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From the Editor...

Shannon O. Brooks

As the *Journal of Higher Education Outreach and Engagement* publishes the fourth and final issue of 2024, our editorial team is reflecting on a productive year of supporting quality, peer-reviewed community engagement scholarship. This year, the journal published three regular issues and a special issue—28(3)—with the theme of "Community-Engaged Scholars, Practitioners and Boundary Spanners: Identity, Well-Being, and Career Development." Across our four issues, the journal has been privileged to work with 176 authors from diverse countries, communities, and institutional contexts, truly making the journal a global enterprise.

Research Articles featured in this issue present various approaches for understanding service-learning's impact on student learning, evaluations of programs in underserved rural communities, and new practices for promoting community dialogue. Leading off, Ngai et al.'s development of the Process and Outcomes From Service-Learning (POSL) questionnaire is an important contribution to the literature on service-learning's impact on student learning. An ongoing weakness in service-learning research is the continued reliance on the single case study or class experience in research studies. POSL addresses the need for reliable and validated measures for conducting service-learning research. This represents a next step in developing validated tools that can be deployed across institutional and cultural contexts and addresses a serious research gap in the service-learning field.

Page et al. add another dimension to understanding the impact of service-learning through a study in a school-based setting in Stellenbosch, South Africa. "Positive Youth Development Service-Learning Opportunity for University Students" examines participants in the LifeMatters train-the-trainer (TTT) workshop, a program designed to train youth facilitators in the positive youth development approach. In this study, the authors employ a mixed-methods approach consisting of surveys and post-implementation focus groups to examine the way participation in this TTT effected psychology and sports science university students' self-efficacy, self-esteem, and personal growth as they work with adolescents in a school setting. This study has transferable lessons and implications for training university students to work with youth-serving organizations.

Harvey et al.'s evaluation for Oklahoma State University's Rural Scholars Program reveals key lessons from both student participants and community mentors involved in a program that places students into rural communities to conduct research overseen by faculty mentors. Findings indicate that students developed a greater appreciation and understanding of issues facing rural communities, and rural residents and community members found value in the research projects students led in host communities.

Finally, the City Symposium is a public dialogue series focused on health equity topics developed through a partnership between university and community organizations in London, Ontario, Canada. The City Symposium used strategies designed to improve the communication and application of academic knowledge in communities, while also learning from and respecting community members' lived experience. Wathen et al. combined surveys and interviews in a mixed-methods study investigating the impact of these symposiums. This study provides models for scholars seeking more effective ways to address broader impacts as well as presenting positive strategies for communicating about research with communities in mutually beneficial ways.

In the journal's **Project with Promise** section, authors present early to mid-stage studies on a wide variety of engaged work in different contexts, investigating both promising practices and early evidence for impact. In "School Engagement Projects as Authentic, Community-Based Learning for STEM Undergraduates," McClure et al. ana-

lyze an evaluation of education-related capstone projects at Queen University Belfast's School of Biological Sciences in collaboration with local schools. The outcomes of school engagement projects on both students and teachers were explored through focus groups that resulted in five themes that can inform future development of education-focused capstone experiences, particularly for STEM students.

Next, Fertman and De Los Santos Upton delve into the concept of *nepantla* identities as a way of understanding and interpreting the experiences of undergraduate students involved in community-engaged learning courses at the University of Texas at El Paso. As a university on the border between the United States and Mexico, the authors posit that the framework of nepantla can help instructors better understand and support the intersectional identities of their students. This study also provides strong evidence for the positive impact of community-engaged courses on UTEP students and the need to expand these course offerings.

Our final two Project with Promise articles delve into the impact of community-university partnerships in different settings and disciplines. Minnick et al.'s longitudinal study examines the impact of a strategic community-academic partnership focused on substance misuse. This study provides an example of ways other campuses and communities can replicate this partnership model for addressing critical issues such as substance misuse and other intractable problems facing communities. Wrapping up this section, Qutieshat et al. examine the initial impact and lessons learned from a partnership between Oman Dental College and agencies in Zanzibar to address dental decay, the importance of sustained oral-hygiene preventative measures, as well as the impact of involvement on dental students' preparation for practice.

Reflective Essays offer a space for scholars to explore new ideas, frameworks, theories, and research areas that may shape the community engagement field in the future. Often, these essays ask us to think about topics common to our work but in new ways. This approach is evident in our first reflective essay which explores justice-oriented collaboration using a blend of community-based participatory research (CPBR) and research-practice partnership (RPP) approaches in a long-term school-university partnership. Through this work, Renick et al., developed five relational principles to build a sustainable and equitable relationship with Title 1 school stakeholders. These relational principles provide social justice-inspired values as a framework for bridging CBPR and RPP practices.

Wrapping up our issue, our last essay presents results from a roundtable discussion hosted by the Pacific Institute on Pathogens, Pandemics, and Society (PIPPS) based at Simon Fraser University (SFU) that was focused on understanding the impact of COVID-19 on scholars conducting community-engaged research. Purewal et al. summarize important themes from this discussion and potential interventions to prevent the disruption of community-engaged research during future public health or other global crises.

On behalf of the editorial team at JHEOE, we thank the editorial board members, associate editors, reviewers, and scholars who contribute to the vibrancy of the journal and are part of the diverse community that make our quarterly publishing process possible. We invite you, dear reader, to become part of this community in the years to come.

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The Development and Validation of the Process and Outcomes From Service-Learning (POSL) Questionnaire

Grace Ngai, Kam-Por Kwan, Ka Hing Lau, Stephen C. F. Chan, Kenneth W. K. Lo, Shuheng Lin, and Rina Marie Camus

Abstract

This article reports the development and validation of the new Process and Outcomes from Service-Learning (POSL) questionnaire, a self-report measure that assesses students' service-learning experiences as well as their attainment of a comprehensive set of intended service-learning outcomes. The study involved three phases: (a) construct identification and item generation, (b) content and face validation of the draft items through expert judgment and cognitive interviews, and (c) construct validation through exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and reliability analysis. The final instrument consists of two parts. Part 1 comprises 18 items that measure students' service-learning experiences on six dimensions. Part 2 contains 14 items to assess students' learning outcomes from service-learning grouped under four dimensions. Results show that POSL is a highly reliable and reasonably valid measure of students' experiences of and outcomes from service-learning with good psychometric properties. Limitations and implications of the study are also discussed.

Keywords: service-learning, learning outcomes, students' experience, instrument development, scale validation

Service-learning is an experiential pedagogy that allows students to learn from and reflect on service activities that respond to identified community needs through a course-based educational experience (Bringle & Hatcher, 1995; Ramsay, 2017). It has been widely adopted in higher education around the world, and become a subject of research for over three decades. However, as Bringle and Hatcher (2000) pointed out, most of the studies tended to report specific findings from case studies of a single class, program, and institution "without making justified generalizations about practice, theory, and policy" (p. 73). Their observation is, in large part, still true to date. One of the main obstacles is the lack of a reliable and valid measure of students' experience and outcomes of service-learning with demonstrated good psychometric properties, making it difficult to synthesize findings across studies. Reeb and Folger (2013) thus concluded that there is a strong need for "well-validated measures in service-learning research" (p. 402). This study addresses this long-standing gap through the development and validation of a new Process and Outcomes From Service-Learning (POSL) questionnaire that aims to measure students' service-learning experiences as well as their attainment of a comprehensive set of intended service-learning outcomes.

In the remaining parts of the article, we will critically review existing literature on assessing students' experience and outcomes of service-learning, explain the steps we took to develop and validate the POSL questionnaire and the samples we used for the different studies, describe and discuss the main findings and their implications, and explicate on the limitations of the study.

Assessing Service-Learning Outcomes

Steinke and Fitch (2007) argued that quality assessment of service-learning is important because it provides opportunities to demonstrate the powerful impact of this pedagogy on student learning, stimulates dialogue about its potential for improving the quality of undergraduate education, provides feedback to improve the quality of service-learning provisions, and encourages faculty to engage in scholarly service-learning assessment and research.

There is no dearth of research on the impact of service-learning on student learning outcomes (e.g., Astin et al., 2000; Celio et al., 2011; Chan & Ngai, 2014; Chan et al., 2019; Conway et al., 2009; Lau & Snell, 2021; Yorio & Ye, 2012); most researchers have reported significant positive effects on students' learning. However, many existing studies were case studies of a single course, program, or institution (Bringle & Hatcher, 2000). They tended to employ different dependent measures and operationalize service-learning outcomes in many different ways (Toncar et al., 2006), often using instruments created by the faculty themselves (Steinke & Fitch, 2007). There is a lack of a measure that can assess, in a reliable and valid manner, the impact of service-learning on a comprehensive set of learning outcomes relevant to service-learning and that can be implemented across courses, programs, institutions, and regions.

Jacoby (2015) outlined several methods to assess service-learning, encompassing achievement testing, direct assessment of student work, surveys, interviews, focus groups, observations, and more. She highlighted that the most comprehensive approach involves assessing portfolios of student work and reflective outputs. Nevertheless, this method is more appropriate for assessing individual students, courses, or programs, as it is heavily course- or program-specific and demands considerable time for grading. Therefore, it is less suitable for making comparisons across different courses, programs, or institutions.

A number of standardized scales have been developed to assess some of the effects of service-learning, for example, the Common Outcome Measurement (Ma et al., 2019) and the Service-Learning Outcomes Measurement Scale (Snell & Lau, 2020). Both purport to measure students' service-learning outcomes by the changes in their pre-post scores before and after service-learning. Although this approach is considered more rigorous for academic research purposes, it is more prone to response-shift bias (Howard, 1980) and burdensome in administration, as it requires match-paired data collected both before and after the service-learning experience.

Our review of the literature has identified only one rigorously validated instrument that can be used to assess students' service-learning outcomes in a posttest-only design, the Service Learning Benefit (SELEB) scale developed by Toncar et al. (2006). Its final version consists of 12 items on a 7-point Likert scale to measure 12 students' learning benefits under four broad categories: (a) practical skills, (b) citizenship, (c) personal responsibility, and (d) interpersonal skills. However, the instrument has a number of limitations. First, some SELEB items are very broad and generic, covering a wide range of knowledge and skills. For example, "Workplace Skills" is a composite skill, comprising multiple skills such as interpersonal skills, organizational skills, and problem-solving skills. It is therefore hard to discern which outcomes the students are specifically rating when they respond to this item. Second, SELEB focuses on practical and interpersonal skills, as well as citizenship and personal responsibility. It does not measure any intellectual or academic learning that is a key service-learning objective (e.g., Felten & Clayton, 2011). Lastly, it asks students to rate how important each item on the list of knowledge or skills is to them in their educational experience, or how well their class project has provided them with the educational experience, but not how much they have learned with respect to each of the potential service-learning outcomes, which should be the focus of the measure.

Assessing Service-Learning Processes

Research has shown that the impact of service-learning on students is not automatic but, rather, largely determined by their service-learning experience (Billig, 2007; Chan et al., 2019). To ensure achievement of the intended impacts, Melchior and Bailis (2002) that we "look carefully at the quality of the experience we offer young people and . . . pay more attention to program design and implementation (inputs) in our research as well as to outcomes" (p. 219).

However, despite the growing body of research on outcomes of service-learning, research on its process is relatively scant. Only a few studies (e.g., Billig et al., 2005; Moely & Ilustre, 2014; Ngai et al., 2018) have empirically looked into students' experiences of service-learning and how they impact student outcomes. One possible reason for this paucity of research is the lack of a validated instrument with good psychometric properties for assessing students' service-learning experiences regarding a comprehensive set of process variables that are critical to achieving the intended outcomes.

Thus far, we have been able to identify one relevant instrument with demonstrated reliability to assess students' service-learning experience: the Service-Learning Course Quality Scale developed by Furco and Moely (2006; cf. Moely & Ilustre, 2013). However, the scale focused on only three dimensions of students' service-learning experience: value of service, focus on service, and opportunities for reflection. Students' experiences regarding other process variables critical to success in service-learning are not included. Furthermore, although there is evidence of reliability (internal consistency) of the scale, its validity is yet to be demonstrated. It should be also noted that the scale was validated in the United States; therefore, its suitability for other contexts and cultures is still open to question.

Study Objectives

This study aimed to address the abovementioned research gap by developing and validating a new Process and Outcomes From Service-Learning (POSL) questionnaire, a self-report measure that can be used to assess students' service-learning experiences as well as their attainment of a comprehensive set of intended service-learning outcomes in a reliable, valid, and easy-to-use manner.

Development and Validation of the POSL Questionnaire

We broadly follow the steps recommended by Boateng et al. (2018) in developing and validating the POSL questionnaire: domain identification, item generation, content and face validation, cognitive pretesting, construct validation, and reliability testing. This study was approved by the University's Ethics Committee.

Domain Identification

The underlying dimensions and domains of the potential outcomes of service-learning and the key process factors that affect their attainment are identified based on an extensive literature review.

For the process component, the literature review encompassed the following areas: (a) good practices for service-learning (e.g., Billig, 2007; Eyler et al., 1996; Imperial et al., 2007; National Youth Leadership Council, 2008); (b) key elements leading to successful service projects (e.g., Eyler & Giles, 1997; Preradovic & Stark, 2019; Snell & Lau, 2022; Wade, 1997; Youth Service California, 2006); and (c) evidence-based studies revealing critical factors differentiating good service projects (e.g., Astin et al., 2000; Billig et al., 2005; Hatcher et al., 2004; Mabry, 1998; Ngai et al., 2018). Nine dimensions of student experiences critical to achieving the intended service-learning outcomes were identified and conceptualized: (1) project duration and intensity, (2) linking service to curriculum, (3) meaningful service, (4) students' voice, (5) exposure to diversity, (6) reflection activity, (7) preparation and support, (8) instructor commitment, and (9) team dynamics.

For the outcomes component, we primarily adopted the framework established during the development of the Service-Learning Outcomes Measurement Scale (Snell & Lau, 2020). This scale consists of 56 items designed to assess a range of student service-learning outcomes across 11 domains: knowledge application, creative problem-solving, relationship and teamwork skills, self-reflection skills, critical thinking skills, community commitment and understanding, caring and respect, sense of social responsibility, self-efficacy, self-understanding, and commitment to self-improvement. For the purposes of this study, we categorized these 11 domains into four major dimensions: intellectual, social, civic, and intrapersonal outcomes.

Item Generation

To measure the nine dimensions identified for the process component of POSL, the research team generated 27 items (Table 1) such that each dimension is covered with two to seven items. For all items except Item 1, respondents were asked to rate their level of agreement with the statement on a 10-point Likert scale with 1 as *strongly disagree* and 10 as *strongly agree*.

For Item 1, respondents were asked to indicate the number of hours they put into their service projects, with the choices "below 20 hours," "21 to 40 hours," "41 to 60 hours," "61 to 80 hours," "81 to 100 hours," and "over 100 hours."

The choice of a 10-point scale was made following recommendations from previous work (Preston & Colman, 2000) which found that 10-point scales were more reliable and valid than scales with 5 or fewer response categories, and that they are most preferred by respondents, as it allows them to express their views with adequate nuance.

For the outcomes component, the research team generated one item for each dimension, resulting in a total of 14 items (Table 2). For each of the items, respondents were asked to rate the extent to which the service-learning course/program has increased or improved that particular outcome on a 10-point Likert scale, with 1 as *very little* and 10 as *very much*.

Content Validation Study

To establish validity and internal consistency, the draft POSL questionnaire was put through a series of validation studies. The first was a content validation study to establish its face and content validity, which ensures that elements of the scale are relevant to and representative of the target construct (Haynes et al., 1995). This content validation study adopted the three-stage approach recommended by Almanasreh et al. (2019), consisting of the development stage through literature review; the judgment-quantifying stage, which involves a review panel of experts; and the revision and reconstruction/reformation stage in which individual items are retained, revised, omitted, or added.

Participants and Procedure

We adhered to the guidelines outlined by Grant and Davis (1997) to carefully assemble the panel of experts. To ensure a diverse and qualified panel, we extended invitations to 12 seasoned practitioners and researchers in the field of service-learning to participate in the study. These individuals were chosen from various academic disciplines, institutions, and genders, and possessed local and/or international service-learning backgrounds. Among the 12 panel members, nine were female. Eleven members came from five different universities in Hong Kong, and one member hailed from a university in Singapore. Eight of the panelists possessed over 10 years of service-learning experience, and four had prior involvement in organizing international service-learning initiatives. Table 3 provides an overview of their demographic backgrounds.

The panelists were informed clearly about the study's objective and instructions. They were invited to rate the relevance of each of the proposed items for assessing the underlying dimensions of the service-learning process and outcomes on a 4-point scale (1 = *not relevant at all*, 4 = *highly relevant*). Moreover, they were asked to provide open-ended comments on, and suggest any other crucial dimensions of, any process or outcome of service-learning that had not been incorporated in the proposed items.

Data Analysis

Qualitative and quantitative analyses were conducted on the panelists' responses. The content validity index (CVI; Polit et al., 2007) was derived as the proportion of panelists who rated the item as 3 or 4, and calculated at both item (CVI-I) and scale (CVI-S) levels, with CVI-S as the arithmetic mean of the CVI-Is across all items under each component. The criterion of .78 was adopted at both item and scale level (Lynn, 1986). The panelists' comments and suggestions were also reviewed by the research team, and modifications and changes were made to the draft items as appropriate. New or amended items were sent to the panelists for a second round of review if needed.

Results

Table 1 shows the item- and scale-level content validity index values for the process component of the POSL questionnaire. The CVI-S value was .84. Nineteen out of the 27 draft items obtained a CVI-I value of .83 or above and were therefore retained. The other eight items have CVI-I values below the .78 threshold. They were discussed and reviewed by the research team, taking into consideration the CVI-I values, relevance of the comments and suggestions of the panelists, and importance of the dimensions as revealed in previous research. Item 1 (number of hours) was retained, as it was seen to be a useful absolute quantifying complement to Item 2 (worked hard). Item 10 (interest) was retained, as previous work has suggested that student interest is an important correlator of learning outcome. Item 14 was retained as a mea-

Table 1. Content Validation Study Results for the Process Component of the Draft POSL Questionnaire

Dimensions	No.	Draft items	First CVS[1]		Second CVS[1]	
			CVI-I[1]	Result	CVI-I[1]	Result
Project duration and intensity	1	How many hours did you spend in planning and delivering the service project?	.75	Retained		
	2	I worked hard for the service project.	.83	Retained		
Linking service to curriculum	3	The goals and objectives of the service-learning course/programme were clear to me.	1.0	Retained		
	4	I can see the connection between the service project and the course/programme goals.	1.0	Retained		
	5	The service project required me to apply course content in service planning and delivery.	.92	Retained		
Meaningful service	6	I had many opportunities to interact with the community/service recipients during the service project.	.92	Retained		
	7	I feel that our service was valuable for the community.	.83	Retained		
	8	I feel that our service benefitted the people we served.	.83	Retained		
	9	The service project was challenging.	.67	Revised[2]	1.0	Retained
	10	The service project was interesting to me.	.67	Retained		
	11	The service project gave me a chance to try something new.	.58	Dropped		
	12	The service project required me to apply higher-order thinking skills (e.g., problem-solving, creative thinking).	.83	Retained		
Students' voice	13	The service project merely required me to follow instructions.	.50	Dropped		
	14	I had some say in the design and delivery of the service project.	.75	Retained		
Exposure to diversity	15	The service project enabled me to interact with people from different backgrounds (e.g., socio-economic status, occupations, or culture).	1.0	Retained		
	16	The service project exposed me to different views and perspectives.	1.0	Retained		

Table continued on next page

Table 1. Continued

Dimensions	No.	Draft items	First CVS[1]		Second CVS[1]	
			CVI-I[1]	Result	CVI-I[1]	Result
Reflection activity	17	I was required to reflect regularly during the service project.	1.0	Retained		
	18	I received clear instructions and guidance to reflect on my service experience.	1.0	Retained		
	19	The reflection helped me to re-examine my assumptions and values.	1.0	Retained		
Preparation & support	20	I was well-prepared for the service (e.g., through orientation, briefing, training).	.83	Retained		
	21	I received the support I needed to carry out the service project.	.83	Retained		
Instructor commitment	22	My teachers knew what I was doing in the service project.	.92	Retained		
	23	The teacher/teaching team (instructors, assistants) was enthusiastic about the service project.	.92	Retained		
Team dynamics	24	My service-learning teammates and I were coached to work as a team.	.83	Retained		
	25	There was enough work for everybody in my team.	.50	Dropped		
	26	Everybody in my team did their fair share of the work.	.67	Dropped		
	27	During the service project, I felt that I was part of a bigger effort contributing to the common good.	1.0	Retained		
Feedback (new item)	28	I received regular feedback on my performance during the service project.	N/A		1.0	Retained
		CVI-S[1,3]	**.84**		**.90**	

[1] CVS = Content validity study; CVI-I = Item-level content validity index; CVI-S = Scale-level content validity index.
[2] “Revised” refers to item being retained by revising the wording.
[3] CVI-S for the first CVS was derived by averaging the CVI-Is from all 27 items in first CVS; the CVI-S for the second CVS was derived by averaging the CVI-Is from the items retained in the first CVS and the items tested in the second CVS, totaling 24 items.

