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Service-learning under COVID-19: A scoping review of the challenges and opportunities for practicing service-learning in the 'New Normal'

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ABSTRACT

Service-learning collaborations have the potential to effectively respond to community needs, students' needs, and institutional priorities. However, natural and man-made crises oftentimes throw these arrangements into disarray. The coronavirus (COVID-19) is one such significant crisis that continues to challenge service-learning collaborations worldwide. Based on a systematic scoping review of scholarship on service-learning programs conducted during COVID-19, this study aimed to explore thematic similarities and differences between them, elucidating key observations and insights for future action. Overall, findings from 13 peer-reviewed articles indicated that, although not immune to the wide-ranging adverse effects of COVID-19, service-learning has proven itself to be an effective responsive pedagogy in times of crisis.

1. Introduction

Service-learning is a pedagogical platform that promotes communitarianism by integrating (academic) learning activities and community service through directed, purposeful civic engagement (Furco and Norvell, 2019). Unlike volunteering and internships, service-learning incorporates (academic) learning objectives in the process of service delivery such that they become linked to one another as an integrative whole instead of a collection of two elements (i.e., learning objectives and community service) (Furco and Norvell, 2019). In addition, unique to service-learning, in comparison to other service-based experiential activities, is the focus on the primary intended beneficiary. As Furco and Norvell (2019, p. 21; authors' original emphasis) explains, "When it comes to service learning… the experience is intentionally built to focus on ensuring learning for the service provider (the student) *and* service for the recipient of that service (the community member or agency)." Due to the emphasis on bidirectional gains – anchored between the student volunteers and the community recipients – service-learning, as a community-based pedagogical practice, has increasingly been adopted by (higher) educational institutions globally (Beaman and Davidson, 2020; Salam et al., 2019). In effect, the practice of service-learning varies considerably across institutional, community, cultural, and national contexts, which accordingly involves a variety of stakeholders and addresses diverse needs of community members (Furco and Norvell, 2019; Salam et al., 2019).

The coronavirus (hereafter, COVID-19) has impacted community building efforts, traditional institutional and social orders, and social life around the world (e.g., Chawłowska et al., 2021; * * Elengickal et al., 2021; Rupley et al., 2020; Rusu, 2020). While published research studies have increasingly revealed transformations in cross-sectoral alliances and related institutional dynamics as a result of coping with the virus and associated anti-epidemic measures, such as between the public and private sectors (e.g., Ku and Choe, 2020 in South Korea; Wang et al., 2022 in China), less attention has been devoted to revealing how the practice of service-learning is being affected. As case studies gradually emerge, documenting the effects of COVID-19 on their service-learning project(s), there is a need to provide a systematic synthesis of available outputs.

1.1. Aim

Using a scoping review methodology, the first aim of this study is to identify, based on published articles or reports, a set of service-learning programs that were successfully conducted from late-2019 to early-2021 of the COVID-19 era. Second, this study aims to explore their program characteristics and experiences. As a form of experiential education that

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involves purposeful collaborations between constituents of the university and the larger community, the travel bans, enforcement of rules that minimize physical contact, campus shutdowns, and increasing uncertainty over resource allocation have impacted the practice and/or implementation of service-learning. Among service-learning programs selected through the scoping review process, what are their program characteristics? Also, how did they adapt to the challenges posed by COVID-19 and associated anti-epidemic measures, and what opportunities for improved practice have been discussed by them? To advance our understanding of service-learning practices in this 'New Normal' (i.e., under COVID-19), the present study seeks to systematically consolidate published empirical cases of service-learning and elucidate thematic similarities and differences between them.

2. Literature review

2.1. Service-learning: applications in the university setting

The growing popularity of service-learning is evident in its widespread application across academic disciplines and degree programs offered by universities. Beyond the rapid expansion among higher education institutions in North America (Crabtree, 1998), service-learning programs have proliferated in Asia (e.g., Glauberman et al., 2019), Central and South America (e.g., Crabtree, 1998), Europe (e.g., Resch and Schrittesser, 2021), Africa (e.g., Downes et al., 2007), and Oceania (e.g., O'Steen and Perry, 2012; Power & Bennett, 2015). In addition, service-learning has been infused into varying academic curricula (Salam et al., 2019), including, but not limited to, medicine, nursing and health sciences (e.g., Downes et al., 2007; Hunt et al., 2011; Stewart and Wubbena, 2014), social work (e.g., Schelbe et al., 2014), business (e.g., Schoenherr, 2015), and teacher education (e.g., Power & Bennett, 2015; Resch and Schrittesser, 2021).

While hype may be a contributing factor to explain the high adoption rates, service-learning as a pedagogy has also attracted interest because of its functional values, which notably address two key challenges that universities in contemporary societies have to contend with (Preradovic, 2011). The first challenge is the societal expectation that universities need to cultivate teaching and learning processes that effectively facilitate the bridging of theoretical knowledge and skills with real-world applications. University education is expected to provide adequate preparation for students' transition into the labor market (as a member workforce) and to be active contributors in community life. Thus, it is of high importance that the university education not only encapsulates content knowledge (e.g., learning abstract frameworks, procedure, and history in a given discipline), but also knowledge application and translation (e.g., learning through appropriate real-world application of content knowledge). The second challenge to contend with is the expectation that universities will be active in contributing to the betterment of the communities that they are embedded in. In attempts to invalidate condemnatory traditional perceptions of the institution as being detached from issues outside their intellectualist purview, universities have devoted greater efforts to assert their social responsibilities in addressing needs and socio-economic problems experienced by communities in their immediate vicinity (as well as abroad) (see Bond and Paterson, 2005). For instance, universities have organized public forums, local or overseas volunteering activities, and fieldwork or internship placements with (grassroot) community organizations. As not all community engagement efforts fall within the scope of students' teaching and learning experiences, research excellence, and/or procuring competitive funding, universities have to confront difficult choices in negotiating priorities and the distribution of resources (Jongbloed et al., 2008).

