective writing employed in the present study, it is a valuable and informative data source to elicit views and suggestions for evaluating a program (Grinnell et al. 2015; Shek et al. 2008b). This triangulation of design shows general consistency between quantitative and qualitative results, enhancing validity and reducing bias in building the arguments. Furthermore, the quantitative and qualitative methods complement each other, as the former indicates a more straightforward result of the great impact SL places on students, while the latter provides detailed data of how SL wields its influence. In this sense, this study demonstrates the value of a mixed-method approach in evaluating the effectiveness of a program.

Despite the aforementioned contributions, this study has several limitations. First, due to the fact that the data on the PYD questionnaire were collected after completion of the subject, only 35 students completed it and included in the quantitative analysis. It would have added more validity to the findings if the sample size was larger. Nevertheless, the findings are robust for the PYD and leadership measures. Second, in journal writing students’ expressions might have been impeded by their English proficiency and writing skills. Moreover, we only get access to a part of student journals, as it is a routine procedure for the course lecturers to keep the journals rated B+ and above only. It would have elicited richer data as the rest journals may entail great research value as well. Despite the limitations, the present study provides strong empirical support to the positive impact of SL participation in this corporate-community-university collaborative project and its effectiveness in promoting integrated youth development for Hong Kong students.

Funding The work is supported by The Hong Kong Polytechnic University and The Wharf (Holdings) Limited.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (Human Subjects Ethics Subcommittee + HSEARS20180907007) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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