Table 2. Content Validation Study Results for the Outcomes Component of the Draft POSL Questionnaire

Dimensions	No.	Draft items	First CVS[1]	
			CVI-I[1]	Result
Intellectual	1	ability to apply the knowledge and skills learned in school to real-life situations	.92	Retained
Intellectual	2	ability to solve problems	1.00	Retained
Intellectual	3	ability to think creatively	.92	Retained
Social	4	ability to establish and maintain good relationships with other people	1.00	Retained
Social	5	ability to work with others in a team to achieve common goals	.92	Retained
Intellectual	6	ability to reflect and learn from your experiences	1.00	Retained
Intellectual	7	ability to analyse issues from multiple perspectives	1.00	Retained
Civic	8	understanding of the needs, assets and potentials of the community that you served	1.00	Retained
Social	9	respect for people with different backgrounds or perspectives	.92	Retained
Civic	10	empathy for disadvantaged people	.92	Retained
Civic	11	commitment to the betterment of society	1.00	Retained
Intrapersonal	12	self-confidence	.83	Retained
Intrapersonal	13	understanding of your own values, strengths and weaknesses	1.00	Retained
Intrapersonal	14	commitment to continued self-improvement	1.00	Retained
		CVI-S[1, 2]	.96	

[1] CVS = Content validity study; CVI-I = Item-level content validity index; CVI-S = Scale-level content validity index.
[2] CVI-S for the first CVS was derived by averaging the CVI-Is of all 14 items in the first CVS.

Table 3. Demographic Backgrounds of the Panel of Experts

Member	Gender	University affiliation	Disciplinary background	Years of SL experience	Local or international SL
1	M	HK1	Creative arts	5+	Local
2	F	HK2	Business	5+	Local
3	F	HK3	Business	10+	Local
4	M	HK1	Chinese medicine	10+	Both
5	F	HK4	English	10+	Both
6	F	HK5	Education	10+	Local
7	F	HK1	Education	5+	Local
8	F	HK4	Social work	10+	Both
9	M	HK3	Economics	5+	Local
10	F	HK3	Business	10+	Local
11	F	SG1	Sociology	15+	Both
12	F	HK5	Education	10+	Local

sure of student autonomy, which previous work has often cited as a good practice in service-learning. Conversely, Items 11 and 13 were dropped because of their extremely low CVI score. Item 13 was also redundant with the higher scoring Item 14. Items 25 and 26 were dropped for similar reasons, in addition to the concern that although most service-learning projects were conducted in teams, this was by no means true for *all* service-learning. Item 9 was revised to add the word "stimulating" in response to the concern that "challenging" had a more negative connotation, and Item 28 was added in response to panel members' comments that regular feedback is good practice in teaching and learning, but our original items did not cover that dimension. In summary, three items were retained, four items were dropped, one new item was added, and one item was revised.

The revised and new items were sent to the panel for a second round of review. All panelists rated the items favorably, resulting in CVI-I values of 1.0 for both items. Both items were therefore included in subsequent validation studies. The CVI-S value of the second-round study reached .90, suggesting that the draft process component achieves good face and content validity, with 24 items remaining in the pool.

Table 2 presents the CVI-I of the draft items of the outcomes component. The CVI-I scores for all items were above .78, with eight items at 1.0, five items at .92, and one item at .83. The comments and suggestions of the panel were reviewed and discussed, but no change was made to any of the items, and all 14 items of the draft outcomes component were retained without modification. The CVI-S value was .96, indicating that the draft outcomes component is highly face- and content-valid.

Cognitive Pretesting

The next step in the process was cognitive pretesting, which determined whether the target respondents interpret the items as intended.

Participants and Procedure

To ensure the instrument's relevance to university students, we recruited 11 undergraduate students (six female and five male) from two Hong Kong universities to participate in four sessions of semistructured group interviews. Each ses-

sion lasted around 1.5 hours, in which the participants completed both components of the draft POSL questionnaire, and elucidated item by item their comments regarding interpretation and understanding of each item, as well as any language issues, with modification suggestions.

Results

All participants from the cognitive pretesting interpreted the items in the draft POSL questionnaire as intended. The analysis and discussion by the research team on the participants' comments resulted in language revisions for clarity in seven items in the process component and two items in the outcomes component.

Construct Validation Study

The next steps in the process were a series of construct validation studies to establish the psychometric properties of the instrument, including its construct validity, criterion validity, and internal consistency.

The context in which the POSL questionnaire was developed is a bilingual environment, where English is the medium of instruction and both English and Chinese are used in everyday life. For ease of comprehension and to ensure that all respondents understood the meaning of the items correctly, a Chinese translation was developed.

Translation/back-translation was used to ensure semantic equivalence between the original (English) and translated (Chinese) items. Professional translators were employed for both forward and (blind) back translations. The back-translated version was compared with the original English version, and identified discrepancies were returned to the forward and back translators for another round of translation and comparison. In total, two rounds of translation were involved before the Chinese version was deemed equivalent to the original English version. In this process, the wording of one item in the English version of the process component was further revised.

The English and Chinese versions of the draft POSL questionnaire were then combined into a bilingual version for validation. The draft questionnaire consisted of 37 items, with 23 items for the process component and 14 items for the outcomes component (Appendix A).

Participants and Procedure

All students who were enrolled in credit-bearing service-learning courses during the Fall semester of 2021 at the three participating universities were invited to participate in the study. Toward the end of their service-learning courses, they were asked to complete the draft bilingual POSL questionnaire online, at their own time, place, and pace. The administration of the questionnaire was coordinated by the service-learning offices at each respective university. Participation in the study was completely voluntary, and participants were assured that their responses would remain confidential, with no negative consequences resulting from their involvement. In addition to the POSL items, demographic information such as gender, age, academic discipline background, and year of study was also collected. A total of 530 responses were eventually received.

Data Cleaning and Analysis

For the process component, we first cleaned the data by removing 28 cases (5.3%) in which the respondent gave the same extreme rating (1 or 10) for all items, leaving 502 cases in the final sample. Table 4 presents the demographic distributions. Exploratory factor analysis (EFA) was then used to identify the latent constructs from the measured variables manifested by the data as follows (Watkins, 2018): First, the minimum average partials (MAP) test and the scree plot were used to decide the number of factors to be extracted. Common factor analysis was used as the model and selected principal axis (PA) with oblimin rotation as the estimation method. Item reduction was then performed based on the following three criteria: (1) discarding items that loaded onto a single-item factor, (2) eliminating items with communalities below .60, and (3) removing items that loaded on more than one factor. The EFA was run under the SPSS (Version 26.0) environment; the MAP test was run with the syntax developed by O'Connor (2000).

The resultant factor model was then verified by randomly splitting the final sample into two halves. Another EFA was used to replicate the results on the first half, and the second half was examined by confirmatory factor analysis (CFA), with the resultant factor model structure. We anticipated that both analyses would yield a reliable and stable resultant model structure, which would demonstrate the construct validity of the instrument.

Table 4. Demographics of the Participants in the Construct Validation Study

	Outcomes component		Process component	
	Freq.	**%**	**Freq.**	**%**
University				
A	418	82.6	414	82.5
B	49	9.7	49	9.8
C	39	7.7	39	7.8
Gender				
Male	246	48.6	243	48.4
Female	211	41.7	210	41.8
Not disclosed	49	9.7	49	9.8
Academic discipline background				
Arts	112	22.1	111	22.1
Business	119	23.5	118	23.5
Engineering	91	18.0	90	17.9
Medical & health care	49	9.7	49	9.8
Science	109	21.5	108	21.5
Social sciences	5	1.0	5	1.0
Journalism & communication	16	3.2	16	3.2
Not disclosed	5	1.0	5	1.0
Year of Study				
1	14	2.8	14	2.8
2	43	8.5	44	8.8
3	108	21.3	106	21.1
4	276	54.5	273	54.4
5	5	1.0	5	1.0
Not disclosed	60	11.9	60	12.0
	Mean	**SD**	**Mean**	**SD**
Age	21.0 yrs	1.45 yrs	21.0 yrs	1.45 yrs

Note. Some percentages do not total 100 due to rounding.

For the CFA, EQS (Version 6.4) was used. Preliminary checking of data found that the sample violated the assumption of multivariate normality; therefore, the maximum likelihood method with robust correction was adopted, as recommended by Bentler (2006). Such correction provided the scaled chi-square (i.e., the Satorra-Bentler [S-B] χ^2) and other adjusted indices for assessing the goodness of fit indices for the models. In testing the CFA model, given that the model chi-square value tends to reject well-fitted models (Thompson, 2004), other goodness-of-fit indices, including CFI, NNFI, and RMSEA, were also employed in assessment (Tabachnick & Fidell, 2013), with the benchmarks CFI ≥ .95, NNFI ≥ .95, and RMSEA ≤ .06 (Bentler, 2006; Hu & Bentler, 1999).

For the outcomes component, data cleaning resulted in 24 cases (4.5% of 530 participants) being removed and a final sample of 506 cases. Demographics of this sample are shown also in Table 4. The final sample was then tested with CFA using the same procedure described above to establish the construct validity of the measure. It was expected that four factors would be found with the same items loaded on the respective four factors.

For establishing the internal consistency, Cronbach's alpha values were calculated for each component of the POSL questionnaire, and their constituent constructs under each component. An alpha value of .80 and above is regarded as reliable (Lance et al., 2006).

Results

Validating the process component began with examining the bivariate correlations between its 23 items. Results showed that all items are moderately to highly correlated with each other except item 1, which was hence dropped in subsequent analyses. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO = .97) and the Barlett's test of sphericity (p < .01) confirmed the factorability for the remaining 22 items. Next, the MAP test indicated that the number of factors to be extracted was two, whereas the scree plot showed three. Given that MAP tends to underextract, and that one or even two factors above or below the scree plot results would be considered (Zwick & Velicer, 1986), we examined the models with two, three, four, and five factors for a model that is meaningful and interpretable.

The EFA results suggested a five-factor solution (see Table 5) with four items removed. The remaining 18 items achieved above .65 for communalities, and above .40 for factor loadings. The solution explained over 80% of variance, which is regarded as satisfactory (Hair et al., 2018). An analysis of the factors suggested the following interpretations:

- "Reflection and Support" for Items 17, 18, 19, 20, 21, 23, 24, & 28;
- "Meaningful Service" for Items 7 & 8;
- "Exposure to Diversity" for Items 15 & 16;
- "Goals and Objectives" for Items 3, 4, & 5; and
- "Challenge and Interest" for Items 9, 10, & 12.

The model verification EFA identified five factors on the first half of the data, with an almost identical factor structure, communalities, factor loadings, and total variance explained to those obtained from the overall sample (Table 5).

For the model verification CFA on the second half of the data, we specified the initial model with the five corresponding factors loaded onto the 18 items (Figure 1). We further created two subfactors subsumed under the factor "Reflection and Support," namely "Reflective Activities" (Items 17, 18, & 19) and "Preparation and Support" (Items 20, 21, 23, 24, & 28), as they refer to two conceptually different dimensions of students' experience of service-learning. The CFA for the model indicated satisfactory model fit (S-B χ^2 = 170.89, df = 123, p < .01; NNFI = .97; CFI = .98, RMSEA = .04, confidence interval: .02, .05), with significant and high factor loadings and interfactor correlations for all items and between factors respectively (Figure 1). The factor "Reflection and Support" loaded very highly on the two subfactors (>.980), indicating that the two factors can be merged; however, we argue that they should be considered theoretically distinctive constructs that are also implemented differently in practice.

To conclude, the split-half analyses supported a five-factor (or a six-factor if reflection and support are considered two subfactors) solution model as stable and valid. The internal consistency, in terms of Cronbach's alpha values, for the process component is high (the entire scale: .97; and for its constituent factors: .92 [Goals and Objectives], .92 [Meaningful Service], .88 [Challenge and Interest], .86 [Exposure to Diversity], .95 [Reflection and Support], .89 [Reflective Activities], and .93 [Preparation and Support]).

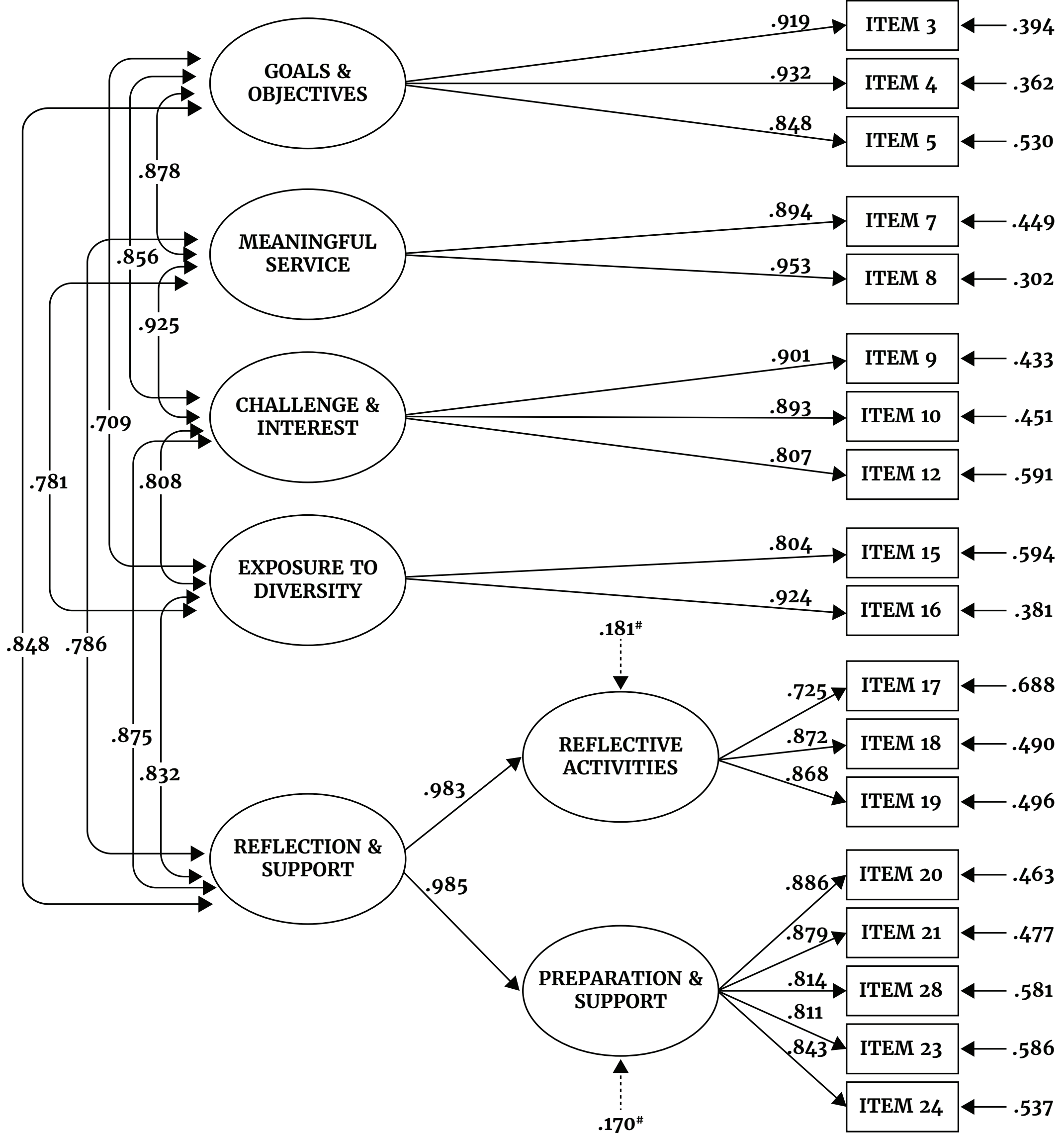
For the outcomes component, CFA was used to test the hypothesized measurement model of the instrument. Initial analysis revealed acceptable yet less than satisfactory results (S-B χ^2 = 219.51, df = 71, p < .01; NNFI = .92; CFI = .94, RMSEA = .06, confidence interval: .06, .07). To enhance the model fit, two covariance suggested by the Lagrange multiplier tests were added. They were the error covariance (.46) between Items 1 and 2 and the error covariance (.46) between Items 4 and 5. The modified model (see Figure 2) obtained satisfactory model fit (S-B χ^2 = 157.18, df = 69, p < .01; NNFI = .95; CFI = .96, RMSEA = .05, confidence interval: .04, .06). The internal consistency, measured by Cronbach's alphas, is also high (.96 for the entire outcomes component; .92, .86, .87, and .89 for the intellectual, social, civic, and intrapersonal development outcomes, respectively).

The final version of the POSL questionnaire (see Appendix B) consists of two parts. Part 1 (18 items) measures students' service-learning experiences on six dimen-

Table 5. Results of Exploratory Factor Analysis for the Process Component With Full Sample and Split-Half Sample

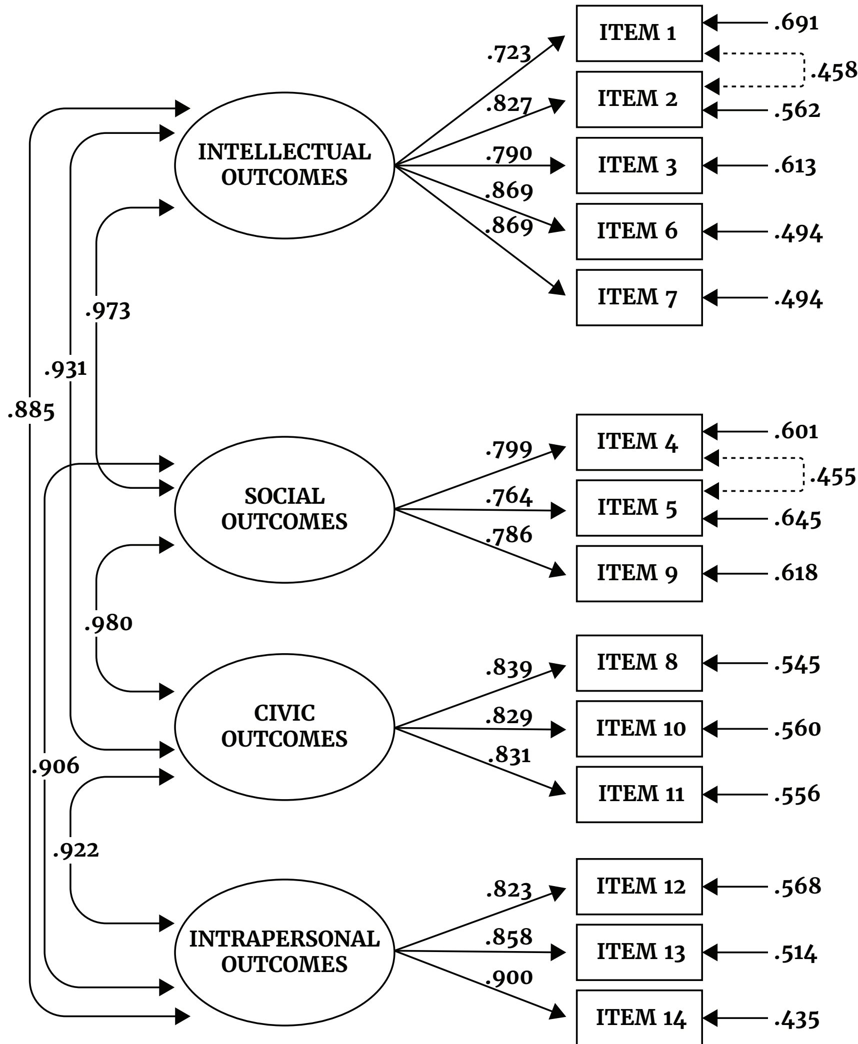
		Full sample (N = 502)						Split-half sample (N = 251)				
Total variance explained		81.8%						82.0%				
		Factor							**Factor**			
		1	**2**	**3**	**4**	**5**		**1**	**2**	**3**	**4**	**5**
Item no.	**Communalities**	**Absolute factor loading**					**Communalities**	**Absolute factor loading**				
2	Dropped						N/A					
3	.796				.795		.726				.657	
4	.910				.919		.947				.889	
5	.711				.513		.713				.471	
6	Dropped						N/A					
7	.833		.813				.834		.720			
8	.867		.838				.854		.829			
9	.688					.538	.609					.520
10	.796					.441	.811					.411
12	.666					.596	.634					.500
14	Dropped						N/A					
15	.676			.574			.680			.534		
16	.839			.633			.859			.661		
17	.611	.677					.716	.734				
18	.771	.827					.796	.767				
19	.723	.693					.721	.630				
20	.776	.879					.762	.819				
21	.778	.851					.773	.852				
28	.696	.764					.752	.772				
23	.684	.698					.704	.708				
27	Dropped						N/A					
24	.699	.786					.661	.589				

Figure 1. Results of Confirmatory Factor Analysis for the Process Component With Split-Half Sample



Note. # = loading not significant at .05 level (*n* = 251).