As an experiential pedagogy that necessarily bridges distinct worlds of experience, resources, expertise, dispositions, and needs (e.g., between university students and underprivileged communities) for the mutual benefits of all parties and constituents involved, service-learning affords new opportunities for growth at the individual-level (e.g., expanding knowledge base, skill development, and heightened cultural awareness), meets community-level needs, and catalyzes closer community-academic partnerships (e.g., Schoenherr, 2015). Evaluation case studies have found that university students, as participants in the service-learning programs, gained greater clarity and deeper understanding of academic content and abstract concepts, new knowledge and skills, professional competencies, civic mindedness, and the development of character, world-view, attitudes, and values (e.g., Crabtree, 1998; Downes et al., 2007; Preradovic, 2011; Schoenherr, 2015). In addition, scholars that have followed up on student participants of service-learning programs have shown that their direct working experiences with community organizations and constituents improved employability. For example, among some student participants followed up by Preradovic (2011), prior involvement in service-learning programs paved the way for their gainful employment with the organizations they were involved with during the program. Regarding the university's civic obligation, empirical scholarship on service-learning has shown that the experiential pedagogy cultivates (by *necessitating*) closer involvements between the university and community groups and agencies, industries, and governments (e.g., Downes et al., 2007; Preradovic, 2011). Unlike other models of partnerships between university and non-university entities, such as fieldwork placement or internships, mutual empowerment in service-learning is achieved through actualizing its foundational tenets of reciprocity and equality among all parties involved in the community-academic partnership (Crabtree, 1998; Khiatani and Liu, 2020). Practically, as Voss et al. (2015) discuss, community-academic partnerships to implement service-learning "are possible when problems and solutions are identified together, when problems are addressed mutually, and when clear responsibilities, expectations, and objectives are established" (p. 396). These practical standards of transparency (e.g., of identified needs, weaknesses, strengths, and expectations), collective responsibility (e.g., of service-learning outcomes for all parties involved), and shared decision-making (e.g., regarding program development and evaluation) provide a uniting force for mutually assured cooperation that makes service-learning effective at enhancing student learning and community development (Crabtree, 1998; Voss et al., 2015).

2.2. Dedication, time, interest, and resources: the challenges of applying service-learning in universities

Although under-represented in the broader body of service-learning literature, which predominantly focus on measuring accrued benefits, there are a variety of obstacles and challenges that emerge in the process of designing, implementing, and sustaining service-learning in university education. By the same token that mutually assured cooperation facilitates the collective benefits of service-learning for all parties involved, when any one key party (e.g., students, faculty, and partnering organizations) experiences certain challenges, it compromises collaboration and mutuality, which then negatively impacts the likelihood of achieving mutual goals. For example, Preradovic (2011), Schelbe and colleagues (2014), and Schoenherr (2015) discussed how infusing service-learning into the academic curriculum can be energy- and time-consuming (e.g., handling logistics, meeting and cooperating with community agency representatives, and managing students' and agency representatives' expectations). It also fundamentally requires faculty member(s) to have strong commitment and interest in carrying through with the project, which may not be their top priority in the first place. From the perspective of the partnering community organization, while also sharing the challenge of devoting considerable time, energy, and resources to ensure that student learning outcomes are met, some partnering organizations uniquely face the difficulty of matching students who lack experience, skills, knowledge, and/or time with available opportunities for meaningfully addressing community needs (Schelbe et al., 2014; Schoenherr, 2015).

2.3. Service-learning during times of crises

While challenges vary based on a multitude of factors and at different levels of analysis, one condition that exacerbates any existing or potential difficulty is the condition of a crisis or disaster (Glauberman et al., 2019). Based on the above discussion, as effective service-learning relies heavily on achieving the agreed upon roles and responsibilities shared by each party in the community-academic partnership (Voss et al., 2015), it is tantamount that past agreements (e.g., on decisions made regarding resource distribution or student safety) are resistant to spontaneous change. For example, initial commitments planned between students, faculty members, and community agency representatives to collaborate on a service-learning project may break under the stress and pressure of a natural (e.g., earthquake or hurricane) or man-made disaster (e.g., outbreak of mass conflict or terrorism). Students may no longer have the time nor feel safe enough to participate, faculty members may have diminished departmental or institutional support to carry out the project, and community agencies may lack the time, manpower, and resources as a result of greater involvement in disaster response efforts (e.g., Glauberman et al., 2019).

As most service-learning projects are developed, implemented, and evaluated under conditions of stability, literature on the impacts of natural or man-made crises on service-learning are limited. Among the available literature, there is sufficient evidence to suggest that, despite the hardship, service-learning in times of crisis is capable of encouraging student growth, meeting academic learning outcomes, and promoting community development. These outcomes have been evidenced in service-learning evaluation scholarship in cases of, for example, earthquakes in New Zealand (e.g., see O'Steen and Perry, 2012) and Japan (e.g., see Glauberman et al., 2019), or droughts in Ethiopia (e.g., see Downes et al., 2007). In these studies, service-learning was primarily adopted as a responsive pedagogical strategy to address students' learning needs and personal growth, needs of community organizations, and the overall disaster response effort. Notably, Glauberman et al. (2019) and Downes and colleagues (2007) discussed how service-learning strengthened partnerships with government and non-government entities, improved communities' baseline health conditions and disaster preparedness, and provided an invaluable opportunity for students to learn and grow (e.g., health science and nursing students developed professional competencies that would benefit their future careers in caring for survivors of disasters). Unique challenges also emerged in the context of adopting service-learning in a post-disaster setting, such as community organizations' difficulties to maintain a strong commitment to the partnership due to high turnover rates and the challenge of balancing disaster response with students' learning experience (Glauberman et al., 2019).

As much as service-learning can be adversely impacted by the state of flux, crises provide an opportune time to explore the emergence of novel service-learning practices, circumstances that explain the dissipation of practices, and the complex multi-party decision-making processes involved in reforming ongoing practices in response to the encountered crises. For example, as discussed by O'Steen and Perry (2012), New Zealand's first service-learning university course was developed in the University of Canterbury as a result of thousands of its students banding together to engage in disaster response efforts in the wake of the major earthquakes of 2010 and 2011. Even in areas where service-learning projects have made their marks prior to major disasters, the flexibility and adaptability afforded by service-learning encouraged its use as a responsive academic curriculum and the basis for establishing strong community-academic partnerships with wide-ranging contributions for community development (Downes et al., 2007; Glauberman et al., 2019). Notwithstanding the significant contributions that these program evaluation case studies and case reports have for service-learning programming in communities where disasters are not uncommon, there is virtually no scholarship that collates and analyzes service-learning programs under times of crisis for thematically notable similarities and differences (e.g., with regards to characteristics of the program/project, intended beneficiaries, measured outcomes, and challenges experienced). Although the impacts of and responses to disasters are contextually unique, a comprehensive coverage and evaluation of service-learning programs in times of crises would yield valuable insight into what service-learning practices work, what does not work, and possible directions for future programming. The present study intends to contribute to this void by offering a systematic scoping review of published scholarship on service-learning projects that responded to emergent needs during the first several months of the COVID-19 pandemic, a global phenomenon that has undoubtedly directly and/or indirectly impacted service-learning programs since late-2019.

3. Methodology

3.1. Initial search

The review question and the review protocol were preregistered on Open Science Framework (OSF) Registries (https://osf.io/j4k73/?view_only=0d0d0e31c7b14c2da59d92c270160b47). Since no data was collected from individuals, no ethics review was needed for this scoping review.

The initial search began on 20th March 2021 with 15 databases – namely Education Research Complete, ERIC, Academic Search Complete, CINAHL Plus with Full Text, Family Studies Abstracts, Social Work Abstracts, SocINDEX with Full Text, LGBTQ+ Source, OVID HealthStar, OVID Medline (1946 – 2020), APA PsycInfo, Sociological Abstracts (1952 - current), PubMed, Web of Science, and Scopus – for published articles.

