Serving with These-abilities: An Inclusive Service-Learning Case Study From Singapore

Wilson CHAN, Dennis Poh Wah LEE, Yi Shien SIM, Nurliyana OMAR, Rachel LOH

Abstract
We describe a 6-month long inclusive service-learning program designed for differently abled youth to collaborate, design and implement projects that enhance disability inclusion in Singapore. As the first local example of inclusive service-learning, both service and learning objectives have largely been met, with some participants' projects having national level impact. Our findings show that consistent communication of learning aims, and adequacy of structured reflection points are important factors to consider for similar efforts in the future. Description of our methods are detailed for future reference.

Keywords: Inclusive service-learning, Social innovation, disability inclusion, asset-based community development

Brimming with passions and gifts, youth-with-disabilities have much to offer beyond the usual perspective as beneficiaries requiring aid. The *Youth Development Program* (abbreviated as the YDP here on) organised by SPD, a disability services and support charity based in Singapore, seeks to reverse this deficiency paradigm by equipping youth with disabilities with social innovation skills and empowering them to catalyse disability inclusion in Singapore. As a program designed for youth with disabilities to serve their own communities whilst learning and reflecting through the process, it represents both service-learning (Jacoby, 2015; abbreviated SL hereon) and asset-based community development (Kretzmann and McKnight, 1993; referred to as ABCD hereafter) in action.

SL Trends in Singapore
The practice of service-learning as an educational tool has matured globally since its nascence in the mid 1980s (Jacoby, 2015). In Singapore, it first manifested in the late 1990s as the *Community Involvement Programme* under the national education curriculum that spanned primary to tertiary levels (Ministry of Education, Singapore, 1997). It was shortly rebirthed as *Service-Learning* in 2001, with greater emphasis on preparation, deeper reflection and service that met real needs, to improve on its predecessor (Chua, 2010). This morphed into the current

Values in Action (VIA) pillar of the character and citizenship education curriculum, where the intent is to create applied learning experiences that develop students' sense of social responsibility development, as they "contribute their values, knowledge and skills meaningfully to the community" (MOE, 2018). Regardless of SL's evolution in Singapore, it is widely practiced across schools and community youth initiatives, both on local and international fronts at varying scales (Lee, 2010).

Dearth of Inclusive SL in Singapore

Yet, despite the ubiquity of SL and its documented benefits for participants with disabilities (see Brill,1994; McCarty and Hazelkorn, 2001; Frey, 2003), SL efforts in Singapore have remained almost exclusively *segregated*, in which able-bodied participants provide service to communities with special needs. In a meta analysis of SL trends between 1990 and 2007 within primary literature, Dymond et al. (2011) found a mean of 1.89 articles on inclusive SL being published annually in that 18 year span. Given this paucity, it is not surprising that none of the 34 cases reviewed originate from Singapore. This dearth points to two possibilities; either that a local inclusive SL effort was initiated but not published, or more likely that such an approach has never been attempted in Singapore. Our efforts to trawl primary literature and beyond have yielded no returns, thus supporting the latter. As such, the YDP likely marks the founding of Singapore's first *inclusive* SL program, and notably one initiated by the people sector. In using the term *inclusive SL*, we follow the definition described by Dymond et al. (2011), in which youth with disabilities participated alongside peers without disabilities, performing acts of service and learning from the process, rather than being the beneficiaries of service.

This paper shares insights gleaned from a 6-month experimental inclusive service-learning program that we conducted between September 2018 to February 2019, building on a previous version that comprised only participants with disabilities. As the first case of inclusive SL in Singapore, we have emphasised the description of our methods, detailing especially the various adaptations and design elements to make the program more accessible for all participants. In addition, by dissecting our points of failures and successes, we aim to isolate causal factors that would encourage progress. In all, we hope that this case will form a blueprint for improved iterations, in future.

Methods

Program Overview

Spanning a duration of six months, the program comprised six phases from recruitment to closure (Fig. 1). Each core phase spanning Phases 2 to 5 corresponds to Orr's Head, Heart and Hand's model of transformational learning (Orr, 1992), albeit in a disability inclusion context.

Figure 1 The six phases of the YDP. Icons from http://flaticon.com.

Over the six phases, we engaged participants over a total of 14 workshop sessions spanning 52 hours under the formal program structure. This excludes the extra-curricular meetings as well as conversations over a cohort WhatsApp group and other communication platforms that the SPD team, Skillseed trainers and mentors had with participants throughout the program. Similar to other SL programs, we started the YDP with an introductory opening and bookended it with a finale that celebrated participants' progress at the close. Given the length of commitment required for the program, we scheduled these sessions or Saturday mornings where most, if not all, participants would be available. We share the salient features of each phase below, including the preparatory work, and also describe the additional adaptations to augment the program's inclusiveness for participants of all abilities.

Trainers' Pre-Program Preparation

This inclusive edition of the YDP represents the first occasion that participants with ASD would comprise part of the participant cohort. To better prepare for delivering the equipping sessions, the Skillseed team undertook just-in-time training on creating inclusive learning environments for persons with ASD, which SPD conducted. This primed the Skillseed trainers and facilitators to better understand the needs of youth with ASD, viz. learning, and we further incorporated the guidelines into the design of the pedagogy and content delivery (see *Enhancing Content Accessibility* below).

Building Ecosystem Support

In addition to the guidance that would be given by the SPD team and Skillseed Trainers, the team recognised that the provision of socio-emotional support and broader perspectives would be important complements to the learning process. SPD thus recruited six mentors from a variety of backgrounds to journey alongside participant teams (Table 1) from start to end. The SPD team further leveraged social capital built within the previous YDP cohort by inviting an alumnus to return as Mentor. Once participants formed teams and had determined their project scope, we matched mentors to them based on areas of interest and professional experiences.

Table 1 YDP Mentor composition and background.

No.	Name	Gender	Background
1	C. Lee	Female	Senior Executive, Office of Service-Learning, Singapore University of Social Sciences
2	G. Chia	Male	Senior Manager, Children Services, SPD
3	K. C. Goh	Male	Senior Social Worker, Employment Support Programme, SPD
4	J. Ng	Male	Deputy Director, SUN-DAC[a]
5	R. Neu	Male	Founder and CEO, Social Collider[b]
6	S. Selvakumar	Female	Lawyer and Legislative Assistant

[a] SUN-DAC is a day activity centre for persons with disabilities. They offer training programs, recreational activities, physiotherapy, caregiver training and counselling services.
[b] Social Collider is a collaborative community and co-working space that supports projects and organisations focusing on the United Nations Social Development Goals.