Figure 2. Results of Confirmatory Factor Analysis for the Outcomes Component



Note. The error covariance paths (dotted lines) were added to the finalized model.

sions: Goals and Objectives, Meaningful Service, Challenge and Interest, Exposure to Diversity, Reflective Activities, and Preparation and Support. Part 2 (14 items) assesses students' self-perceived learning gains grouped under four major dimensions: intellectual, social, civic, and intrapersonal learning outcomes. Our results show that POSL is a highly reliable and reasonably valid measure of students' experiences of and outcomes from service-learning, with good psychometric properties.

Discussion

Service-learning has been well demonstrated to be effective at nurturing a diversity of student learning outcomes in various contexts and cultures. However, to ensure and *improve* student learning from service-learning, it is important not only to understand *what* has been impacted, but also *how* these impacts have come about.

The literature includes some principles on "good practices" (Honnet & Poulsen, 1989; National Youth Leadership Council, 2008), and many of these practices are commonly accepted to be universal and followed faithfully by teachers and practitioners. However, even though it is agreed that student learning from service-learning is not automatic and needs to be facilitated, there has been little research into the processes from which students learn.

This issue becomes much more serious as service-learning gains more popularity and acceptance outside the North American context, which has hosted much of the previous work in service-learning, and where most of the guidelines and principles were developed. Stigler and Hiebert (1999) argued that teaching is a "cultural activity" and should be "understood in relation to the cultural beliefs and assumptions that surround [it]" (p. 88). Furthermore, studies have revealed culture-specific differences in teaching effectiveness (e.g., Herbert et al., 2022). In other words, the "good principles" that work for one culture may not work for another, or at the very least, they may need to be adapted to work within that context. This also applies to service-learning, and we would argue that in fact, this is particularly true for service-learning, as it involves affective learning outcomes pertaining to students' preconceptions, attitudes, and beliefs, which are often very culture and context specific. An example can be taken from previous work. One oft-cited good practice is that of "youth voice," which advocates for student autonomy and ownership—in essence, teachers are encouraged to involve students in the development and implementation of service-learning projects. This aspect was investigated in a large-scale study (Ngai et al., 2018) involving over 2,000 Hong Kong university students across a diversity of service-learning subjects from different disciplines, as an item asking students whether they carried out tasks that were mainly designed by them, rather than simply following directions. The study found that although student autonomy was a minor albeit statistically significant predictor of the intellectual learning outcomes, it was not a statistically significant predictor of the other learning outcomes. In contrast, "perceived benefits to people served" and "preparation for service," both of which are seldom mentioned as impactful factors, were found to be key determinants of student learning. We postulate that at least part of the reason behind this phenomenon lies in the different ways students learn across different cultures and educational systems. This study is just one example, but it illustrates why it is important for teachers and practitioners to study and analyze their programs, in order to better understand and improve their own practices, rather than simply taking the "accepted facts" in the literature as gospel, especially if these findings were derived from a context distinct from their own. POSL was designed to facilitate such evaluations. Furthermore, since it is standardized and validated, it enables evaluation and comparison of findings across programs, which may open the door to other emerging competencies or impactful processes.

The design of POSL takes into consideration ease of administration. POSL is intentionally designed to be a postexperience-only measure, which, though not considered quite as rigorous for research purposes, is easier to administer and more sensitive to changes, especially for student affective and attitudinal learning. It can therefore be easily used by individual teachers or practitioners, even without sophisticated statistical analysis or processing. That said, our study shows that POSL is a reliable and valid measure of students' service-learning experience and outcomes. We therefore recommend its use by individual teachers and practitioners to assess and improve their programs or courses, for institutions to monitor and ensure quality, and for researchers to study and compare the impacts of different service-learning programs, pedagogical practices, or background contexts.

Our results indicate that the major constructs for students' service experience and learning outcomes confirmed by the factor structure of the POSL questionnaire dovetail with previous theoretical frameworks and empirical findings. We also observe high correlations between the factors, suggesting that different types of students' learning outcomes interact with and influence each other. In practice, this correlation suggests that different characteristics of service experience for students should be considered holistically in planning and execution.

This study is subject to several limitations. First, the POSL questionnaire was designed as a self-assessment questionnaire that collects responses from the student's perspective only. Since service-learning relies on multiple stakeholders, future research should also capture perspectives from those stakeholders. Teachers' assessment on students' performance can also serve as an objective reference to further validate the outcomes component. Second, this study illustrates the relationship between students' service experience and learning outcomes, but not the underlying mechanism. Third, despite extensive literature review and rigorous validation, the POSL questionnaire may still not include all the constructs of students' service experience

and learning outcomes, in particular in contexts where service-learning is emerging and little research has been conducted. We foresee future research may result in further addition or revision to the POSL items. Finally, the POSL questionnaire was tested only in Hong Kong universities, limiting its generalizability in other contexts. More validation studies should be conducted in other geographical, educational, and cultural contexts.

Conclusion

The current study set out to respond to a long-standing research gap in service-learning—the lack of a valid and comprehensive measurement questionnaire that captures students' learning experience from service-learning alongside their learning outcomes. The resulting POSL questionnaire is backed up by extensive literature review and has been rigorously validated to establish psychometric properties, while also being easy to administer. It is hoped that wider use within the service-learning community will be conducive to comparisons and research synthesis across different programs, regions, cultures, and settings, and provide a clearer picture of student learning from service-learning.

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Appendix A. The Draft Process and Outcomes From Service-Learning (POSL) Questionnaire for Construct Validation

Process Component

Please state how much you agree with each of the following statements regarding your experience with the service-learning course/programme and service project (1= *strongly disagree*, 10 = *strongly agree*).

No.	Item
1	How much time did you spend in planning, preparing for and delivering the service project of your service-learning course/programme?
2	I worked hard for the service project.
3	The goals and objectives of the service-learning course/programme were clear to me.
4	I can see the connection between the service project and the course/programme goals.
5	The service project required me to apply course content in service planning and delivery.
6	I had many opportunities to interact with the community members/people we served during the service project.
7	I feel that our service was valuable for the community/people we served.
8	I feel that our service benefitted the community/people we served.
9	The service project was challenging and motivating.
10	The service project was interesting to me.
12	The service project required me to apply higher-order thinking skills (e.g., problem-solving, creative thinking).
14	My teacher(s) allowed us students to have some say in the design and delivery of the service project.
15	The service project enabled me to interact with people from different backgrounds (e.g., socio-economic status, occupations, or culture).
16	The service project exposed me to different views and perspectives.
17	I was required to reflect regularly during the service project.
18	I received clear instructions and guidance on how to reflect on my service experience.
19	The reflection helped me to re-examine my assumptions, values, and beliefs.
20	The teaching team (teachers, assistants) prepared me well to carry out the service (e.g., through orientation, briefing or training).
21	I received the support I needed to carry out the service project.
23	The teaching team (teachers, assistants) was enthusiastic about the service project.
24	The teaching team (teachers, assistants) coached me and my teammates to work effectively together.
27	During the service project, I felt that I was part of a bigger effort to create a better society.
28	I received regular feedback on my performance during the service project.

Outcomes Component

Please choose the appropriate score (1 = *very little*, 10 = *very much*) to indicate your learning gains from the service-learning course/programme.

To what extent do you think the service-learning course/programme increased or improved your . . .

No.	Item
1	ability to apply the knowledge and skills learned at university/in school to real-life situations
2	ability to solve problems
3	ability to think creatively
4	ability to establish and maintain good relationships with other people
5	ability to work with others in a team to achieve common goals
6	ability to reflect on and learn from your experiences
7	ability to analyse issues from multiple perspectives
8	understanding of the needs, potentials, and resources of the community that you served
9	respect for people with different backgrounds or perspectives
10	empathy for disadvantaged people
11	commitment to creating a better society
12	self-confidence
13	understanding of your own values, strengths and weaknesses
14	commitment to continued self-improvement

Appendix B. Final Version of the Process and Outcomes From Service-Learning (POSL) Questionnaire

Process Component

Please state how much you agree with each of the following statements regarding your experience with the service-learning course/programme and service project (1= *strongly disagree*, 10 = *strongly agree*).

		Strongly Disagree									Strongly Agree
Goals and objectives (α = .92)											
1	The goals and objectives of the service-learning course/programme were clear to me.	1	2	3	4	5	6	7	8	9	10
2	I can see the connection between the service project and the course/programme goals.	1	2	3	4	5	6	7	8	9	10
3	The service project required me to apply course content in service planning and delivery.	1	2	3	4	5	6	7	8	9	10
Meaningful service (α = .92)											
4	I feel that our service was valuable for the community/people we served.	1	2	3	4	5	6	7	8	9	10
5	I feel that our service benefitted the community/people we served.	1	2	3	4	5	6	7	8	9	10
Challenge and interest (α = .88)											
6	The service project was challenging and motivating.	1	2	3	4	5	6	7	8	9	10
7	The service project was interesting to me.	1	2	3	4	5	6	7	8	9	10
8	The service project required me to apply higher-order thinking skills (e.g., problem-solving, creative thinking).	1	2	3	4	5	6	7	8	9	10
Exposure to diversity (α = .86)											
9	The service project enabled me to interact with people from different backgrounds (e.g., socio-economic status, occupations, or culture).	1	2	3	4	5	6	7	8	9	10
10	The service project exposed me to different views and perspectives.	1	2	3	4	5	6	7	8	9	10
Reflective activities (α = .89)											
11	I was required to reflect regularly during the service project.	1	2	3	4	5	6	7	8	9	10
12	I received clear instructions and guidance on how to reflect on my service experience.	1	2	3	4	5	6	7	8	9	10
13	The reflection helped me to re-examine my assumptions, values, and beliefs.	1	2	3	4	5	6	7	8	9	10
Preparation and support (α = .93)											
14	The teaching team (teachers, assistants) prepared me well to carry out the service (e.g., through orientation, briefing or training).	1	2	3	4	5	6	7	8	9	10
15	I received the support I needed to carry out the service project.	1	2	3	4	5	6	7	8	9	10
16	I received regular feedback on my performance during the service project.	1	2	3	4	5	6	7	8	9	10
17	The teaching team (teachers, assistants) was enthusiastic about the service project.	1	2	3	4	5	6	7	8	9	10
18	The teaching team (teachers, assistants) coached me and my teammates to work effectively together.	1	2	3	4	5	6	7	8	9	10

Outcomes Component

Please choose the appropriate score (1 = *very little*, 10 = *very much*) to indicate your learning gains from the service-learning course/programme.

To what extent do you think the service-learning course/programme increased or improved your . . .

		Very Little									Very Much
Intellectual outcomes (α = .92)											
1	ability to apply the knowledge and skills learned at university/in school to real-life situations	1	2	3	4	5	6	7	8	9	10
2	ability to solve problems	1	2	3	4	5	6	7	8	9	10
3	ability to think creatively	1	2	3	4	5	6	7	8	9	10
4	ability to reflect on and learn from your experiences	1	2	3	4	5	6	7	8	9	10
5	ability to analyse issues from multiple perspectives	1	2	3	4	5	6	7	8	9	10
Social outcomes (α = .86)											
6	ability to establish and maintain good relationships with other people	1	2	3	4	5	6	7	8	9	10
7	ability to work with others in a team to achieve common goals	1	2	3	4	5	6	7	8	9	10
8	respect for people with different backgrounds or perspectives	1	2	3	4	5	6	7	8	9	10
Civic outcomes (α = .87)											
9	understanding of the needs, potentials, and resources of the community that you served	1	2	3	4	5	6	7	8	9	10
10	empathy for disadvantaged people	1	2	3	4	5	6	7	8	9	10
11	commitment to creating a better society	1	2	3	4	5	6	7	8	9	10
Intrapersonal outcomes (α = .89)											
12	self-confidence	1	2	3	4	5	6	7	8	9	10
13	understanding of your own values, strengths and weaknesses	1	2	3	4	5	6	7	8	9	10
14	commitment to continued self-improvement	1	2	3	4	5	6	7	8	9	10

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Positive Youth Development Service-Learning Opportunity for University Students

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Abstract

South African university students (n = 18; aged 21–28) participated in the LifeMatters train-the-trainer (TTT) workshop. Ten trained participants (n = 10; aged 21–23) then implemented the program as youth facilitators at three local schools. The study aimed to describe changes in participants resulting from the TTT and implementation experience. Mixed-methods data were collected via self-report survey instruments (ascertaining self-efficacy, self-esteem, and personal growth), training program experiential review forms, and postimplementation focus groups. Survey data were collected pre-TTT, post-TTT, postimplementation, and follow-up (one month after TTT for nonimplementers). Participants reported improvement in self-efficacy, self-esteem, and personal growth following completion of the TTT workshop and further improvements after the implementation experience. The LifeMatters TTT workshop and implementation experience promoted participants' positive youth development (PYD) factors, personal and professional development, and acquisition of mental skills. Implications of providing students with PYD training and supervised service-learning opportunities are discussed.

Keywords: psychological skills, life skills, emerging adults, college students, experiential learning

Positive youth development (PYD) is a strength-based approach to promoting positive changes in youth (Lerner et al., 2011, 2021). Capacity-building PYD training and education (Balva et al., 2022; Dvorsky et al., 2019; Li & Shek, 2019) provide for (a) improved PYD indicators/factors, (b) skill building (e.g., mental skills), and (c) personal and professional development. PYD programs aim to foster assets and competencies and improve PYD outcome factors, including self-efficacy, self-esteem, and personal growth (Catalano et al., 2019; Chen et al., 2001; Robitschek et al., 2012; Rosenberg, 1989). There is a gap in the literature regarding PYD training and supervised PYD service-learning/experiential learning opportunities for emerging adults (18–29 years) in higher education, particularly in South Africa and other low- and middle-income countries (Alvarado et al., 2017; Catalano et al., 2019; Dvorsky et al., 2019). South African universities have an essential role in fostering student engagement in educational opportunities that foster the skills and agency necessary for student development and social change (Bantjes et al., 2019; De Jager-van Straaten et al., 2016; Favish et al., 2012; Garton & Wawrzynski, 2021).

One potential opportunity is LifeMatters, a manualized evidence-based PYD program (Hanrahan, 2017) combining elements of sport psychology and cognitive behavioral theory (CBT), grounded in PYD (Lerner et al., 2011, 2021) and self-determination theory (Ryan & Deci, 2000). The program consists of 10 sessions, each session involving a synergistic mixture of physically active games, discussions, worksheets, and a thought-provoking prosocial quote. A detailed breakdown of each session has been published previously, including the mental skills taught and required materials/resources (Hanrahan, 2012; Page et al., 2022; Serra de Queiroz, 2017). The LifeMatters

train-the-trainer (TTT) workshop prepares participants to facilitate/implement the 10-session program with youth groups. The LifeMatters TTT workshop has complementary elements that contribute to PYD factors, such as self-efficacy, self-esteem, and personal growth. Elements include (a) CBT and mental skills training methodologies (Hanrahan, 2017; Niveau et al., 2021), (b) a PYD climate (Holt et al., 2020), and (c) promotion of self-determination (Ryan & Deci, 2000). For example, prosocial values are taught explicitly via thought-provoking prosocial quotes and discussions (Hanrahan, 2012; Serra de Queiroz, 2017) and implicitly through fostering a PYD climate (Holt et al., 2020). Botswana sports coaches who completed LifeMatters TTT reported learning mental skills, professional development, and increased PYD factors; participants felt the TTT positively influenced their lives and, as a result, believed the program should be taught throughout Botswana (Hanrahan & Tshube, 2016, 2018).

University students who know and use mental skills (e.g., goal-setting, mental imagery, and relaxation) are better equipped psychologically to persevere at university and report higher self-efficacy, self-esteem, and self-worth (Conway et al., 2016; Rivers et al., 2013). Self-efficacy positively affects students' motivation to learn, resilience, persistence at university, goal-setting, civic learning experiences, and happiness (Baier et al., 2016; Richards & Levesque-Bristol, 2016; van Zyl & Dhurup, 2018). Self-esteem is a key psychological factor in predicting university students' learning performance and academic achievement (Arbabisarjou et al., 2016). Personal growth plays a vital role in university students' subjective well-being, ability to embrace change, learning in proactive ways, and developing self-evaluations congruent with self-identity (De Jager-van Straaten et al., 2016; Freitas et al., 2016; Mason, 2019).

Supervised facilitation opportunities (e.g., LifeMatters implementation) involving experiential learning may provide university students with an enhanced educational experience (Favish et al., 2012; Maran et al., 2019). Potential improvements include reinforcing learning (i.e., TTT workshop knowledge), increased autonomy (initiative-taking and accountability), personal development, professional development, and skills development (e.g., interpersonal skills, problem-solving and time management; Naudé, 2015; Richards & Levesque-Bristol, 2016; Ryan & Deci, 2000; Young, 2017). Quality service-learning opportunities for university students contribute to enhanced self-efficacy (Allen et al., 2021), self-confidence (Nickols et al., 2013), and personal growth (Ti et al., 2021). Experiential learning and service-learning can be empowering (Chan et al., 2016), enhance students' civic learning (Ti et al., 2021), and develop students' intercultural competencies (Nickols et al., 2013). Community engagement challenges students by providing novel situations and experiences (Houshmand et al., 2014), increasing their capacity to deal with a complex and unpredictable world (Naudé, 2015). Therefore, South African university students who take on opportunities to learn an evidence-based PYD intervention (e.g., LifeMatters TTT workshop), then facilitate/implement the program under supervision, may garner several benefits and positive outcomes. Psychology and sports science university students were selected for the study because they may gain several overlapping developmental and educational benefits from a TTT workshop and service-learning experience (Chan et al., 2016; Chiva-Bartoll et al., 2018; Ruiz-Montero et al., 2023; Valdez & Lovell, 2022).

The first aim of this study was to describe changes in university students' self-efficacy, self-confidence, and personal growth during several intervals: (a) pre-TTT to post-TTT (TTT workshop experience); (b) post-TTT to postimplementation (implementation experience); (c) pre-TTT to postimplementation (combined TTT and implementation experience); (d) post-TTT to 1-month follow-up (follow-up for participants who did not implement the program). The study's second aim was to explore the students' perceptions and experiences about the LifeMatters TTT workshop, implementation experience, and general impressions of the program, as well as any potential personal and professional development.

Method

Participants and Procedure

University students (undergraduate and honors level) in the psychology and sports science departments were invited to participate in the LifeMatters TTT workshop and implementation experience via a recruitment presentation. Interested students were then provided with detailed par-

ticipant information and informed consent documents. Psychology and sports science students were targeted because knowledge of an evidence-based psychology program and practical experience are supplementary to their education and congruent with their vocational interests. Eighteen (*n* = 18; 15 female) participants were trained, and 10 (*n* = 10; 9 female) participants facilitated implementation of the program.

The TTT took place in August 2019 over a long weekend and consisted of 20 hours of interactive learning. The location was inside a gymnasium at a university in the Western Cape, South Africa. Participants received a certificate for completing the TTT workshop.

Two weeks after the TTT, some participants implemented LifeMatters as facilitators. Facilitators worked together in groups of two or three and were supervised by the first author while implementing LifeMatters. Implementation occurred at three schools (across four groups) in low-income urban neighborhoods. Two schools were in a low-resource community outside Stellenbosch; adolescent participants (adolescent learners) were 13–19 years of age, Black South African (100%), and first language isiXhosa (92.9%) speakers (Page et al., 2023). The third school, which caters to children and adolescents with disabilities and chronic health conditions, was in the City of Cape Town; adolescent learners were 13–17 years of age, Black South African (100%), and first language Afrikaans (40%), English (40%), and isiXhosa (20%) speakers (Page et al., 2022).

Study Design

Quantitative data assessments (survey instruments) measuring participants' self-reported self-efficacy, self-esteem, and personal growth were conducted at three time points: before the TTT workshop (T1; pre-TTT), after completing the TTT workshop (T2; post-TTT), and after participants implemented the program (T3; postimplementation) or follow-up (one month after TTT for nonimplementers). Comparisons between participants' aggregated scale scores at the three time points were analyzed.

Qualitative data were collected from participants via written training program review forms completed after the TTT workshop (T2; post-TTT) and focus groups performed after implementation (T3; postimplementation).

Survey Instruments

Demographic Information

Prior to the TTT workshop (T1), participants reported their demographic information, including age, gender, population group, first language, area of study (i.e., psychology or sports science), and level of study (undergraduate or postgraduate).

New General Self-Efficacy Scale

The New General Self-Efficacy scale (NGSE) measures an individual's capacity to adapt effectively to novel and adverse environments and captures their tendency to view themselves as possessing a general sense of mastery (Chen et al., 2001). The NGSE contains eight items, scored on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Mean scores were calculated, with higher scores reflecting greater positive self-evaluations. The NGSE has adequate reliability (0.88 to .90) and validity (Chen et al., 2001; van Zyl & Dhurup, 2018).

Rosenberg Self-Esteem Scale

Self-esteem is the positive and negative feelings a person has about themselves. The Rosenberg Self-Esteem Scale (RSES) contains 10 items, scored on a 4-point Likert-type scale from 1 (*strongly disagree*) to 4 (*strongly agree*). Five items are positively worded, and five are negatively worded in an attempt to inhibit response bias. Mean scores were calculated, with higher scores reflecting greater positive self-evaluations. The RSES has adequate reliability (0.76 to 0.86) and validity among racially diverse samples (Makhubela & Mashegoane, 2017; Rosenberg, 1989).