Where filters were available, they were used to restrict results to articles with full text, from scholarly and peer-reviewed journals, and written in English. Articles would only be included if they were published between 1st December 2019 and 28th February 2021. Techniques for searching included the use of search tools such as subject headings and Boolean operators. In the search queries, subject headings and key term searches of the term "service learning" were combined with the subject headings and key term searches of the terms "COVID-19, pandemic, and coronavirus". Therefore, the following search algorithm was used:

("service learning"[Subject Heading] OR "service learning"[Title/Abstract/Keyword] OR "service-learning"[Title/Abstract/Keyword]) AND ("COVID-19″[Subject Heading] OR "coronavirus"[Subject Heading] OR "pandemic"[Subject Heading] OR "COVID-19″[Title/Abstract/Keyword] OR "coronavirus"[Title/Abstract/Keyword] OR "pandemic"[Title/Abstract/Keyword] OR "2019-ncov" [Title/Abstract/Keyword] OR "sars-cov-2″[Title/Abstract/Keyword] OR "cov-19″[Title/Abstract/Keyword]).

In total, 72 articles were yielded from this initial search. The pool was narrowed down to 49 articles, after removing duplicates. All citations were imported to a spreadsheet for screening. Fig. 1 illustrates the search decision flowchart, as recommended by the Preferred Reporting of Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement (Moher et al., 2009).

3.2. Title and abstract screening

In the first stage of screening, the titles and abstracts of the 49 articles were reviewed. Articles were included in the next stage of screening only if they were (1) about service-learning in the pandemic, (2) under the (broadly put) field(s) of social sciences, healthcare, and/or education, (3) in the higher education sector, and (4) an empirical study. In order to ensure inter-rater reliability, the four authors pretested on 10 randomly selected articles and obtained a free-marginal multi-rater kappa (Randolph, 2005) of 0.50, 95% CI [0.17, 0.83]. It is well below the norm of 0.80, indicating the agreement among raters was weak (McHugh, 2012). To improve on the agreement, one criterion was removed (i.e., whether

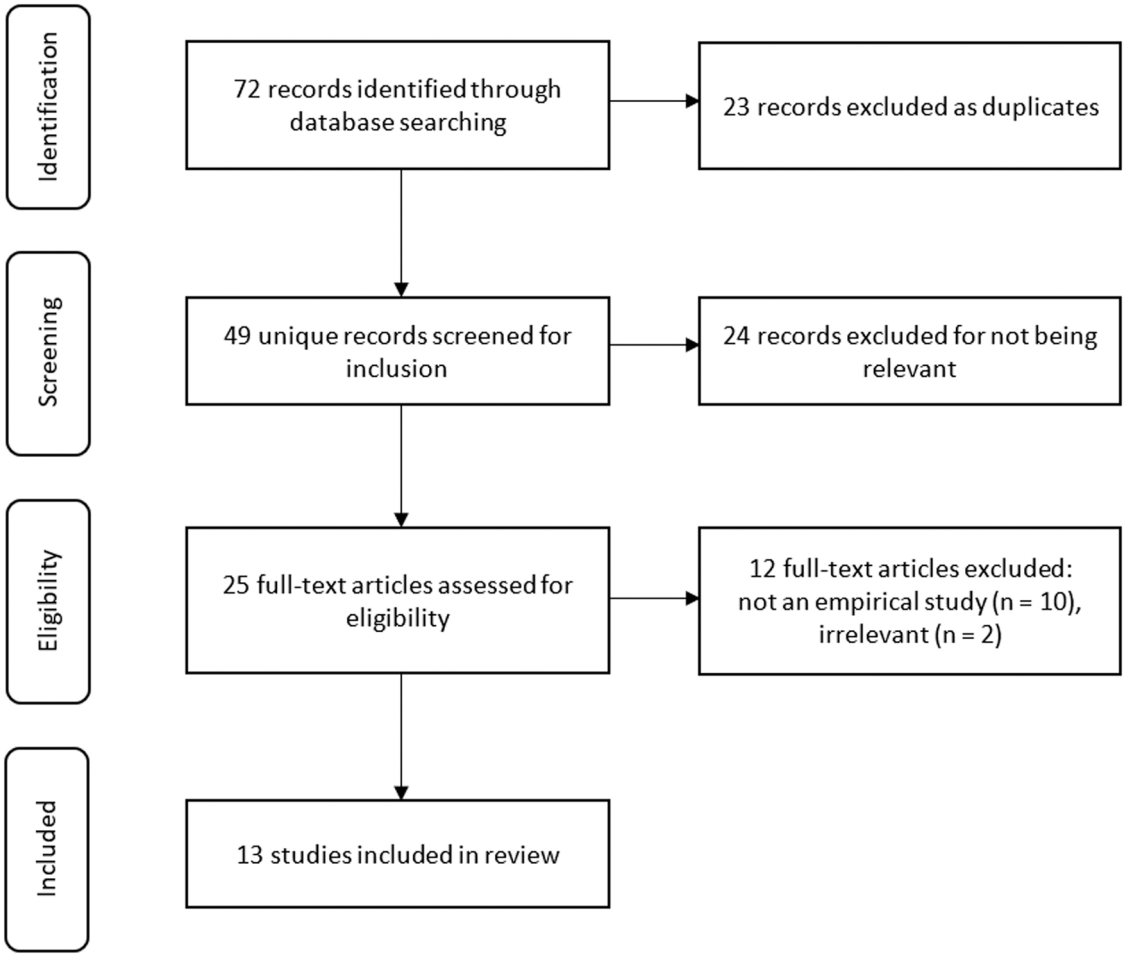

Fig. 1. PRISMA flow diagram for article selection.

it is an empirical study), considering that it was hard to determine such information from the titles and abstracts. Another 8 articles were randomly selected for a second interrater reliability test, and a free-marginal multi-rater kappa of 0.88 was obtained, 95% CI [0.63, 1.00]. After establishing a common understanding of the inclusion criteria, the authors paired up to perform title and abstract screening so that all articles were independently reviewed by two reviewers (J.L. and O.H./M.S. and P.K.). The authors met to resolve conflicting decisions after all articles were screened. Finally, 25 articles were included in the subsequent stage of screening.

3.3. Full-text screening

Full-texts of the 25 articles were obtained through the library databases of the University of Calgary, which were available to two of the authors. The four authors read all the articles and color-coded the content: red for descriptions and program-related information (e.g., location, goals, activities, adaptations made, etc.), blue for evaluation-related information (e.g., sample size, measurements, results, etc.), green for reported challenges of the service-learning program, and yellow for suggestions and implications. The coding scheme was validated, after the authors independently coded two selected articles and then came together to compare codes and subcodes (i.e., investigator triangulation).