Phase 1: Participant Recruitment

SPD and Skillseed recruited participants through their respective networks, with SPD particularly focusing on reaching youth with disabilities that it had previously served through its youth services or funded viz. scholarships. SPD used a combination of in-person recruitment at its scholarship selection interviews, together with social media and an email campaign. To encourage representation of participants with visual disabilities in the program, the SPD team also created a text-only version of the program mailer that could be read by assistive technology. Skillseed tapped into its nexus of community organizations, partner institutes of higher learning, and her alumni network to reach out to other youth participants. Both Skillseed and SPD made conscious effort to emphasise the inclusive nature of the YDP from the onset, particularly when reaching out to able-bodied youth. In all our communications to able-bodied youth, we stressed

that we were seeking *Partners-in-Inclusion*, i.e. potential participants who were going to serve and learn alongside youth with disabilities as equals. The SPD team also interviewed potential participants who had indicated interest, prior to their induction into the program, to further ensure that participants with the right mindsets participated in the program.

Phase 2: Team Formation and Self Awareness

As the foundational phase that sets the context for the rest of YDP, the first workshop for Phase 2 was designed to help participants and program stakeholders get acquainted, uncover common values and interests, as well as discover their Myers Briggs Type Indicator personality types (MBTI; Myers, 1962) and inherent tendencies (Rubin, 2017) that would influence their group collaboration subsequently. We also used this first touchpoint to conduct a pre-program survey that served as a baseline for post-program comparison at the close (see *Impact Measurement* below). In the second workshop, we shared productivity strategies for personal effectiveness, approaches to augment collaboration, and started the team formation process, using written and verbal pitches. After the session, we circulated a spreadsheet describing the various project challenges, rough idea(s), early members and possible roles, to further encourage team formation.

To support participants during challenging times in the YDP, we developed a Program Compass that encouraged them to articulate their personal motivations, values and strengths, and to use these as visual reminders when needed. We made using the Compass optional to give participants a greater sense of agency, and foster true ownership, which are needed for the Compass to fulfil its purpose.

Phase 3: Initial Exploration of the Disability Landscape

In Phase 3, SPD immersed participants in a learning journey of the SPD Ability Centre's inclusion features. They also organised a World Cafe, where participants were split up into smaller groups and circulated around the room, discussing questions that explored the various challenges faced by different disability communities in Singapore. This helped all participants arrive at a more unified understanding of the local disability landscape, helping them to focus on or deepen their understanding of a cause for subsequent implementation. Both activities also served to build greater camaraderie amongst participants as the teaming process continued. At the close of Phase 3, we had consolidated participants' interest in the various causes and created groups using this and the complementarity of roles as primary factors. The diversity of abilities in each group arose naturally (see Results later) and we did not interfere with team composition, but provided space for participants to change teams up until the early parts of Phase 4.

Phase 4: Inclusion Innovation Training

Phase 4 focused on teaching participants the social innovation tools to address their identified inclusion challenges. Over five workshops, participants learnt an integrated framework comprising Design Thinking, the Social Business Model Canvas (SBMC), and the Logic Model (LM), as shown in Figure 2. We chose Design Thinking (DT) as the anchor framework to help participants empathise with, and design a solution around, their end users. The experiential nature of DT and the YDP meant that participants needed to engage end-user communities after/between each workshop to validate the ideas that they had generated during each workshop session. The Social Business Model Canvas (SBMC) adapts the traditional business plan for projects with a social mission, articulating and communicating its vital components, such as key stakeholders involved, a budget, social value proposition and more succinctly on a one page canvas. While DT gave participants a process to develop a solution around the end user, the SBMC helped them holistically consider the various facets of building and sustaining their project. We further integrated the SBMC with the Logic Model (LM), which provides a systematic, yet simple and visual way for participants to plan for and measure the outcomes and impact of their projects. Participants used the LM to breakdown the longer term social impact outcomes into shorter and medium term goals that they could operationalise, measure and work towards within the duration of the YDP.
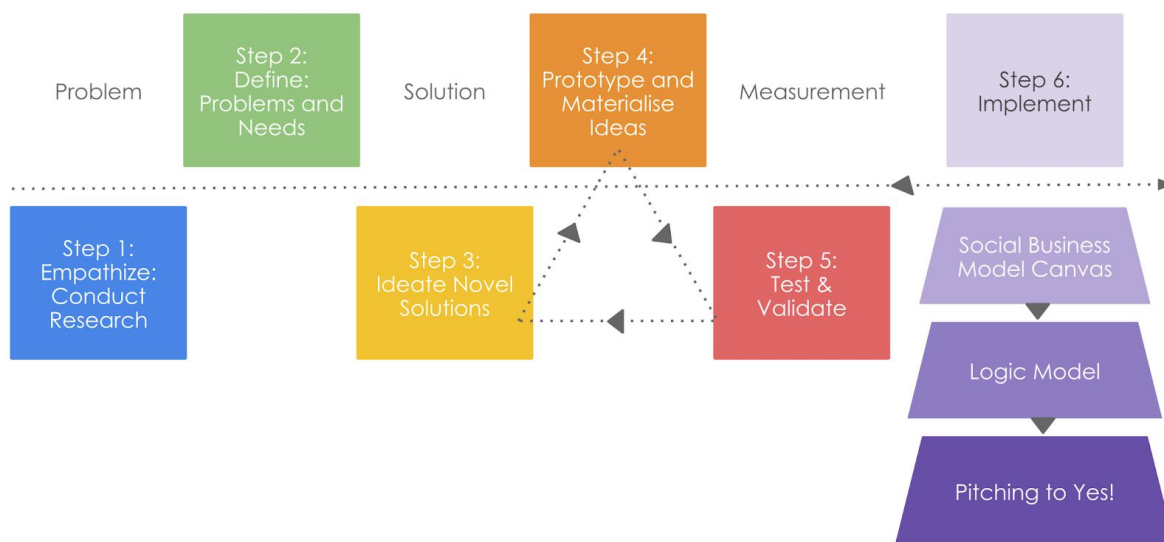
Figure 2 The six steps of the Design Thinking cycle integrated with the Social Business Model Canvas, the Logic Model and pitching in Phase 4.

In the final workshop of Phase 4, we guided participants through the process of developing and delivering an effective presentation to prepare for a pitch to a panel of stakeholders. Teams built on their work generated from the DT process, SBMC and LM, consolidating everything into a pitch deck that Skillseed trainers and mentors helped refine. To imbue realism for both participants and the panel, we modelled the decks after examples gleaned from startups based in Silicon Valley and New England. We further coached participants on the practice of delivering pitches and ensured that every team member was primed to present and contribute during Pitch Day, regardless of ability.