Personal Growth Initiative Scale–II

The Personal Growth Initiative Scale–II (PGIS-II) is a multidimensional instrument of the behavioral and cognitive components of personal growth and indicates a person's tendency toward pursuing and capitalizing on opportunities for self-improvement (Robitschek et al., 2012; Sanders et al., 2016). The PGIS-II has 16 items, scored on a 6-point Likert-type scale from 0 (*disagree strongly*) to 5 (*agree strongly*). Mean scores were calculated, with higher scores reflecting greater positive self-evaluations. The PGIS-II has adequate reliability (.78 to .93) and validity (Çankaya et al., 2017; Robitschek et al., 2012).

Qualitative Data Collection

The review form for the training program contained questions that sought participants' opinions about various aspects of the program, such as their likes and dislikes, along with inquiries about the content they learned and were likely to remember and apply in the future. The experiential review form has been helpful for program evaluation and improvement in prior LifeMatters studies (Hanrahan, 2017; Page et al., 2022, 2023).

Three focus groups were conducted with participants (n = 16; five to six participants per group). A semistructured interview schedule included questions about experiences of the TTT, experiences implementing the program, personal and professional development, evaluation of the program, and the program's suitability to the South African context.

Data Analysis

Survey instrument data were analyzed in IBM SPSS (Version 27). Internal consistency of the surveys was assessed using Cronbach's alpha scores and found appropriate (range 0.70–0.94). Descriptive statistics were used to summarize participant demographics and primary outcomes. Following Kim's (2013) guidelines, normality was assessed using converted z scores (for small samples). Normally distributed data were analyzed by paired sample t-tests and nonnormally distributed data by Wilcoxon signed-ranks tests. Hedges's g was used to correct for bias of overestimating population effect size (Cumming & Calin-Jageman, 2016). Training evaluation form findings are reported. Focus group data were analyzed using NVivo 12; thematic analysis was performed with themes identified inductively (Braun et al., 2016).

Ethics

Ethical approval was obtained from University of Queensland (Clearance Number 2019001079) and the South African Medical Association Research Ethics Committee. Institutional permission was obtained from the local university and the Western Cape Education Department. Participants provided written informed consent.

Results

Demographic Information

Eighteen participants (15 female) aged 21–28 years (M_{age} = 22.22 years; SD = 1.77) attended all sessions and completed the TTT (see Table 1 for demographic information). Ten participants (nine female) aged 21–23 years (M_{age} = 21.6 years; SD = .84) facilitated LifeMatters.

Changes in PYD Factors Following TTT Workshop and Implementation

Comparisons of participants' aggregated scale scores (mean or median) between the three time points (pre-TTT, post-TTT, and postimplementation or follow-up) are reported in Tables 2 and 3. Statistically significant findings are reported in the text.

Comparison of Pre-TTT (T1) to Post-TTT (T2)

Mean scores were higher posttraining for all measures (i.e., self-efficacy [NGSE], self-esteem [RSES], and personal growth [PGIS-II; see Table 2]). Effect sizes (Hedges's g) for the scales ranged from small to medium (g = 0.18 to 0.51). A two-tailed paired samples t-test indicated a statistically significant improvement for NGSE, $t(17) = -3.03$, $p < .01$.

Comparison of Post-TTT (T2) to Postimplementation (T3)

Mean scores were higher postimplementation for NGSE and RSES (see Table 2). Effect sizes (Hedges's g) for the scales were small (g = 0.13 to 0.14). The median (50th percentile) score was higher in the expected direction postimplementation for PGIS-II (see Table 3). The effect size (Hedges's g) for change on this scale was large (g = 0.75).

Comparison of Pre-TTT (T1) to Postimplementation (T3)

Mean scores were higher postimplementation for NGSE and PGIS-II (see Table 2). Effect sizes (Hedges's g) for the scales ranged from small to large (g = 0.33 to 0.74). The median (50th percentile) score was higher in the expected direction postimplementation for RSES (see Table 3). The effect size (Hedges's g) for the scale was large (g = 1.40). A Wilcoxon signed-rank test indicated the difference was statistically significant for RSES, $T = 53.00$, $Z = -2.64$, $p = .01$.

Comparison of Post-TTT (T2) to 1-month Follow-up (T3) for Participants Not Involved in Implementation

Mean scores at follow-up were unchanged for NGSE, and mean scores had decreased for RSES and PGIS-II (see Table 2). Effect sizes (Hedges's g) for the scales ranged from zero to small (g = 0.16).

Table 1. Demographics of the Trained Sample (*n* = 18) and Implementation Subsample (*n* = 10)

Baseline characteristic	Trained sample		Implementers	
	n	*SD*/%	*n*	*SD*/%
Age (Mean years)	22.22	1.77	21.6	0.84
Gender: Female	15	83.33	9	90
Population group				
Black South African	1	5.56	1	10
Colored*	1	5.56		
White	16	88.89	9	90
Area of study				
Psychology	13	72.22	9	90
Sport science	5	27.78	1	10
Level of study				
Undergraduate	12	66.67	9	90
Honors	6	33.33	1	10
Primary Language				
Afrikaans	3	16.67	1	10
English	13	72.22	7	70
isiXhosa	1	5.56	1	10
German	1	5.56	1	10

* In South Africa, the term “colored” signifies a person of mixed race.

Table 2. Paired Samples *t*-test Results of Participants

Scale	Cronbach’s alpha	*M*1	*SD*1	*M*2	*SD*2	*t*	*df*	*p*	Hedges’s *g*
Comparison of pre-TTT (T1) to post-TTT (T2)									
NGSE	0.70	4.03	0.38	4.23	0.39	−3.03	17	0.01	0.51
RSES	0.89	3.04	0.50	3.14	0.50	−1.40	17	0.14	0.18
PGIS	0.91	3.93	0.59	4.11	0.61	−1.57	17	0.18	0.28
Comparison of post-TTT (T2) to postimplementation (T3)									
NGSE	0.81	4.29	0.35	4.35	0.49	−0.48	9	0.64	0.14
RSES	0.92	3.27	0.52	3.34	0.50	−1.77	9	0.11	0.13
Comparison of pre-TTT (T1) to postimplementation (T3)									
NGSE	0.84	4.00	0.41	4.35	0.49	−2.17	9	0.06	0.74
PGIS	0.92	3.90	0.63	4.15	0.82	−1.65	9	0.13	0.33
Comparison of post-TTT (T2) to 1-month follow-up (T3)									
NGSE	0.77	4.09	0.43	4.09	0.47	0.00	7	1.00	0.00
RSES	0.83	4.14	0.47	4.08	0.35	0.60	7	0.57	0.14
PGIS	0.84	2.96	0.44	2.90	0.25	0.52	7	0.62	0.16

Note. NGSE: New General Self-Efficacy scale; RSES: Rosenberg Self-Esteem Scale; PGIS: Personal Growth Initiative Scale–II; *M*1: Scale mean at Time Point 1; *M*2: Scale mean at Time Point 2.

Table 3. Wilcoxon Signed-Ranks Test Results of Participants

Scale	Cronbach's alpha	*Mdn*1	*SD*1	*Mdn*2	*SD*2	*z*	*df*	*p*	Hedges's *g*
Comparison of Post-TTT (T2) to Postimplementation (T3)									
PGIS	0.94	4.34	0.72	4.56	0.82	−1.64	9	0.10	0.75
Comparison of Pre-TTT (T1) to Postimplementation (T3)									
RSES	0.91	3.20	0.53	3.40	0.50	−2.64	9	0.01	1.40

Note. PGIS: Personal Growth Initiative Scale–II; RSES: Rosenberg Self-Esteem Scale; *Mdn*1: Scale median at Time Point 1; *Mdn*2: Scale median at Time Point 2.

The Experience of LifeMatters: Training, Implementation, and Personal and Professional Development

Train-the-Trainer (TTT) Workshop Experience

TTT With Fellow Students: Benefits of Teamwork. All participants enjoyed the supportive, judgment-free atmosphere of the workshop, meeting new people, and working in groups. The interactive delivery format, the authentic and enthusiastic trainer, and the ethos of teamwork and cooperation helped participants feel comfortable, learn, and have fun. The activities requiring teamwork and socialization took participants out of their comfort zones and created links that developed into friendships. "You have at least one thing in common with every person you meet. All close friends were once strangers, it is okay to open up" (Participant 1). Through activities and discussions, participants opened up and discovered commonalities, which led to bonding and the unexpected formation of friendships within 2 days. The games and physical activities were enjoyed, particularly the more challenging activities requiring cooperation and trust.

TTT Improvements: Recruitment, Duration, Practice, and the Manual. Participants suggested that recruitment should better explain and convey the content and methods of the TTT workshop. Initially, participants had assumed that the program would entail traditional sporting activities (e.g., soccer) and that life skills would be transmitted vicariously through bonding. "The explanation in class was enough to, like, get me like, 'okay, cool, I want to do this,' but I thought we were gonna be playing, like, softball" (Participant 2). Further, participants suggested the training be spread over several days and additional time be provided to run through the training. Conversely, participants felt that some sessions and activities could be shortened. The provided food and the snack breaks were appreciated and gave participants time to relax, refresh, and reflect between sessions. Receiving training outdoors when weather conditions permitted was suggested.

The workshop was regarded as contextually relevant. Participants were cognizant that training took place among English-speaking, university-educated young adults and were concerned that translating training to practice may be challenging. They assumed adolescent learners from low-resource schools may struggle to grasp content quickly due to their young age, poor literacy levels, and language differences. Participants who had issues with being touched disliked games that required physical proximity. Concern was raised that overweight and disabled individuals might not be able to participate in certain activities (e.g., a trust activity where participants are lifted off the ground by the group and swayed gently back and forth).

Three program manual improvements were suggested: (a) a session-by-session introduction and a summary overview highlighting how learning content (e.g., self-confidence) relates to specific development outcomes (e.g., self-esteem), (b) a checklist to tick off while progressing through the program, and (c) visual cues and pictures of different activities and games (e.g., versions of tag-based games) to assist content recall when facilitating sessions.

> What would help, um, would be just having a picture taken on the day of the training, where for example, like, with the different tag games, like, with people standing like a flamingo. . . . Um, just that picture, I'd be like, "OH! Okay, yes! I know exactly which game we're talking

> about!" . . . Just those visual cues I think would have been a lot more helpful: "Okay, yes. This is where we are. This is what we're doing today." (Participant 3)

Having practiced all the activities during the TTT, participants felt competent and prepared to implement the program. The certificate awarded after the TTT was appreciated because it validated participants' efforts, acquisition of knowledge, and experience gained.

Implementation Experience

Learning on the Job and Facilitation Preferences. Participants reported feeling shy and uncertain of themselves while facilitating the first few sessions. "Yeah, and I think especially at [school name], like we struggled, I know on the first day, I was like very, um, like, shy around the kids" (Participant 2). Occupying a position of authority while being relatable and approachable was challenging, mainly when adolescent learners' discipline was poor. After a few sessions, participants felt confident, empowered, and self-assured; these attributes carried over into their lives after the program. Preparation and facilitation of sessions necessitated participants' familiarization and engagement with the learning content, resulting in improved knowledge acquisition of the program's lessons. "Yeah, being able to, like, teach it to someone else definitely, like, imprints it" (Participant 4).

The participants had differing experiences and perspectives regarding supervision by the first author, the implementation group size, and working alongside a cofacilitator. Supervision made some participants feel relaxed, comfortable, and supported, whereas others felt evaluated and nervous. Cofacilitators promoted participants' confidence by providing support and a sense of security, and by being someone to turn to for assistance during times of uncertainty or when challenges arose. Some participants disliked having a cofacilitator because they felt less needed, which resulted in reduced interest and engagement. Participants reported learning teamwork, cooperation, and collaboration while working alongside their cofacilitators. Over time, participants learned their cofacilitators' strengths, interpersonal styles, and teaching methods. Larger group sizes (approximately 20 youths) were considered fun due to their high energy and level of responsibility. Smaller groups (approximately 10 youths) were liked because the discipline was better, enabling more intimacy and one-on-one time with adolescent learners.

Time Management and Adhering to Program Activities. Poor time management affected some participants' implementation. "I think that sometimes we felt a bit rushed, like there was just so much to do and, like, almost teach them that, maybe it felt rushed because we had to explain ourselves, like, 10 times" (Participant 5). Participants occasionally omitted content they deemed less important (e.g., a detailed model of attention) to focus on and emphasize lessons they believed were more relevant and beneficial (e.g., goal setting). Participants pointed to the adolescent learners' poor literacy, learning difficulties, language barriers, and the need for facilitators to repeat themselves as reasons for the time crunch. For a minority of participants, their university schedules did not synchronize with the implementation sites (schools), resulting in suboptimal/irregular implementation schedules. Due to irregular implementation affecting continuity, some participants felt they had not formed as close relationships with the adolescent learners as they had hoped. Overall the implementation was considered enjoyable, as evidenced by a participant who reminisced about the implementation experience:

> The laughter that came from the sessions was just contagious. I found myself screaming just as much as the kids when we were playing the games. . . . It was almost like a little bubble that we existed in when the intervention was going on. It was like everything else just stopped and it, like, it wasn't just a school. . . . It was like there was something going on, there was this containment of energy and it was amazing, yeah. (Participant 3)

The South African Context. Implementation opened participants' eyes to the realities (limitations, challenges, and opportunities) of psychology intervention in South Africa. The participants felt empowered and proud to contribute to PYD in the local underserved communities. The sense of satisfaction from giving back to the community justified the participants' time commitment.

> I think also, like, we have helped them in, like, quite a special way, like teaching them new things, but also just helping them with their confidence too, and I think that's quite rewarding for me. (Participant 3)

Active involvement with adolescent learners from the local underserved community and greater familiarity with the challenges inherent in the local schools kickstarted a process of reflexivity for participants. Participants were grateful for the numerous opportunities during their lives, including their access to higher education. Prior to the study, the majority of the participants had limited exposure and experience meaningfully interacting with adolescent learners from underserved (low-resource and low-income) communities. Implementation raised participants' awareness of the systemic problems in the community and the adolescent learners' daily struggles; they were inspired by what the adolescent learners had achieved, given the lack of PYD opportunities.

> I also think, like, working with people from a specific background and context, you realize how much you actually have and how different your lives are, and I think we also actually learned a lot from the [adolescent learners] and, like, you can appreciate how much they do to get to where they are. (Participant 6)

Relating and forming bonds with the adolescent learners came naturally for some participants. "I really enjoyed the way that we, like, got a chance to build a relationship with the children, or yeah, the kids along the way, and yeah, it was really amazing for me to see how they actually responded" (Participant 7). Implementation challenged participants' self-perceptions of their strengths and interpersonal capabilities. Furthermore, participants reframed how they viewed personal achievement and implementation success, unanimously considering implementation successful and a positive experience.

Personal and Professional Development

Improved PYD Factors and Mental Skills. Participants' personal development included improved self-efficacy, self-esteem, and personal growth; notable improvements included self-confidence (e.g., public speaking), emotion regulation, and interpersonal skills. Participants felt they had learned valuable lessons that could be used in everyday life and had developed greater insight into their emotions and competencies. Participants reported learning and improving in the following skills: breathing/relaxation techniques, communication, goal-setting and motivation, imagery, positive coping mechanisms, progressive muscular relaxation (PMR), self-affirmations, self-talk, teamwork, and thought stoppage. Participants spoke of improved sleep, stress management, and time management by using mental skills (e.g., PMR and breathing activities). "I do imagery quite a lot, um, and mindfulness every night I go to sleep, so I learned it before the course, but after, I went on and made a thing to actually implement in my own life" (Participant 8). A participant spoke of overcoming their fear of failure and hesitance in setting goals and reported progressing toward a long-term goal (a fun run). A participant used thought stoppage and breathing activities to interrupt negative cyclical thinking and reduce anxiety.

> Like today, I had a, like, not anxiety attack, but just overwhelmed by a lot of things I had to do and, um, I just had to tell myself, "stop," like you literally just have to stop, take a deep breath and . . . I mean, that is something that LifeMatters taught us. (Participant 5)

Positive personal development was highlighted more specifically for some students. A first-generation student from a community in which the intervention was implemented spoke of the relevance and impact of the mental skills and prosocial quotes (life lessons) to themselves, their family, and first-generation students.

> I also come from [low-resource community], so, like, the skills that I learned were very helpful for me, because to be honest with you, I had never heard some of those things we heard there [during TTT], I was telling my sister and my friend and, like, going through the goal-setting thing and she'd also never heard of it, so, um, she was very happy about it. . . . I didn't know about the breathing exercises. I didn't know about the "control the controllable" stuff. Like, my mom

> doesn't know anything about this. I know, because coming from my family, like most of the friends I have, like, we are first-generation university people, like, you don't have anyone, um, back home to tell you, like, to coach you on how to cope in university. . . . Like, you feel like you're thrown in the deep end. (Participant 9)

Prosocial Values and Growth Mindset. Prosocial values (e.g., trusting others and being nonjudgmental) and being mindful and intentional about fostering a positive mindset were reported. Focusing on the present and having a positive outlook on life were essential life lessons. The program's prosocial quotes were instrumental to participants' learning and self-reflection because participants related to them meaningfully. The positive affirmations written anonymously by peers were an exceptionally positive experience for participants; they reported taking home the supportive, uplifting comments as a keepsake. Participants reported increased self-motivation and positive thinking, in part due to the group discussions and prosocial quotes (e.g., "Nobody can make you feel inferior without your consent").

> I remember after that [TTT], I've just had a more positive mindset. It really changed something. I'm not usually very good at adopting positive things into my life. It just opened my eyes again that it is very helpful to be more positive and that there is also a lot to be positive about. (Participant 10)

The TTT inspired further self-development; participants reported investigating resources (e.g., self-help books) to learn about the mind, the brain's functions, and additional mental skills. Agency and taking control of one's life and behaviors was an important life lesson. "I think for me it's the same with 'control the controllable.' . . . I feel like I have more control of my life and I know the stuff that I can control, I actually do control, like waking up early" (Participant 9).

Relevance for University Students: Professional and Educational Development. Primary motivations for involvement in the study were to learn about sport psychology, learn new skills, gain practical experience, accumulate practical hours toward a degree, CV building, and to make a positive impact; participants felt they had met these objectives. Participants regarded the TTT as relevant and beneficial for themselves, psychology and sports science students, and university students in general. "The content, I feel, is very important for university students" (Participant 11). The sport psychology skills and concepts were regarded as complementary to their education, explaining new psychological concepts and filling knowledge gaps in a novel and easy-to-digest format. The program was described as a bridge connecting psychology and sports science. Participants felt the LifeMatters training had broad appeal to students interested in psychology.

Nevertheless, concern was raised that students might not prioritize developmental and educational opportunities (e.g., LifeMatters) above studies, employment, and socializing. Incorporating LifeMatters into psychology and sports science degrees and making the program compulsory by other means were suggested to increase students' involvement. The learning content was considered a balanced mixture of practical and theoretical components. However, a participant suggested a more lecture- and theory-based teaching approach to increase the broad appeal of the program due to the perception that students may feel self-conscious or too cool to partake in physical activities and games properly.

Rare Opportunity: Practical Psychology Training. The participants relished the rare opportunity to gain practical psychological training and experience during their studies. Implementation relieved participants' frustrations caused by years of studying with few opportunities to learn practical skills and work with people.

> Like, we don't have opportunities, really, to do anything that's beneficial to the community when we're still studying. I think that's one big problem that we have in general, is that you can't actually do a lot because you're not qualified and it takes, it's such a long process to get a qualification that certifies you to actually go and work in the community, so the whole program was really cool, because it was the first time that I could actually go do something about it and it was

> actually really clear. . . . Yeah, it's actually going to do things that I know is going to make a difference. (Participant 12)

Mental skills that apply to athletes, the general public, and everyday life situations were considered remarkable for their practical utility and for humanizing the science in a down-to-earth manner. "Yeah, we learned how to apply what we know to, like, athletes to actually, like, the average day person, which is actually a bit nicer" (Participant 1). Participants reported using LifeMatters games that required no resources (e.g., tag-based games) in their professional lives when coaching children despite having access to fancy equipment. Participants expressed the desire to continue implementing the program in the future.

Discussion

Changes in PYD Factors Following TTT Workshop and Implementation

The LifeMatters TTT workshop and implementation experience improved the university student participants' self-efficacy, self-esteem, and personal growth. Due to the interconnected nature of self-efficacy, self-esteem, and personal growth (Çankaya et al., 2017; Chen et al., 2001; Freitas et al., 2016; Robitschek et al., 2012; Rosenberg, 1989), it is unsurprising that these PYD factors all improved together. Effect sizes (Hedges's *g*) for the TTT, implementation, and combined experience ranged from small to large for a psychological implementation study (Cumming & Calin-Jageman, 2016). The study was intended to inform practice, not for significance testing; therefore, statistically significant findings should not be overinterpreted.