Study characteristics were then extracted into a table which identified publication information of the articles (i.e., title, journal, publication year, and author(s)), nature and characteristics of the service-learning program (i.e., location, nature of participation, whether newly developed or adapted in the COVID-19 pandemic, discipline(s) of students, communities involved, rationale, and recruitment), type of study, number of participants, outcome(s) of interest, measurements, reported challenges due to COVID-19, and implications of the study. The authors paired up and extracted the data from the articles (J.L and O.H./M.S and P.K.). The four authors met to resolve disagreements and clarify uncertainties after the first round of full-text screening. Out of the 25 full-text articles reviewed, 12 were excluded from the final database. The 12 articles were excluded because they did not contain sufficient information about their service-learning programs for analysis. Basic information about the 13 peer-reviewed articles that were included in this scoping review (e.g., publication-related details, location of the service-learning program, nature of participation, type of study, whether the programs were newly developed or adapted from old practices in response to the COVID-19 social distancing regulations, and number of participants) are displayed in Table 1.

3.4. Data summary and synthesis

In order to analyze the data, the study characteristics extracted in the screening stage were further expanded in detail in the stage of data summary and synthesis. Additionally, the activities of the reviewed service-learning programs were also extracted, analyzed, and included in the table.

4. Results

This scoping review yielded 13 articles about service-learning

Table 1
Peer-reviewed articles included in the scoping review: Basic information.

#	Authors	Year	Journal	Location of program	Nature of participation	New program or adapted	Type of study	Number of participants
3	Tian and Noel Jr.	2020	Journal of Catholic Education	USA	Voluntary	Adaptations made	Qualitative survey (using secondary data)	829 participants in 2020′s virtual program (463 students, 221 staff, 49 faculty, and 96 alumni); 913 participants in 2019′s on-site program; 711 participants in 2018′s on-site program
8	Salter, Oates, Swanson, and Bourke	2020	International Journal of Work-Integrated Learning	Australia	Course-based	Adaptations made	Case study	Did not mention the total number of students who participated, but for the four placements described in the article: Specialist School Placement - Physiotherapy: 2 students; Mental Health/Homelessness Placement - Occupational Therapy: 2 students; Primary School Placement - Speech Pathology: 1 student; Intergenerational Kindergarten Project - Occupational Therapy: 2 students
11	Tsima, Masupe, and Setlhare	2020	African Journal of Primary Health Care & Family Medicine	Botswana	Did not specify	Newly developed	Case study	Did not specify
13	Lalloo, Hawkins, Lindley, and Kumar	2021	Education for Primary Care	UK	Did not specify	Did not specify	Case study	24 workshop attendees
14	Doody, Schuetze, and Fulcher	2020	Experiential Learning & Teaching in Higher Education (ELTHE): A Journal for Engaged Educators	USA	Course-based	Adaptations made	Quantitative and qualitative survey	35 students completed the original assignment; 20 students completed the modified assignment
17	Archie-Booker, Osaji, Caldwell, Cooper, Garcia, Waldrop, Powers, Jackson, and Miles-Richardson	2020	American Journal of Health Studies	USA	Course-based	Adaptations made	Case study	Did not specify
23	Lewis and Strano-Paul	2021	Journal of the American Geriatrics Society	USA	Course-based	Newly developed	Qualitative review of reflections	35 third- and fourth-year medical students
26	Bickerton, Siegart, and Marquez	2020	Peer-reviewed reports in Medical education research (PRiMER)	USA	A mix of voluntary and course-based	Newly developed	Case study	29 students
28	Elengickal, Delgado, Jain, Diller, Valli, Dhillon, Lee, Baskar, and MacArthur	2021	Medical Science Educator	USA	Course-based	Newly developed	Case study	Pandemic Medicine Elective 1.0: 186 students; Pandemic Medicine 2.0: 85 students; Pandemic Medicine Selective: 10 students
29	Grilo, Catallozzi, Desai, Sein, Quinteros Baumgart, Timmins, Edelman, and Amiel	2021	FASEB BioAdvances	USA	Course-based	Newly developed	Case study	Over 2000 students and faculty
31	Lin and Shek	2021	International Journal of Environmental Research and Public Health	Hong Kong	Course-based	Adaptations made	Quantitative survey	216 students completed the objective outcome evaluation (86 students in face-to-face (FTF) mode and 130 students in non-FTF mode); 345 students completed the subjective outcome evaluation (125 students in FTF mode and 220 students in non-FTF mode)
34	Solá and Marquez	2020	Peer-reviewed reports in Medical education research (PRiMER)	USA	Course-based	Newly developed	Case study	35 students
36	Ferguson, Figy, and Manley	2021	Journal of Medical Education and Curricular Development	USA	Course-based	Newly developed	Case study	23 students

programs that were implemented from late-2019 to early-2021 of the COVID-19 era. Nine of them were case reports, and the remaining four were evaluation case studies (one study was quantitative evaluation, two studies were qualitative evaluation, and one study employed mixed-method evaluation techniques).

In the subsections that follow, the findings are organized based on the type of studies conducted, given that the information discussed in the articles vary with their nature (i.e., case reports versus evaluation case studies). The service-learning programs from case reports are presented first, followed by the service-learning programs from evaluation case studies.

For clarity, case reports refer to articles that aim to provide a detailed

description of the service-learning program/activity. For example, information on its objectives, participant group(s), rundown, resources required, program preparations, implementation/application, identified limitations, and improvements or innovations made. Often, besides discussion of the program/activity, its background or setting is introduced to convey to readers why the program/activity was created and/or its impact. Evaluation case studies, on the other hand, refer to articles that aim to evaluate a service-learning program/activity. This type of article typically includes a brief description of the program and detailed discussion of the methodology, data collection procedure, findings, and interpretation and contextualization of empirical findings. Often, the program-end outcomes are of interest to the researcher(s), but evaluation case studies can also have other interests (e.g., identifying challenges or opportunities in the process of implementing the program).

This section focuses on addressing our research questions, discussing and analyzing basic information (as displayed in Table 1) as well as key characteristics of the service-learning programs, such as disciplinary background of the student participants, target community, rationale, recruitment method, program content, outcome of interest, type of study, measurement(s) adopted, reported challenges in carrying out the program, and implications. Information on these key characteristics of the service-learning programs are summarized and compiled in Table 2.

4.1. Service-learning programs: case reports

4.1.1. General information of the included articles

The nine case reports were from four countries. Of these, six were conducted in the United States (#17, 26, 28, 29, 34, 36), one in Australia (#8), one in Botswana (#11), and one in the United Kingdom (#13). Six of the service-learning programs described were course-based (#8, 17, 28, 29, 34, 36), one had a mixed nature of course-based and voluntary participation (#26), and two did not specify their program nature (#11, 13). The majority of these service-learning programs were newly developed to meet with the needs derived from COVID-19 situations (#11, 26, 28, 29, 34, 36); two programs made adaptations from some old practices to accommodate to the social distance restriction (#8, 17); and one did not specify how the program was developed (#13).