Phase 5: Execution

Phase 5 commenced with Pitch Day, where teams presented their ideas to a panel comprising social sector experts and a sponsor (Table 2), with the aim to receive seed funding of up to S$2,500 to develop their prototypes and implement their plans. All teams received funding of at least S$2000, while the winning team got an extra $500 as recognition. These were disbursed in advance to facilitate teams' progress. As teams executed their ideas over a span of four months, SPD, Skillseed and mentors provided support through in person meetings, communications over WhatsApp, and a series of four consultation clinics that we spread evenly through the period. For each clinic, teams determined the agenda based on their projects' progress, which they shared in advance with SPD, Trainers and mentors.

Table 2 Panel members of YDP's Pitch Day.

Name	Gender	Background
A.T. Goh	Male	Assistant Director, Youth Corps Singapore
Dr M. Lim	Female	Associate Professor, Singapore Institute of Technology
V. Ong	Female	Human Resource Director, Asia Pacific Breweries[a]

[a]Asia Pacific Breweries Foundation offers bond-free scholarships to persons with disabilities who are pursuing tertiary education, and the scholarships are managed by SPD.

Phase 6: Closure

We capped the YDP in early March 2019, six months after the program commenced. To commemorate the program closure, we held a 3-hour Stakeholder Showcase at an accessible function hall of the National Library Board, inviting panelists, staff and all program stakeholders to celebrate participants' accomplishments in the YDP. Participant teams took turns to deliberate their disability inclusion journey, sharing highlights and challenges that they had personally and

collectively encountered. The finale involved a group circle where everyone grasped parts of large ball of yarn as each reflected on the way forward for disability inclusion in Singapore. The yarn web that arose symbolised our unity and interconnectedness amidst our different abilities, marking the official close of YDP but also the start of new beginnings in Singapore's disability inclusion landscape.

Enhancing Physical Accessibility

Understanding participants accessibility needs were important for us in designing and delivering the training curriculum, as well as making the training environment even more inclusive. With the exception of one class that we conducted at a co-working space offered by a program mentor, we conducted all other sessions in one of the training rooms at *SPD's Ability Centre*, which has accessibility features that caters to all disability needs. This, and participants' with disabilities familiarity with the Centre helped to lower barriers from the start. To further promote inclusion and bonding, we arranged for participants to sit in clusters of five, allocating front seats for participants with visual disabilities and wheelchair users. We also designated the back of the training rooms and other meeting rooms as quiet zones for participants who needed to take sensory breaks.

Enhancing Content Accessibility

To enhance the accessibility of the content to participants with visual challenges, we ensured that the training decks were designed with minimal words, used simple language and presented icons with words. We also adopted a *sans serif* font, *Nunito*, minimally at size 20 (where possible) for greater visual clarity. We also included transcripts and sent these to participants who needed them, at least one day prior to the training sessions. We combined these with printed A3 copies of the training decks for participants who needed to use assistive technology. During the delivery of the training material, we also made a conscious effort to narrate images or video, when needed for participants with visual disabilities.

To guide participants through the program frameworks, we developed canvases with simple language and icons that deconstructed the process into accessible steps for participants to follow. We combined the above with a description of the session's desired training outcomes and a schedule to help everyone grasp the content of each training session. Considering the different abilities in the cohort, we also made every workshop's cadence dynamic, alternating reflective and participatory work, where possible. This was to provide introverts and participants with ASD a sensory respite from interactions, while keeping the overall energy high for a youth audience.

Impact Measurement

We administered pre and post-surveys at both session and program levels. While the session level surveys tracked participants learning of Design Thinking at the lower dimensions (*conceptual knowledge*) and rungs of Bloom's Taxonomy (between *remembering* and *understanding*; Anderson et al., 2001), they were mainly operational and used primarily to refine the pedagogy and adaptations needed for subsequent training sessions. Since participants needed to create disability-inclusion initiatives as part of program outputs, the teams' progress on their projects would provide a better evidence of their learning at the higher orders, i.e. between *Applying* and *Learning*. Consequently, we will not discuss the session level results in this paper.

We focused on measuring participants' knowledge of and perceptions towards disability inclusion in Singapore for the program level survey (Table 3). We gathered participants' responses at the start of YDP in Phase 2, and again at the Stakeholder Showcase during the close of YDP. We gave participants a scale from 1 to 4 to rate themselves on (Table 4), in place of an agree - disagree continuum. This was to minimize confirmation bias, virtue signalling, distorted self perception, and clustering of neutral answers. We used this scale consistently throughout the YDP, for all surveys. In the survey forms, we also avoided the use of headings that indicated the domains and outcomes the question was attempting to assess, to enhance the robustness of the assessment.

Table 3 Questions in the YDP program level survey that focused on participants' knowledge of, and perceptions towards disability inclusion in Singapore.

Category	Question No.	Survey Question
YDP as a platform in providing opportunities for interactions with persons with disabilities	1	I have had many opportunities to interact with community members in the disability sector
Knowledge about disability inclusion	1	I can explain to others what some challenges persons with disabilities might encounter, especially in a group project setting
	2	I can identify areas where I can contribute to a make a group project with differently abled persons more inclusive

Confidence in working with persons with disabilities	1	I am equipped to work with differently abled persons in a group setting
	2	I feel confident in working with differently abled persons in a group project setting
Confidence about personal contribution to disability inclusion in Singapore	1	My circumstances do not hold me back from actualising my potential
	2	I feel confident in my capability to catalyse or create social change in Singapore
	3	Through my actions, I believe that I can make a difference to inclusion issues in Singapore
Perception towards disability inclusion at large	1	I believe that Singapore's public, private and civil society sectors can benefit from the contributions of persons with disabilities

Table 4 Participants' rating scale.

Number	Response	Score
1	Does not describe me at all	1
2	Does not describe me well	2
3	Describes me	3
4	Describes me very well	4

In addition, we also sought participants' evaluation of the program's design, viz. the 10 best practices for service-learning (Honnet and Poulsen, 1989) in the post program survey. The questions will be reflected in the results section, so we will not repeat them here.

We shared the pre and post program surveys as a bit-link (i.e. shortened URL) via the participant WhatsApp group chat, with a 48-hour response window from the time of circulation. Where response rates were low, we would remind participants at the 24 hour mark. This approach helped lower the barriers for participants who experienced different disability challenges, and maximised the likelihood of participants completing the surveys. For participants that did not respond after the 48 hour window, we did not pursue responses further.

Statistical Analysis

We used the Wilcoxon Signed Rank Test (two-tailed, P , 0.05) to assess changes in participants' responses towards disability-inclusion related questions at the start and close of the YDP. Due to the addition of new program participants after the start of the program, and despite our best efforts to garner participant feedback immediately after the Stakeholder Showcase, not every participant responded. Consequently, we only had 11 paired responses available for comparison at the cohort level. Of these, five responses were from participants with disabilities and six from able bodied participants. We divided the cohort into participants with and without disabilities, and used the same test to detect pre and post differences in responses. We analysed the data using Prism 8 for Macintosh, by Graph Pad.