Mental skill usage (Conway et al., 2016; Rivers et al., 2013) and service-learning opportunities (Allen et al., 2021; Nickols et al., 2013; Ti et al., 2021) have been linked to elevated self-efficacy, self-esteem, and personal growth, potentially partly explaining students' elevated PYD outcome factors. The TTT and implementation experience independently contributed toward elevated participant PYD factors; however, the combined benefits of the TTT workshop and implementation experience may be greater than the sum of their parts. It is not possible to ascertain the benefits/influence of the implementation experience independently, given that the TTT workshop is a prerequisite of implementation and the implementation occurred directly after the TTT workshop. Nevertheless, despite these limitations, findings illustrate the implementation experience offered benefits beyond the TTT. By comparison, the PYD factors of the participants who completed only the TTT remained fairly stable at follow-up (T3) one month after the TTT. The quantitative findings are in line with prior LifeMatters TTT studies from low-income settings (Hanrahan & Tshube, 2018) and expand PYD literature in Africa, specifically regarding university students.

Personal and Professional Development

Qualitative findings corroborate and support the quantitative results, providing further insight into how the LifeMatters TTT workshop and implementation experiences contributed to students' development. The knowledge, skills, and competencies gained during the TTT workshop were enhanced and solidified during the hands-on learning of the implementation experience. As expected, the overall experience promoted participants' PYD factors (self-efficacy, self-esteem, and personal growth), acquisition of mental skills, and personal and professional development.

The elevated PYD outcome factors appear to be linked with other improvements reported by participants, including mental skill usage, perseverance, positive self-identity, and deeper introspection. These links and improvements align with other researchers' findings (Arbabisarjou et al., 2016; Baier et al., 2016; De Jager-van Straaten et al., 2016; Mason, 2019; Richards & Levesque-Bristol, 2016; van Zyl & Dhurup, 2018).

The LifeMatters CBT and mental skills training methods (Hanrahan, 2017) appear to have been successful, with numerous mental skills reportedly learned, improved, and adopted in various spheres of participants' lives. The assets and competencies (e.g., increased autonomy) gained and improved through real-life practical experiences will likely transfer to other areas of life and confer long-term positive change (Ryan & Deci, 2000; Young, 2017). Evidence of professional development and knowledge transfer was seen in participants who employed practical skills and LifeMatters content (e.g., physically active games) in their professional work lives. Personal growth and a growth mindset were indi-

cated by inspired participants who sought further self-improvement opportunities and resources (Robitschek et al., 2012; Sanders et al., 2016).

The community engagement during implementation challenged and empowered participants, improved intercultural competencies, and fostered a deeper sense of social/civic responsibility. These benefits were reflected in participants' desires to implement the program again. These findings align with other service-learning and community engagement research (Chan et al., 2016; Houshmand et al., 2014; Naudé, 2015; Nickols et al., 2013; Ti et al., 2021). Enhancing students' agency for self-development and social/civic change is foundational to PYD philosophy (Lerner et al., 2011, 2021); furthermore, promoting prosocial values and a sense of social responsibility is an important role that higher education institutions in South Africa should fulfill (Favish et al., 2012; Garton & Wawrzynski, 2021; Naudé, 2015).

The TTT workshop and implementation contributed to core components of PYD: improved mental skills (e.g., goal-setting), building participants' assets and competencies (i.e., interpersonal skills), and cultivating healthier norms (i.e., prosocial values); it also promoted agency (i.e., perseverance and positive self-identity) and contributions to civil society (Catalano et al., 2019; Lerner et al., 2011, 2021). Altogether, the improvements participants reported may serve as both promotive and protective factors, positioning students on a positive trajectory for success at university (Bantjes et al., 2019; Conway et al., 2016; Rivers et al., 2013). Thus the educational, capacity-building, and personal and professional development that university students gained from this experience should not be understated, as they may not get these benefits elsewhere.

Implications for Practice: TTT Workshops and Implementation Experiences

The psychology and sports science university students in this study completed the LifeMatters TTT workshop and implemented/facilitated the intervention with groups of adolescents; the research focused on the adolescent samples is published elsewhere (see Page et al., 2022, 2023). The lessons learned from participants' evaluations and perceptions align with prior research involving the LifeMatters TTT workshop (Hanrahan & Tshube, 2018). The resulting recommendations may be appropriate and helpful to researchers/practitioners who wish to establish, implement, or improve a similar program and implementation (service-learning) approach, particularly with university student groups.

Psychology and sports science students, by their own account, desire and are ideal candidates for group-based experiential and hands-on learning, particularly when these opportunities are supplementary to their education, congruent with their vocational interests, aligned with their key motivators, and offer learning content that covers topics of interest (e.g., psychological and mental skills). Students' motivations for participation included learning about sports psychology, gaining practical experience and skills, CV building, accumulating practical hours toward a degree, and positively influencing society. These motivators should be considered when designing and recruiting students into PYD training and developmental opportunities to inspire students to participate and overcome their apathy/reluctance for developmental opportunities. University students in South Africa and other developing nations rarely have access to PYD training opportunities in higher education (Alvarado et al., 2017; Catalano et al., 2019; Dvorsky et al., 2019). For the above-listed reasons, which align with other researchers' findings (Chan et al., 2016; Chiva-Bartoll et al., 2018; Ruiz-Montero et al., 2023; Valdez & Lovell, 2022), psychology and sport science university students greatly benefit from and thus jump at the opportunity to participate in a structured, manualized, and evidence-based TTT program/workshop with an accompanying supervised implementation experience.

Peer relationships/friendships organically grow from group-based TTT and implementation experiences that involve close proximity, shared experience, and trust and empathy games. Peer relationships/friendships are potential long-term assets for students. Strategically offering these learning and growth opportunities, for example, at the start of the academic year, may promote positive group cohesion and identity among a class/cluster of students.

The LifeMatters teaching approach (mix of theoretical and practical elements) received high praise from the students due to the engaging and fun activities, and easy-to-understand and thought-provoking content. The experiential learning ap-

proach is effective with university students (Shek, 2012), and thus a more lecture-based teaching style may be counterintuitive and counterproductive to achieving the positive outcomes of the present study. A TTT workshop should prepare facilitators for implementation by teaching culturally responsive principles and practices (Gliske et al., 2021; Hanrahan, 2011; Simpkins et al., 2016). To this end, facilitators should be taught how to foster a PYD climate, defined as an inclusive, supportive, and enabling environment (Hanrahan, 2012; Holt et al., 2020; Serra de Queiroz, 2017). TTT workshops with a PYD climate and group activities (especially involving teamwork) and discussions (small and big groups) create supportive opportunities for participants to practice interpersonal and social skills.

A well-developed program manual is a key material for training and an invaluable resource for facilitators to use during implementation. Facilitator manuals can be improved by including a session-by-session summary of key learning content and outcomes, progress checklists, and visual cues (e.g., images) of activities as reminders. Time management skills should be explicitly taught, because facilitators often struggle to keep time and pace when implementing programming.

Concerning planning and structuring implementation, facilitators benefited from and preferred working in pairs with a cofacilitator, with supervisory support available when needed to assist with in situ challenges as they occurred. TTT and implementation experiences take students out of their comfort zones; the novel and unfamiliar contexts and problems stimulate participants' active engagement and learning. Implementation experiences foster reflexivity and introspection concerning participants' privileges, personal competencies, and interpersonal styles. Structured written reflections incorporated into the TTT and implementation protocols could promote students' introspection (Chan et al., 2016; Houshmand et al., 2014; Nickols et al., 2013), potentially contributing to learning cultural competency, and promoting self-efficacy and personal growth (Sanders et al., 2016; Young, 2017).

University students may feel anxious facilitating programming with youth groups, notably if they differ in terms of demographics (e.g., ethnicity, language, culture, socioeconomic status) and if it is their first time in a leadership/authority role. However, despite differences (both real and imagined), the student facilitators and the adolescent learners both reported meaningful bonds; additionally, the facilitators were deemed relatable and caring role models (Page et al., 2022, 2023). Given a TTT workshop training facilitators in PYD methods (Lerner et al., 2011, 2021), and with adequate support during implementation, students' cultural competence will develop rapidly, as well as their communication skills, self-confidence, and self-efficacy (Young, 2017).

Limitations and Future Research Directions

In future research, follow-up after the TTT and the implementation would be valuable to ascertain long-term effects and stability of improvements. Future research should include a larger sample and a control group. A study limitation is that learnings may be case-limited to this particular type of program and approach to engagement; therefore, findings should be interpreted/considered within the greater context of similar applied research. Future research could include implementation science protocols and methods to assess possible decreases in the effectiveness of PYD and LifeMatters implemented with child and adolescent participants within an experiential learning context. Future research might also investigate the long-term impacts of TTT and its implementation on the community.

LifeMatters has shown the potential to be a much-needed addition to South African universities to provide psychology and sports science students with an evidence-based PYD education and service-learning opportunity. Future research could investigate the LifeMatters workshop adapted to be part of a credit-bearing PYD subject for university students. Additionally, integrating supervised service-learning (Favish et al., 2012; Maran et al., 2019) within institutions grounded in evidence-based psychology, such as programs like LifeMatters, warrants more in-depth research. It would be worthwhile to examine the influence of the LifeMatters PYD workshop across a range of higher education institutions, fields of study, and demographic groups.

Conclusion

The LifeMatters TTT workshop and implementation experiences improved students' self-efficacy, self-esteem, and personal

growth. The TTT workshop was relevant and beneficial for the university students, contributed to their personal and professional development, and promoted knowledge and use of mental skills. Community engagement and experiential learning provided students with real-life practical experience and enhanced learning. Students (emerging adults) navigating the challenges of university life may find PYD programs such as LifeMatters valuable for promoting well-being and resilience. Hallmarks of a successful PYD program include building assets and competencies, fostering an enabling environment, increasing agency, and increasing contributions to civil society. The LifeMatters TTT and implementation experiences meet these criteria. The LifeMatters workshop and supervised implementation experience have merit for inclusion at institutions of higher education in South Africa and have particular value for psychology, sports science, and first-generation students.

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Connecting Campus to Countryside: An Evaluation of the Rural Scholars Program at Oklahoma State University

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Abstract

Rural communities face incredible challenges and emerging opportunities. Land-grant universities are well-positioned to assist by developing new approaches to inspire university students to become civically engaged, rural community members. With this aim, the Rural Scholars program at Oklahoma State University was developed as an opportunity for undergraduate and graduate students (Scholars). The program consists of a 16-week course followed by a 10-week immersive summer research and service experience in a rural community. This study sought to assess the program's impact on Scholars and the communities in which they lived and served. Findings revealed that Scholars appreciate the experience and find it beneficial to their growth as students. Some felt prepared for their service and research experiences, whereas others felt somewhat isolated. Community mentors felt Scholars' presence in communities was beneficial. Recommendations include improving communication and clarifying expectations. Future research should include perspectives from faculty research mentors.

Keywords: rural, service-learning, land-grant mission, community engagement, community-based participatory research

According to the United Nations (2018), the global rural population is nearly 3.4 billion, and in the United States, 20% of the national population resides in rural communities with less than 5,000 people (U.S. Census Bureau, 2022). Economic drivers within these rural communities often include agriculture, education, and health care (Davis et al., 2022). Although agriculture accounts for fewer jobs in rural America now than in previous decades, policy relating to the development of rural areas still largely revolves around agriculture (Freshwater, 2021). Meanwhile, globalization, climate change, and demographic changes are bringing new opportunities and challenges to rural communities (Garcilazo, 2021).

Rural communities rarely face one single challenge; rather, problems tend to be multidimensional and complex (Emery & Flora, 2006). Along with these challenges, rural communities also have assets and forms of capital that can be leveraged to address issues (King et al., 2022). Therefore, simultaneously addressing multiple facets of the well-being of rural residents can help communities prosper (Garcilazo, 2021). Engaging community members, assessing their needs, and developing a forward-thinking plan can be key components to such community development efforts (Bryant & Cooper, 2021). When rural communities partner with universities in these efforts, valuable resources such as students, faculty, technology, and research expertise become available to help address community needs (Bringle & Hatcher, 1996). Thus universities can play unique roles as they mobilize these resources to help strengthen rural economic development, contribute to the culture of communities, and address the

health and educational needs of the community (Dore, 1990). These roles are ideally suited to the mission and culture of land-grant universities.

Land-grant universities were created to broaden higher education accessibility for a state's citizens and to advance technological, civic, and economic development across the United States (Felten & Clayton, 2011). Federal legislation established three pillars to enhance the functionality of land-grant institutions: teaching, research, and extension. The 1862 Morrill Act endowed colleges in every state "to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life," prioritizing educational opportunities for all economic classes (First Morrill Act, 1862, sec. 4). The Hatch Act of 1887 established the research function of land-grant institutions through agricultural experiment stations to promote the conduct of original investigations and experiments (Croft, 2019). Finally, the Smith-Lever Act of 1914 established the Cooperative Extension System throughout the land-grant system nationwide to disseminate practical knowledge to citizens (Croft, 2019).

However, McDowell (2001) theorized that since the 1950s the efficacy of land-grant universities in helping people solve everyday problems with science-based knowledge and tools has declined. Extension's efforts to engage with the public have failed to acknowledge the changing nature of scientific information and societal needs (McDowell, 2001). The traditional model of education-based delivery used by Extension may create power imbalances between the information shared and consumed by experts and citizens, respectively (Buys & Bursnall, 2007). The imbalance in power enforces a view of citizens as people who need to be saved, and the "result has been further stratification of rural society and individual alienation from institutions designed to serve the public good" (Colasanti et al., 2009, p. 2). Thus, there is a need for land-grant universities to be more productively engaged within rural communities, focusing on creating a power balance through reciprocity and mutual respect (Kellogg Commission, 1999).

One way in which land-grant institutions can more productively partner with rural communities is by helping to prepare students to be civically engaged members of the community (McDowell, 2001). Encouraging students to put theory into practice goes beyond educating to prepare them for careers; rather, it prepares them for life as responsible community members (Boyer, 1994). With this aim in mind, the Rural Scholars program at Oklahoma State University was created in 2019 to provide students the opportunity to make a positive difference in rural communities and become rural champions. The Rural Scholars program involves Oklahoma State University scientists being paired up with a student (i.e., Rural Scholar) to conduct research and service in a focus community identified by Oklahoma State University's Rural Renewal Initiative (RRI). Focus communities were chosen based on stressors classified by the USDA Economic Research Service (2015) county typology codes. These stressors included low education, low employment, persistent poverty, persistent child poverty, and persistent population decline. Oklahoma State University students were recruited and interviewed by RRI team members, and students with evident potential to succeed as Rural Scholars were selected. Once identified, the Rural Scholar (hereafter referred to as Scholar or Scholars) enrolled in a 16-week spring semester course to learn about focus communities' needs and the research that would be conducted to address the needs. During the course, emphasis is placed on helping Scholars learn about rural community engagement, research methods, data collection and analysis, and how to present and share research findings. Time is provided in the course to allow Scholars to develop a plan of work for their 10-week immersive summer experience in a rural community. The plan of study includes a timeline of research and service activities the Scholar will conduct during the 10-week internship.

Before moving into their rural communities, each Scholar is paired with a community mentor (hereafter referred to as mentor or mentors). Mentors are chosen based on faculty contact networks in the focus communities. Every mentor is someone who is well-known in the community and can help the Scholar acclimate. Mentors provide support to Scholars regarding living arrangements. They also introduce the Scholars to pertinent community citizens and leaders whom the Scholar may need to interview or interact with. Mentors also work with the Scholars to assist in the planning and delivery of service projects in the community. Mentors are instrumental to the success of the Rural Scholars program. Scholars are also paired with faculty research mentors

at Oklahoma State University who help guide the research process remotely from campus.

Once Scholars launch into their focus community, they work with their community mentors to integrate into the community and check in with faculty research mentors to track progress on their respective research projects. Scholars are given a mentor in the community and at the university to help balance power dynamics. Check-ins with research mentors, community mentors, and weekly meetings with the Rural Scholars coordinator allow Scholars opportunities to reflect on their experiences throughout the internship. After the 10-week internship is completed, Scholars work with their research mentors to analyze data and present their findings at RRI's annual Rural Renewal Symposium. Scholars and community mentors also reflect on the overall experience with the Rural Scholars program during an in-person interview with the Rural Scholars coordinator after the completion of the Rural Renewal Symposium.

Each year, between eight and 11 students are selected to participate in the Rural Scholars program and between five and eight community members serve as mentors to assist Rural Scholars while they are living in rural communities. As of 2022, 24 Rural Scholars had completed the experience (see Table 1), two Rural Scholars repeated the experience, and 12 community mentors have engaged in the Rural Scholars program. Rural Scholars represented the College of Agriculture; Center for Health Sciences; College of Engineering, Architecture and Technology; and the College of Arts and Sciences.

Purpose and Objectives

The purpose of this study was to assess the Rural Scholars program and its impact on the Scholars and the focus communities in which they lived and served. The Rural Scholars program incorporates teaching, research, and extension, fundamental land-grant university pillars, in rural communities. Evaluating the experiences of the Scholars and community members involved in the Rural Scholars program will aid in determining the program's impact and success in embodying the land-grant mission. The following research questions guided the study:

1. What **was** the **experience** of Scholars **involved in** the Rural Scholars program?
2. What **was** the **experience** of community mentors **involved in** the **program**?
3. What **are rural community members' perceptions of** the Rural Scholars program?

Literature Review

This study was based on experiential learning theory (Menaker et al., 2006). Experiential learning theory stems from pedagogical constructivism, which asserts that meaning is constructed through experiences, thereby providing context to information learned (Doolittle & Camp, 1999). Experiential learning revolves around the connection between education and personal experience. Two basic tenets frame the theory of experiential learning: (1) Learning occurs as individuals change their thinking based on lived experience, and (2) learning occurs by reflecting on experiences (Dewey, 1986).

As individuals acquire experiences, they revisit and modify their thinking based on their new experiences, creating a cycle of learning (Menaker et al., 2006). In Kolb's (1984) experiential learning cycle, the most effective learning occurs as students cycle through four phases: (1) engaging in concrete experiences, (2) reflecting on observations from the experience, (3) forming abstract concepts and conclusions, and (4) using conclusions to test a hypothesis in new experiences. Morris (2020) expanded on what constitutes a concrete learning experience, revealing that students must be exposed to new experiences and play roles

Table 1. Rural Scholar Academic Classifications

Freshman	Sophomore	Junior	Senior	Graduate student
0	3	8	6	7

Note. Numbers do not double count the students who repeated the experience because their classifications did not change.

as active participants in the experience, knowledge should be applied to the specific place and time of the experience, students should be inquiring about real-world problems, and critical reflection will create a meaningful learning experience. Based on his systematic review of Kolb's learning cycle, Morris (2020) suggested revising the learning cycle to consist of "*contextually rich* concrete experience, *critical* reflective observation, *contextual-specific* abstract conceptualization, and *pragmatic* active experimentation" (p. 1064).

This learning cycle can occur over multiple experiences as learners deepen their understanding to inform correct meaning-making. Experiential learning environments encourage adaptive thinking through the learning cycle. Providing reflective experiences after learning experiences accelerates the development of adaptive thinking (Menaker et al., 2006). Among the various types of experiential learning activities, this study focused specifically on service-based experiences.

Service-Learning Experiences

Service-learning is a subset of experiential learning that connects education to civic engagement (Felten & Clayton, 2011). Service-learning can consist of advocacy efforts, interactive service projects, research projects, and broad issue projects (University of Central Arkansas, 2024). Reciprocity is a crucial element in connecting academic context with public issues. The interdependence between learning outcomes and community outcomes makes service-learning a powerful tool for education and social exchange. However, its implementation can be challenging. Because learning occurs within community organizations, not controlled laboratory spaces, students experience complex problem-solving challenges and unpredictable human interactions. Thus, in contrast to traditional classroom learning, service-learning simultaneously increases the stakes for students and communities (Felten & Clayton, 2011).

Student Experience

Service-learning allows students to apply concepts taught in the classroom to real-world situations (Cooke & Kemeny, 2014; Mason & Dunens, 2019). The opportunity for students to connect these experiences stimulates a deeper understanding of the world around them (Wawrzynski & Baldwin, 2014). Mason and Dunens found that engaging students in a course before the service-learning experience allowed them to better understand and apply foundational concepts while working in communities. Service-learning benefits students' cognitive development and leads to a deeper understanding of social problems (Yorio & Feifei, 2012), and it positively impacts students' confidence in their ability to succeed (Bernadowski et al., 2013). Service-learning can enhance academic performance, increase student interest in the subject, teach problem-solving skills by meeting a community's needs, and introduce civic education to students (Bringle & Hatcher, 1996). Critical reflection is a key component of service-learning that generates and documents the learning process for students (Ash & Clayton, 2009).

Faculty Role

The quality of a service-learning experience reflects effective faculty involvement (Harris, 2004). When embarking on a service-learning opportunity, it is crucial to understand the context of the rural area in which the program will be conducted (Lapping, 1999). Faculty employing service-learning must support students in understanding the consequences of service, alongside the possibilities—the ways service can make a difference, as well as the ways it can perpetuate systems of inequality and reinforce an "us versus them" narrative (Mitchell, 2008). Many rural communities lack economic resources, so financial considerations such as student housing and compensation should be accounted for when developing rural service-learning opportunities (Knack, 1996).