4.1.2. Discipline of students

The majority of the students who participated in the service-learning programs were pursuing degrees in medicine or closely related majors (e.g., medical sciences) (#11, 13, 26, 28, 29, 34, 36). Other students were pursuing majors in the helping professions (e.g., occupational therapy) (#8) and public health (#17).

4.1.3. Characteristics of the service-learning programs

First, five of the service-learning programs aimed to provide services that addressed the needs of the general community (#8, 11, 17, 28, 29) under COVID-19. The remaining programs tackled needs of clinical patients (#26, 34), faculty and students (#28, 29), healthcare workers (#11), and elderly (#36) that had emerged due to COVID-19.

Second, the majority of the participants were recruited from courses they were attending as students (#17, 26, 28, 29, 34, 36). One program recruited students attending placements (#8), while another program engaged students from a course that had placement components (#29). The remaining two case reports did not mention their programs' recruitment methods (#11, 13).

Third, the most common reason for launching the programs was to provide learning opportunities for students (#8, 11, 17, 26, 28, 29, 34, 36). All the programs described in the case reports aimed to find ways to enable students to fulfill their educational needs (e.g., placement requirement) during the pandemic. Nearly half of the programs were designed to accommodate community needs (#8, 17, 26, 28), for example, by providing human capital to community agencies to address needs that emerged during the pandemic (#17), expand current services (#8), conduct telephone screening and healthcare resources referral (#26), and combat challenges provoked during this period (#28). Three programs were designed with the intention of supporting healthcare providers (#11, 29, 36) with their increased burden. Service-learning programs in two case reports (#34, 36) also sought to address mental health issues during COVID-19, providing psychological support and meeting non-clinical needs of patients (#34) and alleviating feelings of isolation among the elderly (#36).

Fourth, given the different objectives of the service-learning programs, a diverse range of content and activities were planned. Two of the most common activities were providing telehealth services (#8, 11, 26, 28) and disseminating COVID-19 related information (#11, 17, 26, 28). The means for disseminating COVID-19 related information included creating five-minute daily updates (#28), infographics (#17), and providing training for healthcare workers to raise awareness about COVID-19 (#11). Three programs made use of reflections (#28, 29, 34) and debriefing/supervision sessions to help consolidate students' learning (#8, 26, 29). Other activities include working on administration (#8, 26, 36) and direct services to recipients (#8, 36). One case report did not mention their program's service content (#13).

4.1.4. Outcome(s) of interest

The programs discussed in the case reports focused on two main outcomes. First, how the program responds to the needs of the community (#8, 26, 29, 34, 36). These programs were developed to address unmet needs in the community, especially those arising due to the pandemic situation. For example, some programs were established to relieve some of the mounting burden felt by healthcare staff, or the healthcare system in general (#34, 36). Second, some programs aimed to stimulate students' learning and development (#11, 28, 34, 36). For example, to accommodate for medical students' educational needs in clinical practice (#11, 28, 36), or develop their professional skills (#34).

The majority of the case reports included quantitative service indicators to measure the outcomes of interest (#26, 28, 29, 34, 36). For example, the number of referrals made (#26, 34) or the number of volunteering hours (#29, 36) were utilized. Three case reports used qualitative feedback from students (#28, 34, 36), and another two analyzed student's reflections of the program and its impact (e.g., on themselves and the community) (#11, 29). Three case reports did not specify how they measured the outcome of interest (#8, 13, 17).

4.1.5. Reported challenges in carrying out the programs

The majority of the case reports did not disclose any challenges that they encountered during the launch and operation of their programs (#11, 17, 26, 29, 34). Among the four case reports that did mention the challenges faced, two of them suggested that a lack of interpersonal engagement in their programs was a major disadvantage for students' learning (#8, 28). This was the only disclosed challenge that was shared between the two case reports. The remaining disclosed challenges were program-specific. For instance, lack of creativity (#8), lengthy email chains (#8), supervisors' lack of experience with tele-supervision (#8), lack of student engagement with certain patient groups and varying service quality standards due to students' rapid clinical rotations (#13), emotional dependency of clients on service providers (#13), lack of feedback from clients (#36), and difficulty in smoothly conducting the program due to high perceived uncertainties under COVID-19 (#36).

4.1.6. Implications for future programs

Two of the most commonly shared implications of conducting service-learning programs during COVID-19 were (1) recognizing the value of virtual service-learning (#26, 29, 36), and (2) recognizing the significance of Information and Communication Technologies (ICT) (#11, 28, 29). With regard to the value of virtual service-learning, two case reports suggested that the model for practice developed and used during the pandemic could also be implemented afterwards (i.e., post-pandemic) and by future programs in different settings (#29, 36). Concerning the realization of the significance of ICT for service-learning,

Table 2
Key characteristics of the service-learning programs described in the peer-reviewed articles included in the scoping review.

#	Discipline	Target Community	Rationale	Recruitment	Program Content	Outcome of interest	Measurement (s) adopted	Challenges reported	Implications
3	Multi-disciplinary	General community	(1) Express support to healthcare provider, (2) Alleviate social isolation of elderly and children, and (3) Connect people	Students, staff, faculty members, and alumni around the world	Card writing (mental support), mask making, document organization, fitness video making, donation, and reflection	Quality: Clarify of the instructions	Student feedback, Quantitative indicators (attendance, social media views)	Technology, Lack of engagement	Value of virtual SL, Value of social media (technology)
8	Helping profession education	Rural community	(1) Provide placement opportunity for students, (2) Develop and provide new services to meet the needs of community, and (3) Expand service provision	Placement students	Assist information management to support program expansion, develop telehealth policy, organize allied health information, implement telehealth programs, tele-assessment, design treatment plan, design online course, and supervision	Meet the needs of community	Did not specify	Lack of direct engagement with community and organizations, lack of creativity, lengthy community, lack of experience with telesupervision, cyber security issue, difficult to engage with client	Value of telesupervision, strengthen communication
11	Medicine education	General community & Healthcare workers	(1) Support frontline healthcare workers, and (2) Continue medical education	Did not specified	Support clinical screening, disseminate COVID-19-related information, patient management, COVID-19 contact tracing, and reflection	Students' learning and development	Reflection journals	Did not specify	Value of technology
13	Medical education	Did not specify	Did not specify	Did not specify	Did not specify	Did not specify	Not mentioned	Lack of common ground between supervisors and students, overmedication and emotional dependency, varying quality standard	Strengthen communication, encourage collaborative relationships with clients, and ongoing evaluations
14	Social science education	Children & Youth	(1) Provide training opportunity for students	Did not specified	Clinical assessment (ASQ), and reflection	Influence on learning effectiveness and identify area of improvement	Perception of importance of transdisciplinary practices and developmental screening, development of professional disposition, interest in working with young children, making a positive contribution to the community, and qualitative feedback	Lack of physical contact	Flexibility
17	Public health education	General community	(1) Provide opportunity for students to learn, and (2) Offer human capital for community	Course attendees	Disseminate COVID-19-related information	Did not specify	Did not specify	Did not specify	Did not specify