Results

Overview

The YDP began with 19 participants at the program opening, consolidated to 17 youth by the second session, with one participant with disability leaving only at the implementation stage of the program (Phase 5) due to an university-related exchange placement to Germany; we have therefore included him in the figures reported here since he had participated in more than half of the program experience. The cohort thus comprised 10 youth with disabilities and seven able bodied youth. This number remained steady throughout the program. Table 5 summarizes the gender composition, age group and education level of the cohort.

Table 5 Summary of the gender composition, age group and education level of the YDP 2018 cohort. Genders are presented in parentheses under the age columns.

Participant Category	Nos. Female	Nos. Male	Minimum age	Maximum age	Minimum education level	Highest education level
Participants with disability	4	6	18 (m)	29 (f)	Polytechnic Diploma	Undergraduate Degree
Participants without disability	5	2	19 (f)	28 (f)	Undergraduate Degree	Undergraduate Degree

Disability Types

Of the youth with disabilities, they represented six disability community types as shown in Table 4. Participants with physical disabilities presented mild to moderate disabilities, while those with Autism Spectrum Disorder (ASD) were high functioning and had either attained an

undergraduate degree, or was currently reading for one. All participants with disabilities were tertiary educated, from either a local polytechnic or university.

Table 6 Disability types, gender and education level of participants with disability.

No.	Disability*	Disability Codes following Dymond et al. (2011)	Nos. Participants	Nos. Females	Nos. Males	Minimum Education Level	Highest Education Level
1	Hearing Impairment	HI	2	2	0	Currently reading for / have obtained an Undergraduate Degree	
2	Speech Impairment	SLI	0	2	1		
3	Visual Impairment	PHY	2	0	2	Polytechnic diploma	Currently reading for an Undergraduate Degree
4	Physical Disability (Mobility Challenges)	PHY	3	3	1		
5	Autism Spectrum Disorder (ASD)	ADD	Physical Disability (including Mobility Challenges)	0	2		Currently reading for / have obtained an Undergraduate Degree
6	Dyslexia	LD	1	1	0		Undergraduate Degree

Attendance Trends

Participant attendance fluctuated throughout the YDP sessions, between 59% to 94% (Fig. 3, below). The primary reasons for participants' absence were school / work commitments, ill health, or school related travel. This varied across both youth with and without disabilities, with no discernible difference between both groups.
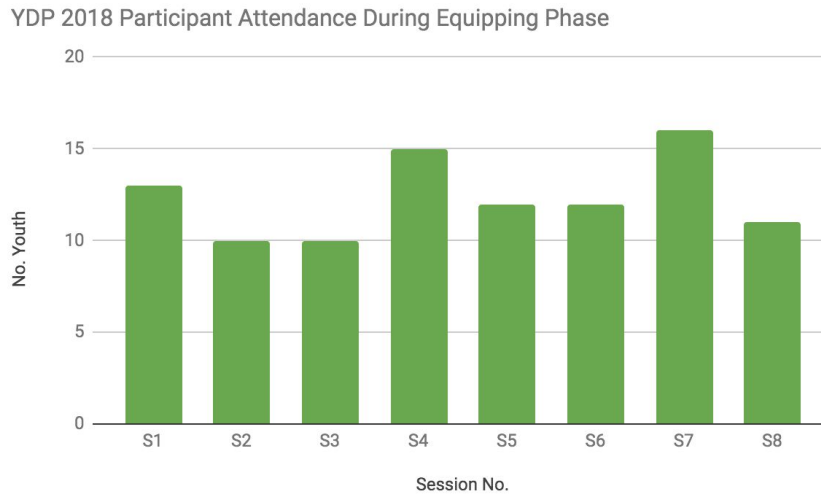
Figure 3 Participant attendance across Phases 2 to 4.

Team Composition and Outputs

The YDP 2018 cohort initially developed 5 projects as summarized in Table 5, below. These ranged from awareness creation projects, to soft-skills training that encouraged workplace disability-inclusion, and the re-design of public spaces to provide access to learning resources for children with ASD. In developing and refining their disability-inclusion challenge, each team either articulated it from the perspective of the member with disability, consulted other participants with disabilities, or sought inputs from persons with disabilities by tapping into the network of stakeholders.

Of these, three teams (*Aurora*, *JECS* and *The Flying Elephant*) had completed at least one session of engagement and validation with their end user audience. *The Flying Elephant* in particular has had the strong support of the National Library Board, which will be implementing their plans for an (ASD) inclusive library, realising their vision in a prototype space at the upcoming Punggol Regional Library and as a travelling exhibition. As of the project Showcase, Aurora and The Inclusive Library will be continuing their projects up at least till August 2019. Two teams (*Plus de Murs* and *New Dimensions*) eventually combined projects, due to overlaps in project mission. Even though this team did not manage to validate their workshop with (corporate) end users, the workshop materials that they have developed will be used by the SPD team in their outreach efforts. Figs. 4 to 6 showcase of the teams' deliverables and progress.

Table 5 Team composition, project description and progress as of the Stakeholder Showcase at the YDP closure. Participant genders in parentheses.

Team Name (Determined by members)	Team Size (Nos. Participants)	Nos. Participants with disability	Disability Type	Nos. Participants without disability	Area of Interest	Project Description
Plus de Mur	3	1 (F)	PHY, HI	2 (F)	Lack of awareness/advocacy and lack of accessibility & opportunities for persons with disabilities (PWDs)	Disability Awareness Workshops that seek to promote better communication between differently-abled coworkers to build an inclusive workplace culture
New Dimensions	3	2 (M)	ADD	1 (M)	Greater awareness about the needs of persons with disabilities in general, and specifically persons with invisible disabilities such as ASD	
Aurora	3	1 (M)	PHY (Visual Impairment)	2 (1M; 1F)	General public's lack of understanding of people with disabilities	A card game that promotes disability awareness and inclusion one deck a time
JECS	4	4 (2M; 2F)	HI, SLI, LD, PHY (Visual Impairment)		Life after secondary/tertiary education for individuals with special education needs (especially ASD or MID)	Creating social well being and awareness workshops for polytechnic students with ASD
The Flying Elephant	4	2 (1M; 1F)	PHY	2 (F)	To empower PWDs to discover their abilities, values, and	The Inclusive Library: Giving every child equal

					confidence in our society. We hope for a society with greater inclusivity for PWDs, for them to receive equal access to learning resources and opportunities to fulfill their life's dreams and ambitions.	access to learning resources (especially for Children with ASD).

Figure 4 Aurora demonstrating how to play their card game at YDP's closing. Their card game sought to raise awareness of disabilities among primary school children.