Mason and Dunens (2019, p. 8) encouraged understanding best practices of community engagement and acknowledging the "power and privilege at play in university-community partnerships" as key to successful service-learning experience. Faculty help forge and maintain meaningful connections with communities and encourage student engagement, which is especially important in rural communities (Harris, 2004). Faculty involvement is critical to clearly define expectations and balance expected outcomes for both students and community members (Harris, 2004). When universities develop service-learning programs, community members and entities can help inform faculty and students about specific needs to better focus the program's service efforts. However, when the program includes research, it is essential to communicate that outcomes may be unexpected, and preferred

results are never guaranteed. When students engage in service-learning experiences in rural areas, both students and sponsoring agencies in the community should maximize students' involvement within the community to ensure a mutually beneficial experience for the community and the university. An ideal model for service-learning in rural areas consists of an involved team of faculty members working with a small group of invested students. When students work together, they acquire valuable communication and teamwork skills, which are enhanced further when students represent different disciplines (Harris, 2004). "Service-learning can make tangible contributions to the quality of rural life, thereby making these areas more attractive for residents who wish to stay" (Harris, 2004, p. 41).

Community Impact

It is important to understand community members' perceptions of service-learning programs (Chupp & Joseph, 2010; Stoecker & Tryon, 2009). Historically, service-learning has focused primarily on student experience and learning. Ferrari and Worrall (2000) discovered that community members tend to reflect positively on students' work skills and service involvement. However, Sandy and Holland (2006) found a disconnect between students' and community members' perceptions of student impact on communities. This observation may be particularly true when the students' work includes a research component, as opposed to community service only. Community members and community organizations may view research as disconnected from their reality, providing little benefit to the community and greater benefit to the researcher (Ahmed et al., 2004; Blouin & Perry, 2009). When faculty place students in communities without clearly communicating with community organizations about goals and objectives, the disconnect between the community and university widens (Blouin & Perry, 2009). Community members may view research as an invasion of privacy, secretive, and irrelevant to their needs (Ahmed et al., 2004).

Service-learning experiences focused on reciprocal relationships between students, faculty, and communities, along with engaging participants in critical reflection, help balance university–community power dynamics (Asghar & Rowe, 2017). Integrating service activities relevant to coursework can improve service-learning impacts for students and community members, especially if the service activities are designed for sustainable change and not a one-time contribution. Just as reflection is important to enhancing students' service-learning experience, community members also should be included in the design, implementation, assessment, and reflection of service activities. For optimal community impact, it is essential for community members and organizations to be partners in the service-learning experience (Chupp & Joseph, 2010).

Methods

A mixed-methods approach was used to collect data for this study. Mixed-methods research allows for the collection of both qualitative and quantitative data to make decisions and address research questions (Creswell & Poth, 2018). Mixed-methods research is "superior to a single method as it is likely to provide rich insights into the research phenomena that cannot be fully understood by using only qualitative or quantitative methods" (Dawadi et al., 2021, p. 27). Specifically, this study relied on convergent parallel design, where the qualitative and quantitative data were collected independently and then were converged and mixed to triangulate the results (Creswell & Poth, 2018). Qualitative research was used to assess the experiences of Scholars and mentors through interviews, and quantitative research was used to assess the perceptions of residents living and working within the focus communities of the Rural Scholars program. Details of both approaches are described in more detail in the following sections. The study (20-375) was approved by Oklahoma State University's Institutional Review Board on August 27, 2020. Due to the COVID-19 pandemic and restrictions associated with government shutdowns, Rural Scholars in 2020 had a unique experience compared to Scholars in subsequent years. Rural Scholars were asked how COVID-19 impacted their summer experience. Unfortunately, due to the impact of the pandemic, incomplete data were collected from Rural Scholars in 2020, and no data were collected from community mentors in 2020. Therefore, data from 2020 were not included in this study. Scholars in 2021 and 2022 reported negligible impacts of the COVID-19 pandemic on their experience.

Qualitative

A census study was used to collect relevant,

information-rich data from all participants who played a specific role as Rural Scholars or community mentors in the 2021 and 2022 Rural Scholars program (Patton, 2002). Qualitative research methods produce detailed data with a more extensive comprehension of the subject (Flick, 2009). Scholars were undergraduate or graduate students enrolled at Oklahoma State University who participated in the Rural Scholars program. Community mentors were members within the focus communities who volunteered to partner with the RRI team to mentor Scholars during the summer experience. Each Scholar (*N* = 18) and community mentor (*N* = 14) who participated in the 2021 and 2022 Rural Scholar experiences was interviewed using a semistructured interview protocol. IRB approval was obtained before conducting interviews with Rural Scholars and community mentors. Semistructured interviews with open-ended questions were used to allow participants to express their viewpoints and share their experiences more openly without interference or bias from the research team (Creswell & Poth, 2018). Scholars were asked questions regarding the program's effectiveness, perceptions of the focus communities in which they lived and worked, the changes witnessed or still needed within the communities, improvements necessary for the Rural Scholars program, and their personal development because of having participated as a Scholar. Community mentors were asked about their experiences working with Scholars and their overall impression of the Rural Scholars program writ large, next steps for both the communities and the Scholars, perceptions of the Rural Scholars program's overall impact, and improvements that should be made for future iterations of the Rural Scholars program.

At the conclusion of the interview, statements by all parties were transcribed verbatim in Zoom, and member checks were conducted where participants confirmed the accuracy of the data by assessing the moderator's summary of the discussion (Creswell, 2012). Transcriptions and audio were generated automatically from Zoom after each interview and maintained on a password-protected cloud database. Internal consistency was addressed by comparing the interviewer's field notes with the participant's recorded responses. All identifying information of interviewees was removed. After reviewing transcripts, semantic codes were created based on verbal and underlying meanings within participant responses (Flick, 2018). Glaser's (1965) constant comparative method was used for data analysis. Thematic analysis prompted the comparison of topics between interviews (Flick, 2009). Occurrences in each interview were coded and compared with incidents in other interviews (Glaser, 1965). Codes were used to label and compare data, which were then sorted into themes using MAXQDA software.

Measures of Trustworthiness

Establishing measures of trustworthiness is critical when evaluating a research study's merit (Lincoln & Guba, 1985). In this study, validity was established through credibility, transferability, dependability, and confirmability. Faculty members with a background in qualitative research reviewed the interview for credibility, and a member check was conducted to ensure confidence in the accuracy of the study's findings (Creswell & Poth, 2018; Lincoln & Guba, 1985). In-depth details of the data collection methods and analysis are explained to allow for the transferability of the study's findings to other contexts (Lincoln & Guba, 1985). Auditing processes created documentation trails to ensure the results were consistent, traceable, and dependable (Flick, 2009; Lincoln & Guba, 1985). Specifically, a faculty member reviewed the audit trail, including interview notes and audio files from Zoom, to certify that the results represented participants' responses and not the researcher's bias, which confirmed the neutrality of the results (Lincoln & Guba, 1985). Confirmability was further established when credibility, transferability, and dependability were achieved (Lincoln & Guba, 1985).

Reflexivity Statement

It is important in qualitative research that the authors provide a reflexivity statement and share their backgrounds and any biases that may have influenced the way they analyzed the data. Therefore, this section is devoted to providing an overview of the author team. All coauthors are part of the leadership team of the Rural Renewal Initiative at Oklahoma State University. Three coauthors serve as codirectors of RRI, and the other is the initiative coordinator. Each has lived, or currently lives, in a rural community. Each grew up with an agrarian background. Two of the authors are originally from Oklahoma, and three are faculty members in the Ferguson College of Agriculture at Oklahoma State University. As an author team, we freely admit our ad-

miration for rural people in rural places. We see a community's potential instead of its challenges, and we prioritize its assets over its deficiencies. Regarding the Rural Scholars program, it is a major component of our overall mission at RRI. From its inception, our team designed the Rural Scholars program as a core component of RRI. One of our authors teaches the course that prepares the Scholars for their internship, three of the authors have independently mentored a Scholar throughout the internship experience, and all authors provide general guidance to Scholars during their 10-week internship experience. Therefore, each member of our authorship team is deeply invested in the success of the Rural Scholars program. Understanding this mindset, we asked a third-party evaluator, who was not directly involved with the program, to conduct the interviews and collect the data necessary for this study. We also took measure to consider and limit our biases as we sifted through the qualitative data. Therefore, we believe the data collected are authentic and genuine and tell the full story of the program from the perspective of those who participated.

Quantitative

In addition to interviews, survey instruments were administered to citizens at community events to gain their perspectives on the program. Quantitative research allows researchers to ask specific questions using an instrument to obtain measurable and observable data. Convenience sampling was used by collecting data from community members who attended the Rural Scholars Showcase events at the end of the summer due to their accessibility and familiarity with and overall interest in the program (Creswell, 2012). The participants who provided quantitative data were community members who lived and worked in the geographic areas where the Rural Scholars were stationed during their internship. IRB approval was obtained before community member data were collected.

Because survey instruments have been deemed an effective way to research trends, such as community interests (Creswell, 2012), a cross-sectional survey design instrument was developed and used to collect data from participants at one point in time to examine individuals' attitudes and opinions toward the Rural Scholars program. A total of 61 survey instruments were completed by community members in 2021 and 2022. Responses from hard copy survey instruments were later transferred into Qualtrics for archiving and analysis. Open-ended responses were analyzed using thematic analysis to compare written statements between survey instruments (Flick, 2009). Quantitative data were collected using a 5-point Likert-type scale and analyzed using descriptive statistics where 1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, and 5 = *strongly agree*.

A panel of experts assessed face and content validity of the survey instrument. In this study, validity was achieved when these experts determined that the instrument would identify what it was intended to measure (Creswell, 2012). Specifically, the panel of experts have all worked in rural communities and have experience with social science research studies and designing survey research tools.

Results

Research Question 1: What Was the Experience of Scholars Involved in the Rural Scholars Program?

To understand Scholars' experience within the Rural Scholars program, participants were asked to describe their experiences relating to research, community service, and living in their assigned rural community. The data yielded three major themes: (1) preparation and clear expectations are essential for success, (2) the people made the experience, and (3) new experiences led to personal development. The following sections describe each theme in detail.

Preparation and Clear Expectations Are Essential for Success

Preparation and expectations helped numerous Scholars enter rural communities ready to begin their projects, whereas a lack of preparation and clear expectations hindered other Scholars from feeling competent to conduct their projects. The level of preparation Scholars experienced going into communities varied depending on their research mentors and community service interests. When reflecting on service opportunities, one Scholar said, "I was very well prepared mostly because I had a game plan for what I wanted to do for my service, and people are always looking for volunteers for service." However, another Scholar stated that "More supervision and more accountability would have served our research projects better."

Regarding research projects, some Scholars

felt their ability to collect data was hindered by a lack of communication and clear expectations laid out by research mentors, which led to delayed data collection, creating a stressful push to collect data in the second half of summer. One Scholar said:

> I feel like a lot of [students] . . . didn't start [collecting data] until mid-July, because they just didn't know where to start, or they didn't have good communication with their research mentor. So, I think that's something that could definitely be improved.

When research mentors remained actively involved throughout the 16-week course component of the program and the hands-on summer experience, preparation and expectations were less of a hurdle for Scholars. One Scholar reflected on their experience, saying:

> The week that I moved to Frederick, we had a meeting on Zoom . . . and they were like, these are the dates that we're gonna do stuff, and before then this is what I expect of you. And so that was really nice, just having that structure. I think that prepared me well.

Another Scholar felt research mentors should communicate anticipated end goals of research projects to help Scholars connect the research tasks to the community in which they are collecting data. The Scholar said:

> I think there could be more clarity about what the end goal is. . . . This past summer I felt like there were just so much little bitty random projects, but I could never figure out how it was tying into the big picture about how what I was doing was going to eventually end up positively impacting the community I was in.

The People Made the Experience

Scholars appreciated the opportunities they had throughout the program to collaborate with other Scholars and members of the community and form authentic relationships and friendships along the way. One Scholar explained their time in the community, saying, "People make experiences, and this is one of my best job experiences in college. A lot of that has to do with who I worked with, lived with, and talked to." One Scholar who participated in the program for two summers appreciated the opportunity to continue building relationships with community members they had met the previous summer. The Scholar said:

> I had already built relationships with [the EMS team] from the summer before. It was nice to go back and further those relationships and go on ambulance rides with them. They treat me like family, and I learn a lot from them.

For some Scholars, going into an unfamiliar community, not knowing anyone, was intimidating coming into their summer experience. As the summer progressed, they were welcomed into the community. One Scholar reflected on this experience and said:

> I kind of went in, knowing I'm going to a place I've never been before. I'm not going to know anybody. I kind of set low expectations just so that I wouldn't be surprised by how it was, and I feel like I made connections in the community, and I really enjoyed it.

The Rural Scholars program offered many Scholars a chance to develop communication skills and get out of their comfort zones. Scholars engaged with the community through service projects and learned how to communicate about their research projects in authentic ways to recruit research participants. One Scholar said:

> [The best part of the experience] was meeting the people down there and making those connections down there and just really being part of the town. I think that's the most unique thing about this internship is you get to move to a town and truly be part of it. I thought it was the most enjoyable part of my experience.

Not only did the Scholars enjoy forming relationships with members of the community, they also enjoyed the community formed among the group of Scholars. Throughout the semester and into their summer experience, Scholars worked together and shared a unique experience living in a rural community. One Scholar said:

> I think the best part was being in the community with the other Scholars and being a team and have each other. I really like how I got to know the Scholars that I was with and the connections that I was able to form.

New Experiences Led to New Perspectives and Personal Development

Exposure to new experiences and perspectives led Scholars to develop specific life skills and create different outlooks. Time invested living and working in rural communities helped the Scholars experience what life is like for community members, providing valuable insight for those who plan to work with rural populations in their future careers. One Scholar said, "[This experience] opened my eyes to the actual challenges faced in rural communities . . . that will help me as a public health provider, to step back and realize people get affected by these things in different ways."

Scholars had a fresh perspective of rural America and rural residents after completing the program. Some Scholars experienced a new culture and way of life that starkly contrasted with their typical lifestyles. One Scholar detailed the foreign feeling of moving from a city to a rural community, saying:

> I would say [the best part of this program was] the new perspective . . . having lived on my own in a place that I had never been to and basically a separate culture . . . that was extremely cool to be a part of because it wasn't just my job. That was my life for like three months. I think the research was great and the service is great, but thinking about what I did over the summer, that's what I remember most is just like living, existing there.

Even Scholars who grew up in rural communities felt they were seeing rural America with fresh eyes. Concepts taught in the spring class came to life as the Scholars spent the summer interacting in rural communities. One Scholar said, "I did feel like a lot of the principles that we talked about [in class] were true. And even though I had like grown up there, I didn't see it until we had talked about them in class."

Experiencing residents' deep sense of community pride and determination to improve their town surprised some Scholars and inspired them to pursue careers in rural areas. One Scholar was inspired after experiencing community members' passion and drive, saying:

> You see how much they care about their community and how much they're willing to put in the work to not just become a ghost town, and that's really inspiring to me. . . . I think it reinforced my passion for working in rural communities.

Scholars gained important interpersonal skills they will take forward with them into their professional and personal lives. Although new experiences made some Scholars uncomfortable, they all looked back on the challenging aspects and appreciated the skills they gained. Discussing new experiences, a Scholar said:

> It definitely made me grow, and they pushed me out of my comfort zone, which I really appreciated. It wasn't always the easiest thing to do, but from it, I gained a lot of leadership skills, communication skills, and connecting with other people so overall it was really good.

Overall, the summer experience was uniquely impactful for Scholars. Through community service, research, and collaboration, Scholars experienced personal development and gained perspective by integrating into the communities. One Scholar said, "There's the sense of community that's very important for people everywhere in Tillman County, and it brings up a form of uniformity. . . . I think that's one of the things that I enjoyed about it." They continued:

> Being able to come out of the city life and just experience [rural life], I think that was something I needed in terms of my attitude in my life. After Rural Renewal, I started developing more of a work ethic and focusing more on what I want in my life. This experience has changed me in that I am able to set my goals and understand how to deal with people better . . . and I'm thankful that I got to have this experience.

Research Question 2: What Was the Experience of Community Mentors Involved in the Program?

To understand mentors' experiences working with the Rural Scholars program, mentors were asked to describe their experiences working with Scholars, the faculty involved in the program, and the impact Scholars had on the mentors and their communities. The data yielded three major themes: (1) Scholar involvement in the community is critical for the success of the program, (2) clear communication and expectations were essential for success, and (3) the program had a positive impact.

Scholar Involvement in the Community Is Critical for the Success of the Program

Mentors emphasized the importance of getting Scholars actively involved in the communities. Scholars' level of community involvement was often correlated with their impact and success within the community, according to mentors. One mentor described the success of a Scholar who went out of their way to engage in community events and meetings, interacting with any community member they could. The mentor said, "He was not shy at all. He would jump right into a city council meeting." Advising future Scholars, the same mentor said, "Just jump in here. Teach us, learn from us."

Another mentor experienced the opposite, appreciating the program but feeling the Scholars in their community did not commit to getting involved in the community. The mentor said:

> I would like to see a little bit more involvement with our community. . . . We really didn't see a lot of [community service]. If we could see more of that, I think that would really be a big buy-in for anybody's community. More community service involvement, more participation with our community, I think that would have probably sealed the deal.

Many mentors found the Scholars they worked with quickly became involved, showing initiative and investing in the community. One mentor recalled their Scholars' involvement, saying:

> [The Scholars were] a great match for us. . . . They were really involved in the community, and they also volunteered at a food bank in another community, and when there was extra food, they would bring it here and put it out for people to pick up. I appreciated their investment.

Community involvement was a key focus of the mentors when discussing the program's impact. When asked about the length of the 10-week experience, one mentor said, "I think any shorter time, and they wouldn't be able to even really get involved in the community." Another mentor recalled their experience of Scholars finding new ways to get involved in the communities. The mentor said:

> We had several [Scholars] that would come on a weekly basis and volunteer when we were open and help serve the community. . . . They always ask questions about the [service] and how we operate. We had a shipment of turnips come in, and one of the students was able to take some of those turnips to another town in the county and help the FFA get [them] started in their gardens to raise.

They continued, advising, "Be involved in our community as much as possible. Attend activities or anything that's going on. Just be with the public . . . make [Scholars'] presence known."

Clear Communication and Expectations Were Essential for Success

Mentors needed clear expectations and communication from Scholars and from faculty facilitators at Oklahoma State University. One mentor recalled scrambling to help a Scholar find research participants once the mentor had learned about their study. The mentor said, "If we had known all the details of that program, we could have maybe drummed up some more [community participation]." Another mentor had a similar issue, not knowing how to help Scholars prepare for their research projects because the details and end goals were never shared. The mentor said:

> I knew when [the Scholars] first came, kind of a broad overview of what their project was, but I didn't really know how they were going to achieve it, and I didn't get feedback going through. . . . Just knowing some of that more in-depth, like here's what we're

> going to do, here's what we see and how we're going to achieve it. So, we as a community can ask them along the way, how's it going . . . so that maybe we could even help them broaden their research.

When sending Scholars into a community, mentors stressed the importance of communicating the purpose of the Rural Scholars program and creating realistic expectations within the community to avoid confusion and frustration from residents. Describing the community's first year working with the Rural Scholars program, one mentor said, "There was some misconceptions that Oklahoma State University was bringing money to town and was going to invest money into doing projects in town, and that's not really what it's about. It's about research."

During their second year participating in the Rural Scholars program, expectations became clearer. The mentor continued, saying, "The second year and on, I think expectations were set. Everybody kind of knew what was going on. After the first year, I think it's been great. I think that the expectations have been perfect."

Mentors emphasized the Scholars were going out into the community representing the Extension office and representing the university. Keeping steady communication between mentors and Scholars would help set expectations for the Scholars throughout the summer. One mentor said, "Come ready to be a professional. If [Scholars] come in the morning and connect with us, then we can say, okay, they are serious about what they're doing. We know what's going on."

One mentor felt their expectations were never communicated to them, which led to a disconnect between the mentor and Scholar. Aside from helping the Scholar collect research data, the mentor felt they did not play a role in the Scholar's experience. The mentor said, "I didn't feel like I knew what was expected of me. As far as mentoring goes, we didn't do anything because we didn't know what to do."

The Program Had a Positive Impact

Although Scholars joined the program to learn, mentors and community members appreciated the opportunity to learn from Scholars as well. One mentor said, "It's a two-way relationship, you know. It's for [Scholars] to learn, to help the community, but it's also for community members to learn as well."

Mentors appreciated when Scholars would add their new perspectives on community issues. When describing community members' reactions to Scholars' presence in the community, one mentor said, "We got to know [the Scholars] and felt like they were part of the community. They offered advice on things. It was nice to get an outsider's perspective on different projects." Another mentor said, "[The best part of this experience] was the interaction with different people with different views. They had different political views, social views, and views from different parts of the country."

One area of improvement for the program is communication between the RRI and community members. Mentors and community members would like to see the work of the Scholars promoted throughout the community. One mentor said, "If [Scholars] all wrote one thing [in the newspaper] about themselves and what their project is . . . it would help the community realize what they are here for and what they were doing for the community."