(*continued on next page*)

Table 2 (*continued*)

#	Discipline	Target Community	Rationale	Recruitment	Program Content	Outcome of interest	Measurement (s) adopted	Challenges reported	Implications
			partners to address unmet needs						
23	Medical education	Elderly	(1) Alleviate social isolation in elderly; and (2) Provide learning opportunity for students	Course attendees	Telehealth services to support elderly emotionally, reflection, debriefing	Influence on learning effectiveness	Student reflections	Did not specify	Value of virtual SL
26	Medical education	Clinical patients	(1) Provide resources for patients, and (2) Provide learning opportunity for students	Course attendees	Tele-assessment & referral, disseminate COVID-19-related information, create outreach protocol, supervision	Meet the needs of community	Quantitative indicators (number of calls, surveys, patents, and referrals)	Did not specify	Value of telemedical support, value of virtual SL
28	Medical education	General community, faculty & students	(1) Provide students with learning opportunity, (2) To accommodate community needs	Course attendees	Reflection, disseminate COVID-19-related information, tele-medicine, procuring medical protective supplies for frontline healthcare workers	Students' learning and development	Qualitative feedback, and quantitative indicators (number of views, masks, care packages, patient reached, and amount of fund raised)	Lack of direct contact	Value of technology
29	Medical education	General community, faculty & students	(1) Support the healthcare system, and (2) Provide learning opportunity for students	Course attendees	Supervision, reflection	Meet the needs of community	Students' reflections, quantitative indicators (number of hours), weekly surveys		Value of technology, value of virtual SL
31	Did not specify	Children & Youth	Did not specified	Course attendee	Reflection, tutorial video making, hosting online learning workshop	Influence on learning effectiveness, and students' satisfaction	Youth development competences, service leadership qualities, life satisfaction, students' perception of the program and teacher performance, overall satisfaction with the course, willingness to recommend a friend take this course or to participate in a similar course	Technology, uncertainty	Value of virtual SL
34	Medical education	Clinical patients	(1) Provide learning opportunity for students, (2) Address non-clinical needs, and (3) Provide psychological support	Course attendee	Reflection	Meet the needs of community, student's learning and development	Qualitative feedback, quantitative indicators (number of patients and referrals)		Value of telemedical support
36	Medical education	Elderly	(1) Ease the burden of healthcare staff, (2) Alleviate social isolation of elderly, and (3) Provide learning opportunity for students	Course attendee	Document organization, create resident biography, decorate facilities	Meet the needs of community, student's learning and development	Qualitative survey, quantitative indicators (number of hours), students' feedback	Uncertainty, lack of feedback from clients	Value of virtual SL

one case report remarked that technology holds great potential for addressing disparities in health and socio-economic conditions (#28). In the same vein, two case reports recognized the value of providing telemedical support (#26, 34), finding that it improves patient care and could become part of the routine care that they provide to patients. Two case reports also agreed that strengthening student-supervisor communication helps better evaluate the competence and confidence of students (#8), and that it helps build a common ground for expectation management between faculty, students, and clients (#13).

4.2. Service-learning programs: evaluation case studies

4.2.1. General information of the included articles

The four evaluation case studies were from two countries. Three of these studies were conducted in the United States (#3, 14, 23). The remaining one was conducted in Hong Kong (China) (#31). With regard to the nature of participation, one of the evaluated service-learning programs was voluntary (#3), and the remaining three were course-based (#14, 23, 31). Contrary to the service-learning programs described in the nine case reports, the majority of the service-learning programs evaluated were adapted from pre-existing program designs in order to meet the COVID-19 social distancing regulations (#3, 14, 31). Only one of the evaluation case studies described a newly developed service-learning program (#23). For example, on the one hand, an institution (DePaul University) adapted their traditionally in-person service-learning annual event (Vincentian Service Day) into an online event, in order to adhere to the COVID-19 social distancing measures without compromising their efforts to address the needs in the community of Chicago (#3). On the other hand, a service-learning program was newly developed to combat the adverse consequences of social isolation due to COVID-19 among elderly persons (#23).

4.2.2. Discipline of students

Regarding academic discipline, the four evaluated service-learning programs had different target student groups. One study exclusively recruited students majoring in a social science discipline (#14), while another only involved students receiving education in medicine, medical sciences, or other health-related disciplines (#23). Unlike the aforementioned two studies, one evaluated service-learning program recruited students from multiple academic disciplines (#3). Only one evaluation case study did not disclose the disciplinary background(s) of the student service providers (#31).

4.2.3. Characteristics of the service-learning programs

First, two of the evaluated service-learning programs planned to address the needs of the children and youth population (#14, 31), one service-learning program focused on the elderly population (#23), and the remaining service-learning program targeted the general community (#3).

Second, two of the evaluated service-learning programs recruited participants from specific university courses (#23, 31), while one service-learning program launched a university-wide recruitment campaign (#3). The remaining service-learning program did not mention its recruitment method (#14).

Third, two of the service-learning programs aimed to provide alternative teaching and learning opportunities for students whose education was being affected by the COVID-19 pandemic situation (#14, 23). Two service-learning programs focused on alleviating the sense of social isolation among elderly persons (#3, 23). One of them additionally wanted to provide support to healthcare providers (#3). One evaluation case study did not mention the goal of launching the service-learning program during the pandemic (#31).

Fourth, all four evaluated programs involved reflection as a core component of the service-learning experience (i.e., arranging activities and tools in order to consolidate students' learning) (#3, 14, 23, 31). Two other components that were adopted and applied by the service-learning programs were the provision of mental health support (#3, 23) and direct services to target recipient groups (#3, 31). In one evaluated service-learning program, mental health support was provided to frontline healthcare staff by writing cards that expressed gratitude and appreciation (#3). In another service-learning program, mental health support was directed towards vulnerable groups, as student participants made emotional support calls to geriatric patients (#23). During COVID-19, opportunities to interact face-to-face were drastically limited. Therefore, in order to deliver services to target recipient groups, two service-learning programs made use of video-making activities (#3, #31). In place of face-to-face service provision, some service-learning programs involved novel activities, such as producing medical products (e.g., masks) for medical staff (#3), assisting administrative work (#3), gathering donations to help with medical initiatives (#3), conducting virtual clinical children assessments (#14), providing telehealth services (#23), and conducting supervision sessions (#23).