Figure 5 JECS running an awareness workshop for students with ASD at Singapore Polytechnic SEN Centre.

Figure 6a-6b Flying Elephants setting up the exhibit space for The Inclusive Library at Woodlands Regional Library; the communication cards they prepared for young library patrons with ASD.

Program Level Survey of Participants' Response to Disability Inclusion

Cohort Perspective.
Of the nine survey questions that measured participants' responses, viz. aspects of disability inclusion (Figs. 7 to 15), only two returned statistically significant results (Figs. 7a and 8a, indicated by *). These related to questions about the YDP being a platform for interaction with persons with disabilities, as well as knowledge about the challenges that persons with disabilities face, in the context of group work. For these questions, the significant amplitude of change was driven primarily by responses from participants without disabilities, starting low on the scale (from "Does not describe me") and ending high (to "Describes me very well") .

Differences Between Responses from Participants with and without Disabilities.
In general, we observe that able bodied participants registered greater and more positive change across the different categories assessed, compared to participants with disabilities (Figs. 7c - 10c; 13c to 14c). Many of the able bodied participants started YDP lower on the scale, especially in the areas of interacting with persons with disabilities, disability inclusion knowledge, and collaborating with persons with disabilities in a project context.

For participants with disabilities, however, most of their responses were generally consistent between start and end, at the higher levels of the scale, between "describes me" and "describes me very well". Positive changes in this group of participants were found primarily in the areas of knowing how to enhance the inclusivity of group work (Fig. 10b) and their sense of being equipped to work with differently abled persons in a group setting (Fig. 11b), even though the results are not significant.
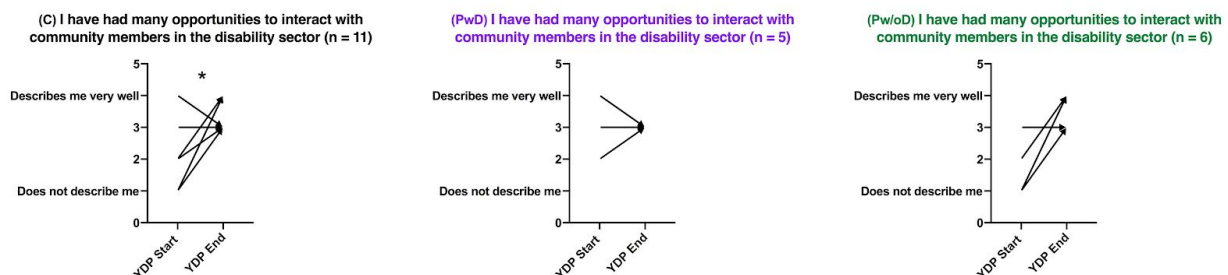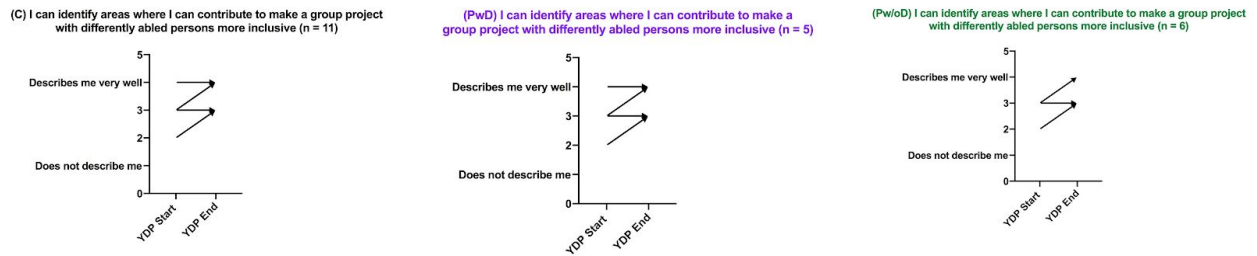

Figures 7a - 7c (left to right) Before and after graphs indicating participants' response to the question "I have had many opportunities to interact with community members in the disability
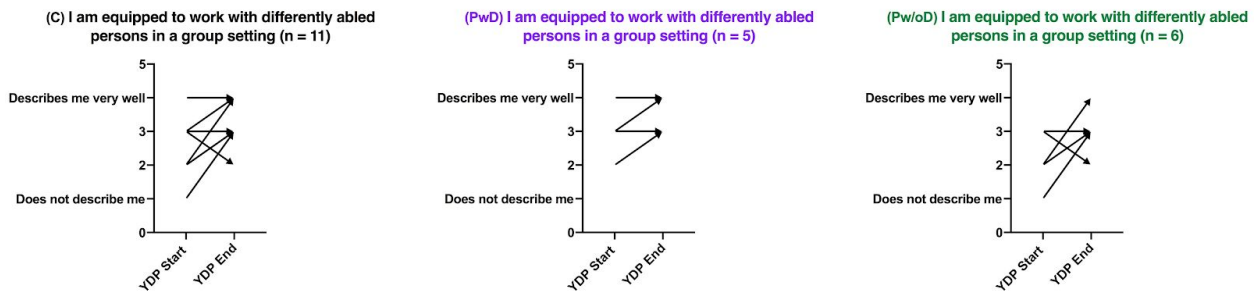
sector", categorised according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.
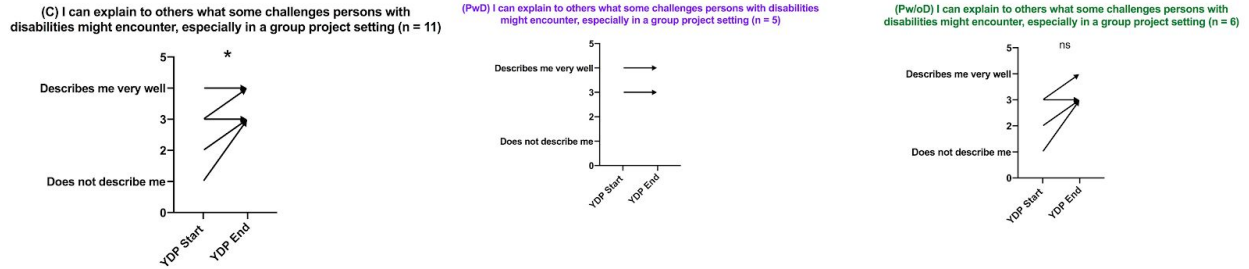
Figures 8a - 8c (left to right) Before and after graphs indicating participants' response to the question "I can explain to others what some challenges persons with disabilities might encounter, especially in a group setting", categorised according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.
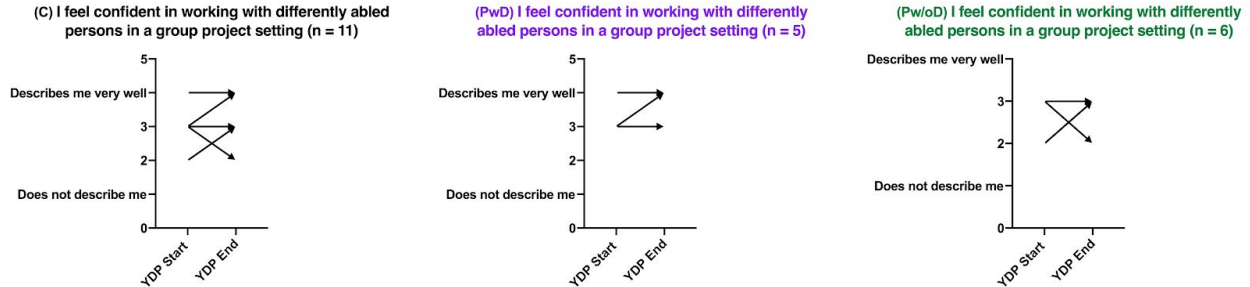