One mentor recalled a Rural Scholar's work repairing the house in which they were living. Originally, the mentor's office agreed to pay utilities for the Scholars all summer, but when the town's mayor saw the work that the Scholar did to the house, the bill was covered. The mentor said:

> When it came time to get that [utilities] bill at the end of the summer, [the mayor] said, "No, we're not charging anything. [The Scholar] did so many improvements, she did great things for us. . . ." That was really nice, and that spoke volumes, because our mayor's not easy to please, and she was highly pleased with [the Scholar]. When our mayor came in and told me that, I thought, okay. It has to be a good experience. . . . I mean it, she really was impressed.

Another mentor felt strongly about the positive implications the program has for rural communities, noting the impact observed through the Scholars over the summer. The mentor said:

> I've enjoyed [all the Scholars] that have been with us and everybody I've met. I hope they continue this program. . . . I think it's a benefit for [the Scholars]. I think it's a benefit for all the communities involved. You know . . . they have an opportunity to make a difference in somebody's life just by talking to them. And I think it needs to continue. I support it fully, and we're happy that we have [the Rural Scholars Program]. It's been a positive thing for us as well.

Research Question 3: What Are Rural Community Members' Perceptions of the Rural Scholars Program?

At the end of the Scholars' experience, students presented their summer's work at an event open to the community. A questionnaire was passed out to community members asking about the Scholars' impact on the community. When asked if supporting the Rural Scholars program was a good investment in the community, responses were rated on a five-point Likert-type scale, with 1 = *strongly disagree* to 5 = *strongly agree*. One participant's response to this question failed to record. Of 60 responses, the average rating was 4.95, indicating community members strongly agreed the program was a good investment in the community. When asked whether members of their community were working with Oklahoma State University faculty and students to find solutions for rural communities, responses were rated on the same five-point scale. Two participants' responses to this question failed to record. Of 59 responses, the average rating was 4.83, indicating members strongly agreed the faculty and Scholars involved in the program were working with community members to find solutions.

Community members also responded to open-response questions. One question asked, "What new insights or ideas have you gained from tonight or through your interactions with the RRI?" One community member said, "I've got hope that there are smart youth out there that care about a town like ours." Multiple residents noted the program helps community members address issues they may become blind to as they live in the community. One member said, "There are problems in rural Oklahoma State that we overlook simply by living here. With the help of RRI, they can be pointed out and possibly fixed." Some community members did not know about the program before the end-of-summer presentation event. One resident said, "I didn't know this program existed and I can see the tremendous effect on the community." Members felt the Scholars were knowledgeable about their research projects and the needs of the community. Residents felt excited seeing young people work together with community members to invest in rural communities. One resident said, "Together, we are making progress."

Another open-response question asked, "What is RRI doing that is helpful for your community?" Mentors perceived that research specifically focused on rural development was crucial, and the Rural Scholars program allowed research to be approached with fresh eyes and new perspectives. One respondent said, "RRI's research and openness are the thing I think are most helpful." Residents also appreciated the opportunities for social interaction and focus on community interaction. One member said, "They have encouraged the town's people." Another said, "[The Rural Renewal Initiative is] stimulating public awareness to improve." Community members also noticed the specific research and community service projects the Scholars conducted. Some projects mentioned included the creation of town gardens, beautification projects, telemedicine research, and water quality testing.

The last open-response question asked, "What could RRI do to be more effective in engaging with your community?" Members want the Rural Scholars program to return and continue getting involved in the community. One member said, "Keep coming back, keep spreading the word, and help us [find] solutions." Another said, "Continued presence each year will help build a relationship with the program and community. They have done a great job integrating." Residents appreciated the interaction and also felt that more communication, both during the summer while Scholars are in the communities and after, was needed to continue the interaction. One community member said, "Keep us posted on what is going on year around. Let us know what projects you all need help with. We would like to help." Another resident said, "Make this even more publicized to better represent the effort that is being expanded to help find solutions for our community." Last, community members appreciated the interaction

with students and faculty at Oklahoma State University and the attention the program brought to the everyday issues they face. One respondent said, "It's a great feeling to know we are not alone in the fight to survive."

Conclusions and Recommendations

Scholars, mentors, and residents in the communities generally had positive experiences with the Rural Scholars program. Scholars benefited from high-impact experiential learning, and they felt their time spent living and working in rural communities provided context for material learned in the course, connecting education and personal experience. Scholars adapted their thinking and perceptions based on lived experiences and reflection on those experiences (Menaker et al., 2006). These experiences and reflections facilitate the learning cycle (Morris, 2020). Scholars engaged in a contextually rich, concrete learning experience as they lived and worked in rural communities. They engaged in reflective observation; however, the frequency and depth of observation varied based on frequency of contact with research and community mentors. Scholars were able to form context-specific conclusions based on their experiences in rural Oklahoma State and engage in practical experimentation through their community-based research projects.

Scholars reported they gained new skills, ideas, and opportunities during their summer experience, particularly with problem-solving and social interactions. The Rural Scholars program demonstrates how service-learning provides high-impact learning opportunities for undergraduate and graduate students (Felten & Clayton, 2011).

Living in rural communities led to a deeper understanding of issues rural communities face, as Scholars experienced them firsthand. Perceptions of rural residents changed for many Scholars during the summer experience when they learned how community pride drove residents to work toward a better future for their towns. As students provide context for their knowledge through experiences, the connection stimulates a deeper understanding of the world (Wawrzynski & Baldwin, 2014). Many Scholars felt their experience through the Rural Scholars program set them up for success academically, professionally, and personally. This service-learning experience allowed Scholars to enhance important life skills, and further research should explore any subsequent improvements in their academic performance (Bringle & Hatcher, 1996).

Scholars also felt they formed valuable relationships through interacting with other Scholars. They all participated in a unique program and bonded over the shared experience. The program brought students from different departments together to learn about research and rural community development, providing them an opportunity to consider different perspectives. Such opportunities encourage the development of communication and teamwork skills, which are further enhanced when students come from diverse disciplines and backgrounds (Harris, 2004).

The Rural Scholars program embodies the elements of service-learning by distributing power equally between communities and university affiliates, developing lasting and authentic relationships, and working toward changing social perspectives (Mitchell, 2008). Although community mentors did not mention an imbalance of power between the community and university, they did note a disconnect in communications and expectations. Students felt developing authentic relationships was the best part of their experience, and community members appreciated the level of involvement Scholars maintained throughout the summer. Individuals and groups of individuals within communities worked with Rural Scholars; however, there were few partnerships between community organizations and Rural Scholars.

Rural communities with declining populations often struggle to maintain viable community organizations that have the capacity to work with Rural Scholars. Notable exceptions were one local food bank and one community health clinic in the focus communities, which worked closely with Scholars. Community members appreciated the outside perspective from students and faculty members because residents often become blind to the daily issues impacting their towns. Together, both parties collaborated to address community issues. Instead of focusing solely on the Scholars' learning experience, the Rural Scholars program is also designed to address rural issues by addressing their root causes, inspiring students to become social change agents who actively engage communities (Mitchell, 2008).

Mentors and Scholars alike perceived that increased communication and clearer expectations would benefit the program. This observation is in keeping with previous research that found faculty involvement affects the quality of service-learning experiences, and it is crucial to define clear expectations and outcomes for students and communities (Harris, 2004). Many Scholars and mentors mentioned a lack of clearly defined expectations, which affected research and service projects throughout the summer. Mentors felt that when the RRI engages with a new community, they should clearly define the role of research in the program to ensure that community members do not misconstrue the program's objectives and get frustrated due to miscommunication. We recommend future projects heed the advice of community members and articulate the expectations and purpose of the program and specific research projects.

Community members felt continued communication after each summer would benefit residents, deepening relationships and allowing them to see research results and continue momentum within their community. As research mentors have some consistency from one year to the next, they should maintain meaningful connections with communities, which is especially important in rural communities (Harris, 2004). Reflection is an important element in maximizing impact for community members (Chupp & Joseph, 2010), and this is an area the Rural Scholars program could improve on. Scholars and mentors reflected on their experiences with the program in interviews, but there were limited opportunities for collaborative reflections so they could learn from one another's experiences. Moreover, research scientists from Oklahoma State University also should be consulted on their perspectives and reflections on the process.

Residents perceived the program as a valuable contribution to the community, which is consistent with previous research (Ferrari & Worrall, 2000). Many community members in this study appreciated the future potential of the research projects being conducted in their communities. However, when some community members were unclear about the program's objectives and expected a more tangible outcome, they were disappointed in research results. This outcome aligns with previous work showing that when research is incorporated in service-learning opportunities, it is essential for faculty to clearly communicate the unpredictable nature of research results (Harris, 2004). This experience suggests that community members' perceptions of research largely revolve around the communications and expectations set at the start of the program.

No community members reported feeling patronized or isolated when interacting with the program, which may indicate the Rural Scholars program successfully shared decision-making power with community members (Mitchell, 2008). To maximize impact for residents, they should be involved in planning, implementing, and assessing activities (Chupp & Joseph, 2010). Community members were involved in planning and implementing service and research projects; however, mentors wanted to be involved earlier in the planning stage to contribute to projects more effectively.

The Rural Scholars program encourages community members to play an active role in projects, working alongside students and faculty in conducting research and completing service projects to improve communities. This type of reciprocity in the service-learning experience is essential to connect academic context to public issues (Felten & Clayton, 2011). The program focuses on student learning, serving communities, and leaving community members better equipped at the end of the experience, three tenets that serve to reify the three principles of service-learning as articulated by Sigmon (1979).

Service-learning opportunities like the Rural Scholars program at Oklahoma State University are a valuable way to establish relationships between academic institutions and rural communities. The Rural Scholars program provides faculty and students a unique opportunity to engage in community outreach and work with community members to address relevant issues and learn new perspectives. By establishing stronger bonds between land-grant institutions and Oklahoma communities through place-based service-learning programs, research can become more relevant and applicable to community residents.

Students participating in service-learning opportunities should focus on engaging with the communities in which they work (Harris, 2004). Successful students took the initiative, communicated with community members, and maintained consistent involvement in the community throughout the experience. When participating in experien-

tial learning, these types of interaction with the environment start the learning cycle (Menaker et al., 2006). Students also should make sure they begin a service-learning experience with a plan in place for executing projects, connecting with relevant individuals or organizations, and integrating into the community. Mentors and Scholars had the opportunity to reflect on their experiences during interviews; however, providing an opportunity for collaborative reflection could enhance the impacts of the program and provide more clarity for mentors and Scholars.

Faculty members involved in service-learning opportunities at land-grant institutions should ensure that the opportunity is designed to work *with* communities, not *on* communities. When instructing students prior to the service experience, heavy emphasis should be placed on how the students can form relationships with community members. Service-learning experiences can have negative impacts on students and communities when implemented incorrectly, further perpetuating an us–them dichotomy and reinforcing hierarchical structures (Pompa, 2002). Moreover, faculty members should maintain open lines of communication with community mentors and students during the experience, so that expectations are clear, and all parties feel confident and supported in their projects. If faculty members do not prioritize balancing university–community dynamics and forming relationships with community members, Scholars may have a less impactful service-learning experience, and existing community relationships may suffer.

Faculty involvement in the research mentor process is a critical element of student success in the Rural Scholars program. If faculty are not accessible to students or community mentors over the summer while research is being conducted, it negatively impacts community dynamics, student experience, and quality of research output. In the future, additional effort should be devoted to opening lines of communication year-round to deepen the relationship between the university and the community and share the impacts and practical implications of the projects conducted during the summer experience. An orientation program or best practices guide for community mentors would also be beneficial in laying out expectations, timelines, how to work and connect with Scholars, and resources available to mentors through the RRI leadership team.

Community mentors should maintain an open mind when participating with students and faculty. As service-learning experiences become established, community members can spread the word to residents and surrounding communities to help reach populations that other communication methods may miss. Encouraging community participation from residents helps ensure that the engagement efforts from university parties are not one-sided. Participation in planning, implementing, and reflecting on projects maximizes impact for community members (Chupp & Joseph, 2010). Just as students should focus on actively engaging in communities, residents should be intentional about interacting with students.

Future research should explore how to efficiently foster communication between communities and universities during service-learning opportunities. One possible avenue would be elaborating on best practices for communication throughout the planning and implementation processes of research and service projects. Identifying and addressing the specific communication needs of research mentors, mentors, and Rural Scholars could elevate the effectiveness of the program. Community members' perceptions of service-learning experiences should continue to be explored more deeply (Stoecker & Tryon, 2009). Research could compare residents' perceived impacts of the program at intervals to evaluate whether the community perceives more impact with longer participation in the program. The correlation between involvement in service-learning opportunities and community resilience perceptions should be investigated to determine whether participating in the Rural Scholars program impacts community members' perceptions of their community's well-being. Future research should also assess the effectiveness of the program from a faculty perspective.

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Community-Engaged Knowledge Mobilization for Health Equity: A Mixed-Methods Evaluation of the City Symposium Series

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Abstract

Finding ways to move knowledge-to-impact is a key priority for research funding agencies, universities, and academics. However, academic engagement with the broader community is not without tensions and challenges, including arriving at mutual benefit and relevance, and addressing power dynamics and often incompatible communication practices. This study used a mixed-methods approach to examine a unique event series of public dialogues that brought together diverse community and academic perspectives around health equity issues. Findings suggest the series successfully merged strategies from both the knowledge mobilization and citizen engagement/public involvement domains to spark conversations in one community regarding health equity and social justice. We provide initial descriptive evidence that the format was successful in achieving its proximate goals, and was appreciated by those who participated and attended. We position this type of activity as a promising strategy to effectively bring academic research to the broader local community.

Keywords: knowledge mobilization, community-engaged scholarship, health equity, citizen engagement, mixed-methods research

Growing a healthy, vibrant, equitable city requires conversation, listening to others, challenging what we think we know.

—Survey Participant 42

Community-engaged research has emerged as a key priority of research funding agencies eager to demonstrate "impact," universities wishing to bridge "town and gown" (i.e., those affiliated with an academic institution versus the broader community in which it is located), and academics whose research goals include public awareness and community impact. However, activities in this space are not without tensions and challenges, including finding and defining mutual benefit and relevance for academic and community interests, and addressing power dynamics and often incompatible communication practices, among others (Wenger et al., 2012). This study examines a unique approach to acknowledging these tensions and bridging gaps via community-academic partnership in a series of public dialogues called City Symposium.

Background

In applied research domains in Canada, two related concepts have emerged as key to bridging research-to-action gaps. In the health sciences, knowledge translation (KT) is defined as "a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve . . . health . . . , provide more effective health services and products and strengthen the health care system" (CIHR, n.d). Its close cousin from the social sciences and humanities, knowl-

edge mobilization (KMb), is "the reciprocal and complementary flow and uptake of research knowledge between researchers, knowledge brokers and knowledge users—both within and beyond academia—in such a way that may benefit users and create positive impacts. . . ." (SSHRC, n.d.). (Note that CIHR's [2021] new strategic plan is now beginning to move away from the KT terminology, toward KMb.) Taken together, these definitions emphasize that for research-derived knowledge to be useful and impactful in the "real world," significant attention must be paid to how knowledge is framed, developed, prepared for, and shared with various kinds of audiences positioned to act on it.

Alongside this growing awareness, however, is the persistent knowledge-to-practice gap between what is known through research and what is implemented in health and social service policy and practice (Greenhalgh et al., 2016). One key development has been the more intentional inclusion—through integrated forms of knowledge translation/mobilization—of end users of research knowledge, and community stakeholders more broadly, in the research process (Graham et al., 2006; Kothari & Wathen, 2013, 2017). As Banner et al. (2019) emphasized, for research evidence to be relevant, it must be known, valued, and used by stakeholders. For complex problem spaces such as health inequities, the need for community-engaged approaches to developing and sharing actionable research is even greater (Banner et al., 2019; Wathen, 2022). Especially in these spaces, more passive or academically focused models of knowledge dissemination are being augmented by inclusive and transdisciplinary approaches that address complexity (Bowen & Graham, 2013) as a key way not only to create and implement better evidence-informed services and policies, but also to include, via community engagement (CE) strategies, service users and the general public in deciding how best to develop and use research-based approaches to service design and delivery (Banner et al., 2019; De Weger et al., 2018, 2020; Elsabbagh et al., 2014).

A Focus on the General Public as a Key Stakeholder

Most knowledge mobilization research has focused on specific groups of stakeholders, especially those planning and delivering programs and services, those in policy roles developing and funding services, and, more recently, those served or affected by a program or service, often termed "people with lived or living experience" (Bowen & Graham, 2013; De Weger et al., 2020). In health and social service research, less attention has been paid to sharing and discussing or codeveloping findings with a broader range of stakeholders, including civil society organizations, the media, and the general public (as opposed to patients/service users; Liabo et al., 2020). Although broader public stakeholders can have important contributions, a challenge is the lack of institutional structures to support their role and the costs associated with enabling participation (Bowen et al., 2005). In their realist review of effective public involvement (PI), De Weger et al. (2018) identified a range of best practices, including (research/program) staff support and facilitative leadership based on transparency, a safe and trusting environment for input, citizens' early involvement, shared decision-making and governance, acknowledging and addressing power imbalances between citizens and professionals, seeking out and supporting those who feel they lack the skills and confidence to engage, finding quick wins, and taking into account actors' motivations. These practices overlap with strategies identified elsewhere in the community and citizen engagement literature, with an additional practice being attending to the idea of "critical mass"—that there are enough citizen voices to ensure that they are heard, and that they are not tokenistic, or that individuals are not made to feel they represent all possible communities, especially those facing structural marginalization and/or stigma (Bigby & Frawley, 2010; Camden et al., 2014; Cotterell, 2008; McGrath et al., 2009; Williams et al., 2005). Authentic engagement increases stakeholder awareness of the evidence, available resources, and their potential to influence processes that impact them and their communities. This is a key pathway to research uptake and impact.

City Symposium: A Unique Citizen-Focused Knowledge Mobilization Strategy

City Symposium (CS) was a series of public-facing events developed in partnership among two Western University faculties (Health Sciences and Information & Media Studies) and 10 community organizations in London, Ontario, Canada (community organization list available on the

CS website, https://citysymposium.com). The Centre for Research on Health Equity and Social Inclusion (CRHESI, itself a university-community partnership) was the event funder, facilitator, and organizer. The primary goal of the CS series was to provide a "town square": a place where all citizens were invited to learn, ask questions, and encounter new perspectives. The nine events held in 2019 and 2020 each averaged between 125 and 250 attendees and included four speakers: an artist, a researcher, a civil servant, and an activist, who discussed a predetermined theme, selected to reflect the United Nations' Sustainable Development Goals (SDGs; Department of Economic and Social Affairs Sustainable Development, https://sdgs.un.org/goals) and of relevance to CRHESI's overarching theme of equity and inclusion. The nine topics were as follows: ending poverty, quality education, confronting anti-Black racism, work and employment, reducing inequalities, health and well-being, gender equality, sustainable cities, and responsible production and consumption.

From the perspective of the university partners, the goal of the series was to bring relevant health equity research into broader community discourse, but not in such a way as to monopolize the discussion. Embedding a presentation of current research alongside the diverse perspectives of the other three presenters positioned research as a part of, rather than the full solution to, complex global and local problems. The intent was to share research activity with the community in an engaging, constructive, and reciprocal environment, attending to the key strategies for engagement described above.

Prior to and immediately following each session, a local musician or spoken-word artist was invited to entertain the arriving/departing audience (in both online and in-person modes). After the host introduced the format and topic, each speaker was allotted 12 minutes to present their perspective. We asked every presenter to tell a story about their work—that is, to speak in a narrative arc, and provide a call to action such that attendees were given tangible and constructive next steps to consider. At the conclusion of each presentation, a member of the host team would conduct a short "on stage" interview with the speaker, to help attendees make explicit links between what they just heard and the question, "What can I do?"

In the pre-COVID-19 period, the series moved locations throughout London (libraries, museum, theatres, etc.). In March 2020, the program shifted online. Given the ever-changing themes, locations, and presenter lineups, a "host team" cohosted each event. This team of three individuals provided a consistent presence and face of the series, across events. Videos of each session are available on the CS website (https://citysymposium.com/video/).

Research Question

Although literature in the field of knowledge translation/mobilization has continued to expand, most of the focus has been on practice and policy applications of research evidence, with less emphasis on strategies to move research-based knowledge to the public, or to blend academically derived knowledge with the lived and living experience and tacit knowledge of civil society and the broader public. Thus, City Symposium is a unique model, engaging a large group of citizens over the course of 2 years. This study provides a unique opportunity to begin to fill an important research gap.

We posed an overall research question: How effective was CS as a community co-led and public-engagement-oriented knowledge mobilization strategy? Specifically, we asked: (1) What were the impacts of CS for attendees, presenters, and partners? (2) What features and delivery modes (in online and in-person delivery) were seen as effective, and why? and (3) How can CS be improved?

Method

This study used a mixed-methods approach and was approved by Western University's Non-Medical Research Ethics Board (Protocol #119114).

Sampling and Recruitment

Interviews With Partners and Presenters

Participating CS partners were recruited from the group of 14 project liaisons, 10 of which were partnering community organizations (library, arts organization, theatre, museum, etc.) and four of which were partnering university/college units. Participating CS presenters were recruited from the list of 38 presenters from the nine CS sessions, including academics, artists, advocates, and public servants. The CS coordinator (JS, also a research team member) contacted all part-

ners and presenters by email asking if they were interested in completing an interview. Interested partners and presenters received a Letter of Information, returned it by email, and were then contacted by another team member to schedule an interview.