4.2.4. Outcome(s) of interest

All four of the evaluation case studies emphasized the unique qualities of their service-learning programs (#3, 14, 23, 31). Due to COVID-19 social distancing restrictions, many service-learning programs were running on virtual platforms. One study explored and evaluated the value and usefulness of their virtual service-learning program from various perspectives (e.g., those of students, alumni, and community members) (#3). The remaining three evaluation case studies focused on how modifications to their service-learning programs influenced the effectiveness of achieving the program objectives (#14, 23, 31). One study used the evaluation as an opportunity to identify missing elements and areas for improving the modified program (#14). One study examined students' satisfaction with the modified service-learning program design, with a specific interest on how students perceived the non-face-to-face program mode compared to the regular face-to-face program (#31). The other study aimed to evaluate students' professional skills and development (#23).

Outcomes of the evaluation research were mainly measured through quantitative surveys (#14, 31) and/or qualitative feedback from students (#3, 14, 23). Quantitative surveys were used to measure various dimensions of interest, for example, youth development competence (#31), service leadership qualities (#31), students' life satisfaction (#31), students' perception of the programs (#31), and professional development (#14). One study used students' reflection as the source of evaluation (#23), while another study used qualitative feedback in addition to quantitative service indicators, such as number of attendances to the virtual event and social media views, to evaluate the impact and reach of their program (#3).

4.2.5. Reported challenges in carrying out the programs

Two of the most frequently reported challenges in the process of conducting evaluation research were regarding technological issues (#3, 31) and the lack of interpersonal engagement (#3, 14). These two challenges corresponded to the virtual nature of service-learning programming, which demanded uninterrupted access to digital devices, technological know-hows, and a level of comfort in interacting in a virtual space through digital means (#3).

4.2.6. Implications for future programs

Recognizing the value of virtual service-learning programs was the most frequently mentioned implication, deriving from evaluations of their practices (#3, 23, 31). Specifically, one study pointed out the benefits of not being limited by participants' locations and schedules (#3), while another study highlighted the possibility of using virtual service-learning programs to reduce the costs of higher education (#31).

5. Discussion and conclusion

The spread of COVID-19 since late-2019 dramatically transformed long-standing institutional arrangements and 'normal' ways of life. The present systematic scoping review aimed to identify a set of service-learning programs that were successfully conducted from late-2019 to early-2021 of the COVID-19 era, and explore their program characteristics and experiences. Of particular interest to our scoping review was the type, context, and settings by which those particular service-learning programs were being conducted under COVID-19, and what adaptations were made to circumvent the direct and indirect challenges resulting from the spreading disease. As this study has shown, service-learning, as a multi-party collaborative educational endeavor with roots in community participation that connects and benefits all parties involved, has not been immune to the widespread impacts of COVID-19. Our findings revealed four noteworthy observations about the state, operation, and evolution (i.e., from past state and/or operation) of service-learning organizations/projects under the 'New Normal'.

First, the systematic scoping review revealed that most scholars/practitioners of service-learning optioned to document and share aspects of their projects in the publishable form of case reports, instead of evaluation case studies. Only four of the 13 selected articles for review were evaluation case studies. One possible explanation for the preference of case reports over evaluation case studies is that most service-learning organizations/projects were underprepared to conduct thorough evaluations at the time of implementation. Many of the reviewed studies mentioned that the usual way of practice was not feasible under the enforced COVID-19 social distancing restrictions and that modifications were thus required. With the format of services altered, it is understandable that more time and resources (e.g., manpower and infrastructure) may be needed to match and develop a rigorous evaluation research design. In view of this, increasing institutional support for practicing service-learning *and* evaluating such practices, with conditions of expediency in the event of disasters/crises, may be advantageous. An arrangement of this sort would not only assist universities fulfill their social obligations to communities they reside in, but it would also demonstrate research excellence and dedication to empirically-supported pedagogical practices for ensuring quality student learning experiences. To be clear, institutional support for evaluation of service-learning programs is well represented among universities that encourage this model of experiential learning and community engagement. However, this arrangement is generally established in times of stability and normality. The results of this study suggest that it is important to consider how institutional support can be maintained in times of crises, in order to best avert future scenarios of underprepared program evaluations.

Second, in connection to the above, it was found that case reports and evaluation case studies differed in their focus and coverage of content in relation to the service-learning project, COVID-19's impact on the project, and modifications made to the program under the 'New Normal'. In comparison to evaluation case studies, reviewed case reports featured extensive content on pre- and during-COVID-19 programmatic elements, greater context regarding the impact of COVID-19 on their project, and more justifications for the modifications and/or new strategies employed to conduct service-learning. Evaluation case studies, on the contrary, focused more on program qualities, stages of the research process (e.g., sampling, data collection, and analysis), and data-informed implications. While each format has its own value and significance, for example, with case reports being contextually rich for program replication and evaluation case studies offering reassurance regarding which programmatic elements matter, researchers should try to publish both case reports and program evaluations (as separate pieces or a single manuscript).

Third, a key trend observed in the reviewed body of literature was the rise in adoption of virtual platforms and tele-communications to support interactivity. At different points from late-2019 to early-2021, many on-campus and community activities across various countries were put on halt, due to abrupt and temporary lockdown policies to prevent the spread of the virus. With diminished opportunities to communicate and provide services face-to-face or on-site, ICT served as an invaluable backbone for modified service-learning projects. Based on the findings, ICT was strategically used to facilitate service delivery, feedback, and supervision. The resulting experience, often described as being 'virtual service-learning', emerged as a significant implication in a number of the reviewed studies, generally suggesting that meaningful service delivery and student learning outcomes could be achieved despite limited face-to-face contact. For example, described by Elengickal and colleagues (2021), students of the Information Services Initiative disseminated COVID-19-related information via their website and social media, utilized their new telemedicine skills and related devices to serve senior citizens, and assisted with procuring medical supplies for frontline workers. In order to successfully complete the 'Pandemic Medicine Elective' course, apart from completing service-learning hours, attending virtual classes, and being part of the 'Student Initiatives', students had to complete a reflection paper "to share their experiences during the course and describe the impact the elective had on their perspective as future physicians" (p. 845). Importantly, as the evidence suggests that ICT can be strategically and functionally adopted in instances of adapting service-learning projects to the COVID-19 pandemic (* * Archie-Booker et al., 2020; Doody et al., 2020; Lin and Shek, 2021; Salter et al., 2020; Tian and Noel, 2020) as well as to support newly developed projects during the pandemic (* * Bickerton et al., 2020; * * Elengickal et al., 2021; * * Ferguson et al., 2021; Grilo et al., 2021; Lewis and Strano-Paul, 2021; Solá and Marquez, 2020; Tsima et al., 2020), practitioners may consider harnessing the potential of ICT in service-learning regardless of the presence of disasters/crises. For example, a hybrid mode may be adopted to provide students with greater flexibility and autonomy in choosing how they want to be part of service-learning activities. It is important to note, however, that the dependency on ICT to support service-learning programs also introduced challenges for all stakeholders involved. As not all participants had the same level of competencies to operate digital devices (i.e., the 'know-hows'), comfort in interacting in a virtual space and/or through distant communication methods, and/or uninterrupted access to devices and virtual space(s) (Tian and Noel, 2020), some of the reviewed studies raised the concern that ICT-mediated communication might have negatively affected the quality of interpersonal engagement, resulting in lack of feedback from clients (* * Ferguson et al., 2021) or fatigue from having to deal with long email chains (Salter et al., 2020). Also, in interaction with the general troubles of organizing activities under COVID-19 (e.g., spontaneous adaptations and uncertainties due to rapidly changing policies/rules), ICT dependency resulted in difficulties of, for example, ensuring quality placement experiences (Lalloo et al., 2021) and/or adequate preparedness of staff to effectively execute ICT-mediated supervision (Salter et al., 2020). Further research and program design are needed to fully unpack the potential of ICT in service-learning.