Figures 9a - 9c (left to right) Before and after graphs indicating participants' response to the question "I can identify areas where I can contribute to make a group project with differently abled persons more inclusive", categorised according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.
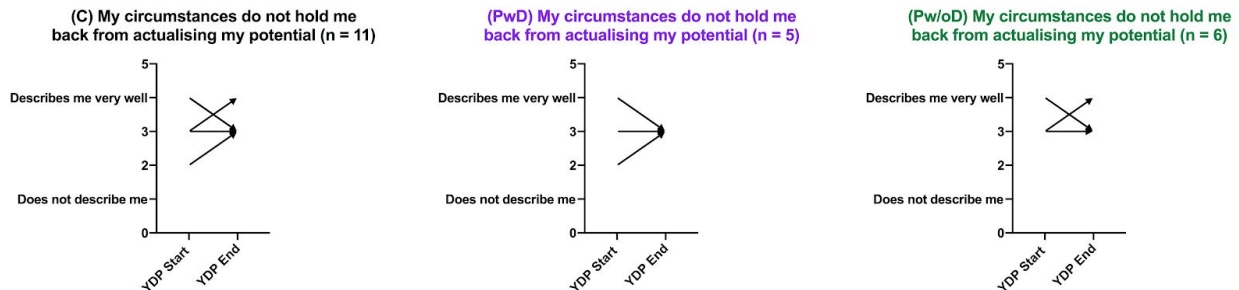

Figures 10a - 10c (left to right) Before and after graphs indicating participants' response to the question "I am equipped to work with differently abled persons in a group setting", categorised

according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.

Figures 11a - 11c (left to right) Before and after graphs indicating participants' response to the question "I feel confident in working with differently abled persons in a 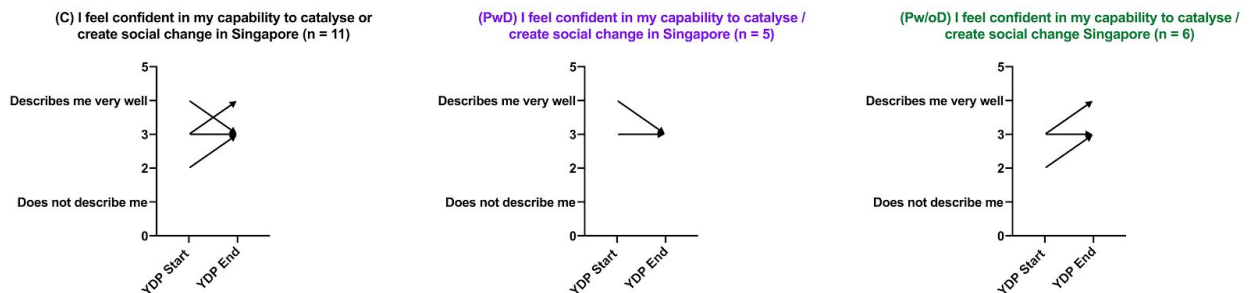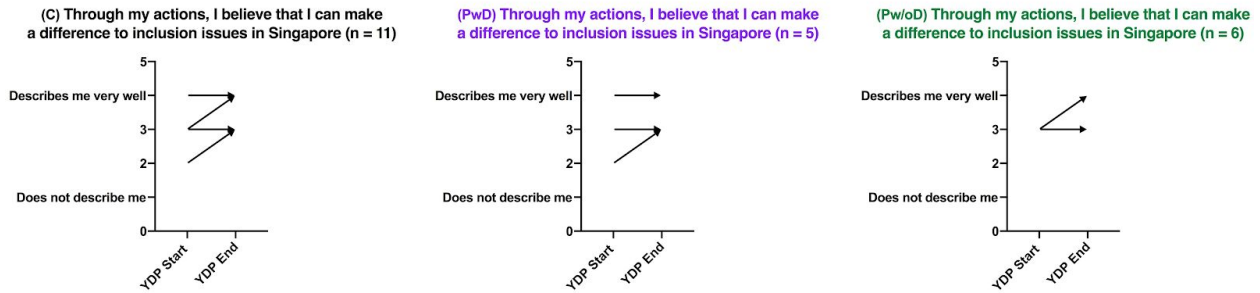group project setting", categorised according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.
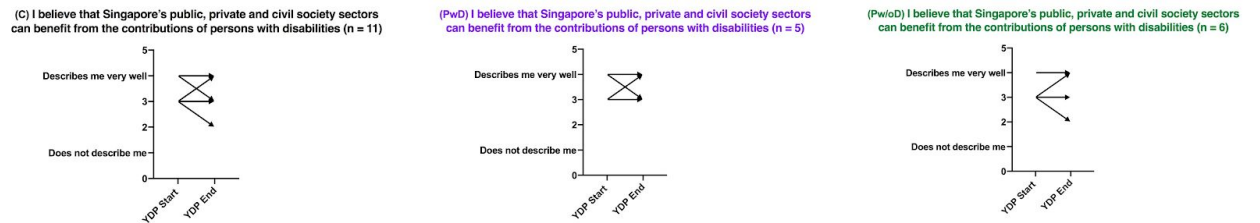

Figures 12a - 12c (left to right) Before and after graphs indicating participants' response to the question "My circumstances do not hold me back from actualising my potential", categorised according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.

Figures 13a - 13c (left to right) Before and after graphs indicating participants' response to the question "I feel confident in my capability to catalyse/create social change in Singapore", categorised according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.

Figures 14a - 14c (left to right) Before and after graphs indicating participants' response to the question "Through my actions, I believe that I can make a difference to inclusion issues in Singapore", categorised according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.

Figures 15a - 15c (left to right) Before and after graphs indicating participants' response to the question "I believe that Singapore's public, private and civil society sectors can benefit from the contributions of persons with disabilities", categorised according to C - Cohort, PwD - Participants with disabilities, and Pw/oD - Participants without disabilities.

Participants' Perception of the Program Design.

Table 6 summarizes participants' responses to the rest of the closing survey, seeking their feedback on program design and implementation, viz. the 10 best practices of service-learning (Honnet and Poulsen, 1989). Generally, most responses fell into the positive end of the scale (i.e. "Describes me" and "Describes me very well"). We also uncovered areas that needed improvement, denoted as ≥ 25% responses (i.e. 3/12) registering the "Does not describe me very well" or "Does not describe me at all". These were found in three areas encompassing the provision of structured reflection opportunities, articulation of the program's learning goals, and

participants' confidence in their ability to design, implement and measure the impact of their projects.

Table 6 Participants responses to questions in closing survey, that focused on program design and implementation, based on Honnet and Poulsen (1998)'s best practices of service learning.

No.	Best practices of service-learning from Honnet and Poulsen (1989)	Question No.	Survey questions	Numbers of participants who indicated (n = 12)			
				Does not describe me at all	Does not describe me very well	Describes me	Describes me very well
1	Engage people in responsible and challenging actions for the common good - by placing youths in responsible roles in which their actions affect others, responsible attitudes and behaviours will develop	1	I feel that the project I worked on served the community and the common good		2	7	3
		2	I am confident in explaining the effects of my project towards making Singapore a more inclusive society			8	4
2	Provide structured opportunities for people to reflect critically on their service experience	3	I reflected on what I learnt during each session using the post-session surveys administered after each equipping session.		3	8	1
		4	I am able to reflect critically on the progress of my project during the consultation clinics		1	10	1
		5	I feel that YDP has		1	7	4

			provided structured opportunities for me to reflect critically on my overall learning experience				
3	Articulate clear service and learning goals for everyone involved	6	I feel that the programme organizers had clearly articulated the learning goals of the programme from the very start of the programme	1	3	4	4
4	Allow for those with needs to define those needs	7	I have been able to tap into my personal knowledge and experience or a teammate's personal knowledge and experience to understand the needs of the community			9	3
5	Clarify the responsibilities of each person and organisation involved	8	I was clear on the role I played in my project			8	4
		9	I understood the role of SPD, Skillseed and the mentors in the development of our projects		2	4	6
6	Match service providers and service needs through a process that recognizes changing	10	Realised through the validation and iterative nature of Design Thinking				

#		Item	Statement					
	circumstances							
7	Expect genuine, active, and sustained organizational commitment	11	I feel that I have received genuine, active, and sustained commitment from SPD				6	6
		12	I feel that I have received genuine, active, and sustained commitment from Skillseed				6	6
		13	I feel that I have received genuine, active, and sustained commitment from the mentors			2	5	5
8	Use training, supervision, monitoring, support, recognition, and evaluation to meet service and learning goals	14	I was able to keep track of my learning progress with the help of post-session surveys			2	9	1
		15	I am confident in my ability to design, implement and measure the impact of my project			4	5	3
9	Ensure that the time commitment for service is flexible, appropriate, and in the best interests of all involved	22	I was able to choose the consultation timings suitable for my group				4	8
10	Commit to program	16	I feel that the composition of my			1	7	4

23

participation by and with diverse populations		group is sufficiently diverse				
	17	I feel that appropriate measures were made to maximise the possibility of an inclusive and comfortable experience for myself.		2	8	2

Discussion

An Experimental Approach that has Yielded Some Results

When SPD and Skillseed first set out to develop this inclusive version of the YDP, we weren't aware that it was likely the first of its kind in Singapore. While we built on our experience and ground knowledge, our approach was very much experimental, seeing this as the first of many future iterations. As a cohort, we believe that the youths have achieved much, as evidenced by the progress that they had accomplished by the program closure in March 2019. For some participants, such as the members of *The Flying Elephant* who worked on the inclusive library for children with sensory-disabilities, their efforts have led to potential impact at the national-level. We further suggest that since their work provides access to learning resources for children, the reach of their project has intergenerational significance.

To some extent, we also witness evidence of participants attaining the desired outcomes in the area of disability inclusion, as corroborated by their responses shared earlier. It is unsurprising that the YDP has enabled the able-bodied participants to interact more with persons with disabilities and resulted in greater overall knowledge of disability inclusion challenges. For many of the participants this was their first encounter with youth with disabilities, and even more so collaborating in a project context. While we see less pronounced (positively directed) changes in participants with disabilities, they had started off with a firmer understanding of the disability sector, and thus this maintenance / slight change seems reasonable. What benefited them were the opportunities to work with other differently abled participants and feel better equipped to do so, as a consequence. Combining these with participants' feedback in Table 6, provide some indication that both service and learning outcomes have been achieved.

Sl Best Practices: The Gap Between Vision and Execution

At the conceptual level, YDP's design aligns with Furco (1996) and Jacoby (2015), in which participants fulfill community needs whilst achieving the desired learning outcomes, *through* experiential education. The intent of YDP particularly resonates with Sigmon's fourth service and learning type - *SERVICE-LEARNING* - where the service and learning goals strengthen each other and bear equal importance (Sigmon, 1994). Founded upon the belief that the program participants bear gifts, and can create change in their communities by and for themselves, the program further layers the Asset-based Community Development approach (Kretzmann and McKnight, 1993). In sum, the YDP's intent bears a close resemblance to the textbook definition of service-learning described by Jacoby (2015).

Yet, there is also a challenge in executing the vision, as participants have pointed out in their feedback on questions pertaining to the best practices of service-learning (Honnet and Poulsen, 1989). While SPD and Skillseed had done our best to communicate the program's learning aims from the onset, these might have been lost amidst the dynamism of the Design Thinking project-based medium in which the program was realised. In this respect, the YDP also differs from other more conventional service-learning programs that have a narrower scope of service and learning (see Lee, 2010, for example). Nevertheless, this is an area that we will tighten in future runs, together with the introduction of more points for structured reflection. For the latter, we discovered that despite having some structured and unstructured reflection points embedded within the program, a couple of participants did not realise that being in an inclusive classroom environment was the most direct and experiential manner of learning about inclusion; no theoretical *ex situ* lesson would be more illuminating or helpful. As such, we recognise that more structured reflections and guidance, beyond focusing on the technical knowledge of project ideation and management, were needed to help participants realise such experiential lessons.