Finally, similar to other studies on service-learning in the context of a disaster or health crisis, most of the literature reviewed focused on public health responses to COVID-19. According to the selected articles, in both case reports and evaluation case studies, medical or health sciences related students were primarily recruited as participants. Moreover, the described recruitment practices were responsive and flexible, with voluntary pathways to participation opened in lieu of (pre-COVID-19) strictly course-based recruitment (e.g., * * Bickerton et al., 2020). These findings correspond with the nature and gravity of the COVID-19 pandemic, which generally has been unrelenting in its pressure on healthcare systems worldwide. In this regard, Glauberman et al., 2019 have recommended the use of service-learning among universities as a means to boost disaster-affected communities' surge capacity, or "the ability of a community or system to expand care capacity to meet increased health service needs" (p. 40). Similar to experiences elsewhere

(e.g., Downes et al., 2007; Glauberman et al., 2019), increasing stress on the healthcare system provides a firm basis for readily establishing partnerships between universities and hospitals, government bodies, non-governmental organizations, and other community groups grappling with the adverse consequences of the disaster or health crisis. In such arrangements, moreover, participating students gain disaster-related and trauma-informed competencies from real world exposure and unique contexts for application of knowledge and skills (Glauberman et al., 2019). While the disaster or health crisis context provides a straightforward pathway for medical, nursing, and health science related students, however, among the articles reviewed here, there is limited guidance regarding how non-health-related students and faculties (e.g., the social sciences, humanities, or education) can directly assist with disaster or health crisis response efforts, without overburdening community organizations in the community-academic partnership. To be clear, there is evidence of service-learning programs that recruited non-health-related students to directly and meaningfully respond to community needs in times of crisis (e.g., see Evans-Cowley, 2006 or Goffnett et al., 2013). Also, the present scoping review did include and analyze service-learning programs that did not exclusively recruit students of health-related majors (e.g., Doody et al., 2020; Tian and Noel, 2020). Yet, considering the results, it is nonetheless encouraged that service-learning scholar-practitioners who work with non-health-related students consider disseminating best practices or frameworks for effective community-academic partnerships in times of a disaster or health crisis. An appropriate example in this regard is a recently published evaluation study of an Extreme Service-Learning course (i.e., service-learning with teaching and service delivery components facilitated through online means) (XE-SL) implemented in Hong Kong during the pandemic (Wong and Lau, 2023). Due to anti-pandemic measures that limited face-to-face interactions, the XE-SL course, which recruited non-health-related students, adopted synchronous (e.g., WhatsApp and Zoom) and asynchronous (e.g., Email and Google Drive) communication platforms to facilitate service preparation, communication with stakeholders, teaching and learning, and service delivery between students (formed into different 'virtual teams'), community partners, service recipients, and the instructor (Wong and Lau, 2023). In comparison to students who participated in traditional in-person service-learning before COVID-19, students in the XE-SL course reported experiencing more developmental benefits, higher levels of self-performance, and greater satisfaction with the service-learning activity (Wong and Lau, 2023). Based on analyzing qualitative data collected from the students' reflective journal entries, post-activity interviews, and final project reports, the researchers attributed the XE-SL program's effectiveness to the following best practices: (1) have adequate experience with online teaching and learning activities, (2) have sufficient preparation time to work with the community partner, (3) work with a community partner that is committed to the planned service-learning activity, and (4) leverage the advantages of communication platforms for facilitating reflection sessions promptly after service, delivering quick feedback and response to students, and maintaining smooth communication with all parties involved (Wong and Lau, 2023, see p.10 for more details).

In conclusion, as universities globally come to terms with having to balance obligations to their locales (and their social, economic, and cultural expectations or concerns) and their traditional role to scholarship, student learning, and the international community (Bond and Paterson, 2005), service-learning as a flexible, experiential pedagogy has grown in popularity as a viable solution. Although underrepresented in the larger body of scholarship, service-learning in the context of a crisis, such as during the first several months of the COVID-19 pandemic, has proven itself to be an effective responsive pedagogy with potential to boost a community's surge capacity and disaster preparedness. Despite the added challenges to implementing and maintaining community-academic partnerships in heightened states of flux and uncertainty, universities ought to consider natural or manmade disasters as:

"open invitations … to determine the greater meaning and purpose of life and an opportunity to ask and reflect upon the more difficult questions around how other cultures and the least privileged in society are treated and the role of education in addressing those questions." (O'Steen and Perry, 2012, p.173).

Service-learning can be a way for researchers and the university as a whole to bridge (sub-)national communities' needs and priorities (e.g., supporting overburdened hospitals and public health education) with their commitment to scholarship and teaching excellence (e.g., providing students the opportunity to apply content knowledge in real world settings and meaningfully reflect on it), in a framework that respects and empowers embattled government and non-governmental entities encountering (imminent) disasters/crises (Downes et al., 2007; Glauberman et al., 2019). If anything, the world-wide pandemic brought clarity to the 'dual' value of service-learning – a pedagogy that not only promotes universities' commitment to social and economic objectives, but also socio-cultural and public health 'community development-based' objectives.

A key limitation of this scoping review is the small pool of articles, which resulted from our title and abstract screening and full-text reviews of articles published between late-2019 and early-2021. Due to our parameters, it is possible that we may have potentially excluded salient studies that would be published after early-2021. Future researchers are encouraged to follow-up with their own scoping reviews by including articles that have been published since early-2021. Also, as by no means all service-learning program activities are documented and analyzed in published articles or reports, future researchers may consider surveying service-learning providers (and partner organizations) to explore what programs they ran and how their experiences were. This approach effectively widens the scope of available data and affords the researcher with a better understanding of the nature and experiences of service-learning programs conducted during the COVID-19 era.

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No potential conflict of interest was reported by the authors.

CRediT authorship contribution statement

Paul Vinod Khiatani: Conceptualization, Data extraction, Writing – original draft preparation, Writing – review & editing. **Minnie Heep Ching She**: Data extraction, Formal analysis, Writing – original draft preparation. **Oriana Yi Yin Ho**: Methodology, Data extraction, Data curation, Writing – original draft preparation. **Jacky Ka Kei Liu**: Conceptualization, Data extraction, Writing – original draft preparation.

Conflict of Interest

The authors have no conflict to report.

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