Finally, we also found that friendship and camaraderie building are equally fundamental to sustaining interest and progress within the project groups, especially during the implementation phase where there was less structured touchpoints from SPD and Skillseed. This was especially important in the case of *Plus de Murs x New Dimension* whose team dynamics regressed due to a member's perceived lack of interest in the group's project topic in the face of competing academic demands. Participants also frequently commented that friendship was a large factor in drawing them to the program, so it's an important element that we would further emphasize for future runs of YDP, possibly in the form of shared meals and recreational activities to nurture budding friendships.

Conclusion

Dymond et al. (2011) remarked that in the desert of published inclusive service-learning articles, the description of actual programs, especially one that included post high school students, are (even more) exceedingly rare. In fact, only one such piece was found in their review (Murray 2001; Dymond *et al.*, 2011). This paper happens to fit both, but the lack of precedents make it challenging to compare the findings of YDP with other similar programs. Nevertheless, this paper provides valuable reference for future efforts and we hope to see more examples, going forward.

Author Information

Wilson CHAN is a Director at Skillseed. He graduated from QMUL with 1st Class Honours in Marine & Freshwater Biology and received the G.E Fogg Prize for outstanding passion in the field. He also earned a Masters Degree in Environmental Management from Yale University, during which he co-founded a social enterprise serving international students. He now apprentices in Singapore's social space.

1B Tyrwhitt Road, Singapore 207522
Website: skillseed.sg
Email: wilson@skillseed.sg

Dennis Poh Wah LEE* is an Associate Professor in Shantou University Business School, Editor of the Journal of Asia Entrepreneurship and Sustainability; and is the Regional Chairman (Asia) for the International Quality Education Foundation (IQEF). He teaches Non-Profit Organisation Management, International Business, International Strategic Management, Global Enterprise Management, Principles of Management, and Doing Business in China, serving as faculty advisor to STU Enactus. Dennis is also a Visiting Professor at Copenhagen Business School (CBE) and teaches "Managing Strategically in a Globalized Word" and "Managing Non-Profit Organizations – Principles & Practices".

243, Da Xue Road, Shantou, Guangdong, China. 515063
Email: dennislee@stu.edu.cn
https://www.linkedin.com/in/dennis-lee-3931462

Yi Shien SIM is a graduate of Yale-NUS College, where she earned an honours degree in anthropology. She assisted Skillseed and SPD with the management of the YDP program. In college, she facilitated a photography program for migrant workers, and founded various advocacy organisations including CAPE and Students Taking Action for NUS to Divest (STAND) .

Email: sim.yishien@u.yale-nus.edu.sg

Nurliyana OMAR is a facilitator and curriculum developer at Skillseed. She works with youth to explore social and environmental issues ranging from rural community development to human wildlife conflict. She also trains youth in social impact skills such as Design Thinking and ABCD.

1B Tyrwhitt Road, Singapore 207522

Email: liyana@skillseed.sg

Rachel LOH is a disability social worker and programme coordinator at SPD, with a strong commitment to serving and advocating for persons with disabilities, including youth and older adults. Skilled at building community support in the advocacy for the disability cause, Rachel led community projects in the Tiong Bahru (Seng Poh) precinct. Prior to serving the disability sector as a community social worker, Rachel accumulated four fruitful years of youth policy-making in the Ministry of Community, Culture and Youth and the then-Ministry Community Youth and Sports.

Email: rachel_loh@spd.org.sg

References

Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York: Longman.

Brill, C. L. (1994). The effects of participation in service-learning on adolescents with disabilities. *Journal of Adolescence*, *17(4)*, 369-380. DOI: 10.1006/jado.1994.1033

Bringle, R. G. (2015). *Service-Learning Essentials: Questions, Answers, and Lessons Learned by Barbara Jacoby (review). Journal of College Student Development 56(7)*, 754-756. Johns Hopkins University Press. Retrieved June 14, 2019, from Project MUSE database.

Chua, C. C. (2010). Rethinking community-service education in Singapore schools. *Social Space*, 94-97.

Cirillo, F. (2018). *The Pomodoro Technique: The Life-changing Time-management System*. New York City, NY: Random House.

Covey, Stephen R. (2004). *The 7 habits of highly effective people: Powerful lessons in personal change*. New York, NY: Free Press.

Dymond, S. K., Renzaglia, A., & Slagor, M. T. (2011). Trends in the Use of Service Learning With Students With Disabilities. *Remedial and Special Education*, *32(3)*, 219-229. DOI: 10.1177/0741932510362173

Frey, L. M. (2003). Abundant beautification: An effective service-learning project for students with emotional or behavioral disorders. *Teaching Exceptional Children*, *35(5)*, 66-75.

Furco, A. (1996). Service-Learning: A Balanced Approach to Experiential Education. *Expanding Boundaries: Serving and Learning*, 2–6.

Kretzman, J. P., & McKnight, J. (1993). *Building Communities from the Inside Out: A Path Toward Finding and Mobilizing A Community's Assets*. Chicago, IL: ACTA Publications.

Jacoby, B. (2015). *Service-learning essentials: Questions, answers and lessons learned.* San Francisco, CA: Jossey-Bass. DOI: https://doi.org/10.1353/csd.2015.0075

Lee, D. (2010). International Service-learning: A Singapore Experience. *Service-Learning in Asia*, 127-142. DOI: 10.5790/hongkong/9789888028467.003.0010

McCarty, B., & Hazelkorn, M. (2001). Reflection: The key to social-emotional change using service-learning. *Beyond Behavior*, *10(3),* 30-35.

Myers, I. B., & Myers, I. B. (1962). *The Myers-Briggs type indicator manual*. Palo Alto, CA: Consulting Psychologists Press.

Ng, C. (1997, September 29). Speech by Mr Ng Chee Meng, Minister of Education (Schools), at the 20th Appointment and Appreciation Ceremony for Principals. Retrieved from https://www.moe.gov.sg/news/speeches/speech-by-mr-ng-chee-meng--minister-of-education-schools--at-the-20th-appointment-and-appreciation-ceremony-for-principals

Ong, Y. (2018 September 28). Speech by Mr Ong Ye Kung, Minister of Education, at the

Schools Work Plan Seminar. Retrieved from

https://www.moe.gov.sg/news/speeches/opening-address-by-mr-ong-ye-kung--minister-for-educ

ation--at-the-schools-work-plan-seminar

Orr, D. W. (1992). The problem of education. New Directions for Higher Education, 1992(77),

3-8. DOI: 10.1002/he.36919927703

Rubin, G. (2017). *The Four Tendencies: The Indispensable Personality Profiles that Reveal how

to Make Your Life Better (and Other People's Lives Better, Too).* New York City, NY: Harmony.

Sigmon, R. L. 1994. Serving to Learn, Learning to Serve. *Linking Service with Learning.*

Washington, DC: Council for Independent Colleges Report.

Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological bulletin*, *63(6)*,

384. DOI: 10.1037/h0022100