Survey of Attendees

To recruit survey participants, the CS coordinator used a list of 1,338 email addresses collected from registration information from individuals who had attended one or more CS sessions. The recruitment email contained a link where attendees could read the Letter of Information and continue to the online survey if interested in participating.

Data Collection

Interviews

Two research team members conducted semistructured interviews with partners and presenters. The interviews were completed from October through December 2021 and lasted 15–20 minutes. The interview questions addressed (1) reasons for involvement, (2) number/type of sessions attended, (3) impacts of involvement on thinking and behavior, (4) overall effectiveness and effective features of CS, (5) suggestions for improvement, and (6) whether or not (and why) they would or did recommend CS to others. All interviews were audiorecorded with participants' permission and transcribed verbatim by the two team members.

Surveys

In addition to demographic questions, the online survey asked participants to (1) rank 10 aspects of CS from 1 (*most important*) to 10 (*least important*), (2) rate seven impacts of CS on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*), and (3) indicate, from a list, which "community-builders" (i.e., local organizations, services, or locations, e.g., museum, theatre, arts council) they were more aware of as a result of CS. Survey participants were also asked to provide write-in responses to elaborate on their experiences with CS, its impacts (on the city and on themselves, e.g., their learning, work, etc.), and suggestions for improvement (including CS topic suggestions). All participants completed the survey in August 2021.

Coding and Analysis

Write-in comments from the survey and qualitative interview data were coded and analyzed using thematic analysis (Braun & Clarke, 2006), with a blended deductive (i.e., predefined codes linked to research questions) and inductive (i.e., creation of codes not anticipated at the outset) approach. After reading and rereading the interview data, two team members independently created preliminary codebooks. The codebooks were reviewed and discussed with a third team member, resulting in a single consolidated version. This codebook was applied gradually to the interview data, and the three team members conferred at intervals to allow for an iterative process of revision, as needed. The two team members applied the same codebook to the written survey responses, and no further revisions were needed. Finally, the coded documents were compared and a third team member settled any disagreements. All coded text was arranged by code in a separate document for ease of analysis. The last author read and reread the quotes, pulling across themes as needed to answer the research questions. All authors were involved in the selection of sample quotes for presentation in this article.

The two team members also applied closed codes to the interviews in order to describe (1) the number of sessions attended, (2) whether participants attended both in-person and online sessions and what their preferred mode of delivery was, (3) whether they thought CS was generally effective, and (4) whether they would or did recommend CS to others. Similar to the qualitative coding process, the team members compared their codes and a third team member was consulted when agreement could not be reached.

The quantitative survey data and interview closed codes were analyzed with descriptive statistics (frequencies, percentages, means) in SPSS Version 28.

Results

Participants

Of the 12 interview participants, four were partners and eight were presenters. Demographic information was not collected from interview participants. Interviews lasted 15–20 minutes on average. Most interview participants (n = 10, 83.3%) had attended two or more sessions (for presenters, this included the one at which they presented), including at least one of each delivery mode.

Of the 48 survey participants, most were women, including transwomen (n = 36, 75%). Others were male, including transmen (n = 8, 16.7%); nonbinary (n = 1, 2.1%); or did not specify (n = 3, 6.3%). The most commonly represented age group was 55+ (n = 20, 41.7%). Most survey participants had attended two CS sessions (n = 20, 41.7%); the average was 2.6 (SD = 1.36; range = 1–7). As partners and presenters were also on the attendee email list, individuals could have contributed data via both survey and interview; however, the existence or degree of this overlap is unknown because survey participation was anonymous.

Due to overall commonalities in questions and their intent in the survey and interviews, findings are presented in integrated thematic domains across the data sets.

Positive Impacts

Overall, both survey and interview participants were very positive about CS. All survey items regarding its impacts were rated above 4 on average (Table 1), and responses of disagreement (i.e., 3 and under) were infrequent. A number of specific positive impacts of CS were described by interview and survey participants; these are described below.

Changes in Knowledge, Attitudes, and Practices

The impact most highly endorsed by survey participants was "The City Symposium has exposed me to new ideas" (Table 1). In line with this finding, one of the most common impacts described by both participant groups was increased awareness and understanding. These comments often related to equity or the specific CS topics. Representative survey participant responses included, "Broadly speaking, I have become more attuned to the ongoing issues of our community . . . homelessness, food security and racial challenges" (Survey26) and "What stood out to me was how honest the conversation [was] and how it pertained to the local community. Having the local lens and representation put into perspective how these issues are happening right here in London" (Survey28).

Although more common among survey participants, interview participants also described this impact. For example, one presenter said, "I think too, like on a personal note, anytime you have an opportunity to share your experience with an audience or within community, you learn something" (Presenter3).

This theme also presented in the many comments about the "different perspectives" that attendees (and presenters/partners) were exposed to at the sessions. In addition to being discussed as an effective feature of CS (see Effective Features and Modes of Delivery section, below), the varying viewpoints brought forth by the different speakers, and any subsequent discussion, were also seen to broaden people's understandings of the topics and/or their community. For example, one survey participant (Survey36) wrote, "It offers new perspectives and voices to London's public scene,

Table 1. Impacts of City Symposium, Attendee Survey Mean Ratings

City Symposium Impact Item (*n*)	Mean	*SD*
The City Symposium helps make London a better place to live. (45)	5.58	1.215
The City Symposium has influenced my personal choices. (40)	5.10	1.297
The City Symposium has influenced my professional choices. (30)	4.67	1.668
The City Symposium has influenced the way I work or study. (33)	4.61	1.435
The City Symposium has exposed me to new ideas. (47)	5.87	1.209
The City Symposium has introduced me to new people or networks. (43)	5.28	1.386
The City Symposium has had other impacts on me. (29)	4.86	1.217

Note. Respondents rated impacts of CS on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*); higher scores indicate stronger agreement.

and changes and challenges the dialogue of our community." Another (Survey47) wrote, "I think the world today causes us to stay in our own bubbles of influence, surrounded by people who agree with us. I think City Symposium helps expose you to different perspectives on a given topic." Finally, multiple interview participants noted that the voices heard at CS were ones they normally wouldn't hear, for example,

> I get involved in a lot of research and supervision . . . but I'm not involved personally, in doing a collaborative project with [the] community. . . . I don't get the same level of interaction or level of exposure is a better word, I think, to the experiences of those who live in the community. Right? So I particularly grew and benefited from the community members who were part of those sessions. (Presenter1)

As another presenter said:

> One of the researchers spoke about her work with migrant workers. That's a perspective that I don't have access to firsthand. And based on the feedback she provided from her participants, I was really . . . I still, still remember that presentation. And how impactful it was. (Partner2)

Although not as prevalent a theme, some participants did discuss changes in attitudes because of CS. For example, this survey participant changed their views after attending the session on confronting anti-Black racism: "I look much less to my friends and colleagues of colour to teach me about antiracism work, and am more likely to recognize that this is my responsibility. . . ." (Survey41). Some interview participants noted no or little change in their awareness or attitudes. For some, this was because their work was already related to the topic. Others noted having their existing beliefs reinforced, for example,

> I think if anything, it just strengthened my commitment to that kind of work and to the need for us to be creating opportunities for dialogue for people coming from various different sectors, including people of lived experiences. (Presenter2)

Although specific instances of behavior change were less evident, one interview participant did note that CS influenced their approach to teaching:

> So I think I have become better at being somebody who brings up these critical issues and initiates conversations with my graduate students, in terms of research, and the decisions we make as researchers, and the responsibilities we have to our community, and I think that's in part because of the series. (Presenter1)

Similarly, this person spoke about considering changes in their work and personal life:

> I can't remember exactly what, but I remember like afterwards talking with my partner and being like, we should do this differently, and at work I should do this because it would be more equitable. So, I would say it didn't change my mind, but it maybe gave me more ideas about what we could do differently. (Partner3)

Other common ways in which people's behavior was influenced by CS included changing how or what they communicated with others (e.g., using different terminology or sharing information they had learned at CS) and making an effort to educate themselves further after CS. For example, one survey participant (Survey33) noted, "I am retired, but the symposiums have led me to read or follow other related topics . . . [and given me] increased confidence to attend public forums."

Finally, some participants described the *potential* for action because of CS, as this series of quotes indicates:

> I think we have to trust in the idea that where conversation can happen around how we can do things differently, eventually things will be done differently. So I think it's important. (Presenter4)

> City Symposium offers space to engage in discussions about important social justice concerns and opportunity to walk away from the event with practical ways of actively engaging in justice work. (Survey41)

> By bringing together people who are curious about the same thing and introducing them to each other and to people with expertise, local collective knowledge is increased and opportunities for collective action for change may be generated. (Survey9)

Making Connections and Expanding Reach

Interview and survey participants said that a key benefit of CS was the opportunity to make connections, often through informal networking before or after (usually in-person) sessions. For some, this meant meeting new people or feeling a sense of community at the event itself. For example, one participant (Survey34) wrote, "As a person who is fairly new to the city, it has given me some way to connect to others and continue my personal development." Another observed,

> So you see people there you know, you get to meet new people, you feel that sense of community, and that that sense of support that we were so used to getting, you know, in a one-on-one environment, right, and, and it's very energizing, and it's very . . . it instills a sense of community that I really appreciate. (Presenter1)

Others reported the potentially more lasting impacts of breaking down barriers and forming relationships. For example, one said, "I think there's so much merit to creating a forum where we can bridge divides and cross sectors and bring people together who don't often come together to talk about issues" (Presenter2). Another interview participant commented on relationships:

> City Symposium as an example, allowed for me to start building relationships with people in the community who are working in this area, and that's I think, really been helpful through the pandemic to continue to build those relationships. Public health has been at the core of the COVID response for the community, but you know, we only do so when engaged with partners and with other leaders. (Presenter4)

Related to the opportunity to form new interconnections was the ability to also help stakeholders, broadly defined, expand their networks with an explicit eye to equity, especially by making both on- and offline venues accessible.

> So, it provided the audience with lots of different perspectives that they would not normally get from a traditional session. And it also is probably a good way of attracting a broader audience, because each one of those groups you just described has their own audience. So now you actually have the potential of having four audiences combined. (Presenter8)

Community Knowledge

On average, participants were more aware of different community organizations and resources (i.e., "community-builders"; M = 3.67, SD = 3.74, range = 0–13) because of attending CS. Less than a quarter (n = 11, 22.9%) checked off no community-builders (although it is not clear whether they were not more aware of any or simply skipped the question). This increased awareness of community resources was described by an interview participant: "What was fantastic for me was to hear about what these organizations are doing about it. You know, how to actually help support them and just get to know a little bit more about what these organizations offer" (Presenter6).

Partner- and Presenter-Specific Impacts

Overall, partners and presenters reported many of the same positive impacts of CS as attendees. However, they described a few additional benefits associated with their specific involvement. For example, partners appreciated the opportunity to collaborate with other partners: "I think that cosponsorship and collaboration are the bomb, like that's what makes it worth doing" (Partner4), and one partner reported that it helped them learn about a public engagement format that they could use in their own work. Benefits unique to presenters included personal fulfillment from participating (e.g., because the topic was important), the chance to share their work with others, and the opportunity for personal growth by speaking at a public event. Finally, both partners and presenters appreciated that involvement in CS was not onerous, the opportunity to share their work with others, the ability to achieve organizational goals through CS, and that they could raise awareness of their organization/service to the London commu-

nity. With regard to the latter benefit, one presenter noted, “I thought it was a fantastic opportunity to continue providing public education. It is one of our mandates . . . the symposium [topic] actually met the needs of our program . . .” (Presenter6). Similarly, a partner said,

> I thought it was a really good opportunity to highlight the work of [organization] and also to kind of . . . for community members to learn about it and ask questions and learn who’s responsible for that project, and who to contact. I just thought it was a really good opportunity to kind of get out there and, you know, to place our project. (Partner1)

Effective Features and Modes of Delivery

Most interview participants found CS to have been effective in general (n = 11, 91.7%; one missing). All interview participants would and/or did recommend CS to others and when asked about who in particular, or who target audiences should be, the most common response was that CS could be beneficial for “everyone” or “anyone.” The features of CS ranked by importance by survey participants are presented in Table 2. By far the most important feature on average was “bringing together different perspectives around a common theme.” Both interview and survey participants frequently mentioned exposure to different points of view as an effective feature of CS. For example, one interview participant (Partner1) said it was useful “to have like, the different perspectives because, you know, my day-to-day work doesn’t necessarily provide me with that. So, it was nice to see one topic, but kind of coming at it from different angles.” At the same time, several participants also noted that it was beneficial to have an opportunity for like-minded people to get together. For example, one survey participant (Survey2) wrote, “It’s good to have events in the city where people from the community can come together around a shared interest/common goal.” One interviewee commented:

> And I just think it’s such an important, good way to address issues from those different vantage points of the academic and the community person, etc. I just think, you know, we all come with different biases and assumptions and different ways of thinking about and addressing

Table 2. Features of City Symposium, Attendee Survey, Mean Rankings (n = 48)

Feature of City Symposium	Mean ranking	*SD*
Bringing together different perspectives around a common theme (academic, activism & philanthropy, arts & culture, public sector)	1.73	1.410
Live music or artistic performances	6.58	2.181
Videos available online for watching later	5.65	2.139
Speaker follow-up questions and interview with event hosts	4.04	1.890
Different venues for live events	7.42	1.900
Event themes (tied to the Sustainable Development Goals)	3.42	2.009
Postevent snacks and refreshments (pre-COVID events)	8.77	1.276
Local, London-based speakers	4.25	2.436
Email newsletter profiles of event themes and presenters	6.63	2.321
Opportunity for informal networking or collaboration	6.52	2.790

Note. Lower scores indicate higher importance ranking.

> issues. So, creating a forum where you can share what those are and what's the commonality among those is great. (Presenter2)

Other successful or appreciated features of CS reported by participants included its innovative format; good organization; high-quality facilitators and presenters; inclusion of artistic performances; safe/supportive space; important and timely topics; action-oriented focus; opportunities for audience engagement; and broad community promotion. A number of these features are described in the following quote:

> It's pretty novel. I mean obviously I do a lot of panel stuff so you know, conference panels, podcast panels or things like that. But in terms of that like intentionality around local expertise and the mix of the four [presenters], having some Q&A and having some informal social time after, I mean that's . . . all of that formula is pretty novel. (Presenter7)

In terms of preferences for the mode of delivery, most interview participants (n = 8, 72.7%) preferred in-person sessions; the remainder had no clear preference (survey participants were not specifically asked about their format preferences). Many spoke about there being benefits and drawbacks to both the in-person and online formats. Disadvantages of the online format included the limited capacity for discussion and networking and that the musical/spoken word entertainment did not work as well remotely. Advantages of the online format included greater accessibility from home and the potential for those outside the city to attend. Nevertheless, an interview participant noted,

> I think if you're interested in the topic, and you have a passion for it, it doesn't matter how it's delivered or who is delivering it. So, for me, if the speakers are good, if the topic is being addressed in a way that's relatable, then whether you're in person or watching online, it does not matter. (Presenter9)

Improving City Symposium

Few limitations or criticisms of CS were mentioned by participants. Despite a relatively low importance ranking for the "opportunity for informal networking or collaboration" (Table 2), one of the more common criticisms had to do with insufficient discussion or attendee engagement. For example, one survey participant (Survey19) wrote, "There was not enough time for engaged Q&A at the one I attended." However, not all participants shared this opinion. In the words of one interview participant (Presenter7), "I'm not sure any more public engagement directly would be very helpful, so I think having some informal gathering after is great if the public want more interaction."

Others noted that the promotion of CS could be improved or that the reach or audience of the sessions was limited. For example, one interview participant said,

> The biggest limitation is that the participants in these types of sessions are . . . how do we balance the preaching to the converted, preaching of the choir type of thing? Right, so people that are participating in these events are people that are already thinking and engaging . . . doesn't mean that there's not value in having venues and avenues for people to connect and to discuss because that's where action can be generated. (Presenter4)

A few participants had suggestions related to the voices heard at CS. For example, one survey participant (Survey11) advocated for "less big-name speakers like city councillors and CEOs. I want to hear from Londoners actually doing the work on the ground everyday." An interview participant said,

> I think for the most part, the one thing I find generally at most events like this is lived experiences is usually missed. That being said, I think City Symposium did a pretty good job of trying to include lived experiences as much as possible, but I think we can always do better. (Partner3)

Finally, many survey participants responded to the question about suggested future CS topics. Their ideas included food security and sustainability, mental health and addictions, housing, climate action and eco-justice, issues related to Indigenous Peoples such as Land Back and reconciliation, labor issues, various types of prejudice and dis-

crimination (e.g., racism, ageism, ableism), community development, and poverty and homelessness.

Discussion

> Whether you are an advocate, or whether you're doing research, we can all contribute . . . towards reducing inequalities.
>
> —Presenter6

City Symposium was unique in that it attempted to achieve two related, but distinct, goals—engaging the public about the subject of equity and how to consider strategies for change tied to a specific locale, while also providing a venue for knowledge mobilization for researchers and community organizations partnering to reduce inequities. CS thus provided the opportunity to bring together strategies from two fields—citizen engagement/public involvement and knowledge translation/mobilization—to plan and assess what could happen when these spaces were opened in an accessible way to an entire community.

In reflecting on the findings from our mixed-methods evaluation, and the literature from these domains, including best practices in each, we find a reasonable fit to many of the key drivers of both CE/PI and KMb, which may account for the generally positive impacts we achieved, as evidenced through our data. From the perspective of integrated KT/KMb, we used most of the practices found effective by De Weger et al. (2018) in their review, especially staff support and facilitative leadership, community/partner involvement in early planning and throughout, a safe and trusting environment for input, attending to issues of power and providing a level ground for a diversity of perspectives, and using ways to communicate where everyone was afforded due respect and no voices (among presenters) were privileged over any others. We also looked for mutual benefit by focusing on expectations, motivations, and what success would look like for all involved. Similarly, the breadth of participants in formal presentations, facilitation, entertainment, and the audience itself meant that we achieved a level of critical mass, with participation across various walks of life—people felt engaged for what they had to contribute, not by virtue of occupying a specific role (Bigby & Frawley, 2010; Camden et al., 2014; Cotterell, 2008; De Weger et al., 2018; McGrath et al., 2009; Williams et al., 2005).

In addition, City Symposium provided participants the opportunity to form new interconnections and to expand their networks with an explicit eye to equity—making both online and in-person venues more accessible in multiple ways, including through careful use of nontechnical or non-jargon-filled language (though not, for this series, use of non-English languages, nor simultaneous translation or signing; however, we did use closed captioning for online sessions). These intentional strategies to break down barriers between experts and nonexperts, and between various communities, made CS well-regarded among those who participated in the study. Overall, most participants felt that CS was an open space where presenters and attendees engaged in discussion and were mutually involved in knowledge sharing, although it should be noted that the extent of discussion between presenters and attendees was limited, especially for the virtual sessions, when postevent informal discussion over refreshments was not possible (as it was for in-person events). Participants especially noted the benefits of having different types of speakers bring their perspectives to each topic. Presenters shared their expert and tacit knowledge and lived/living experiences with the audience rather than just the kind of decontextualized research findings often found in academically focused dissemination. The emphasis on storytelling was especially impactful and aligns with emerging calls to engage multiple discursive strategies drawn from media, journalism, and communication practices, especially avoiding technical terms and disciplinary jargon when sharing research-based knowledge with diverse audiences (Jerit, 2009; Luzón, 2013). Indeed, storytelling has received attention recently from KT researchers and practitioners and is shown to be effective in changing health-promoting behaviors (Brooks et al., 2022; Wathen, 2022); further research in the context of CE/PI is needed.

Also, although web-based platforms had not been fully embraced as public engagement tools until the COVID-19 pandemic, when we were forced to change to this format, participants appreciated the flexibility and accessibility this mode of delivery provided. Ongoing virtual spaces for these types of multistakeholder engagement have the potential to enable knowledge mobiliza-

tion activities by reducing barriers (i.e., eliminating distance, time, and cost as participation barriers) while also increasing opportunities for inclusion (e.g., allowing more people to be involved by enabling participation for those with mobility or other limitations, or who live outside London). Respondents stressed a desire to preserve these benefits by continuing to include these virtual options beyond the pandemic. More research is needed to evaluate the impacts of online approaches on community/public engagement and on KMb activities.

Gradinger et al. (2015) reviewed the literature on PI in health and social care research, finding that most knowledge-sharing goals are articulated in terms of one (or more) of three values systems. The first system is focused on normative values, specifically moral, ethical, and political concerns, with the goal of enhancing rights and fostering empowerment, and a focus on action and accountability. The second they term "substantive values," in which actors focus on the impact of research on communities, including effectiveness, generalizability, and creating a reliable evidence base. The third focuses on process values, including trust, partnership, honesty, and clarity. Reflecting on our intent when designing CS, and how we conducted the series, including accommodating pandemic-induced changes, the overarching value brought to the work was explicitly normative: to promote equity and social justice. However, this goal could be achieved only through process-specific values, with a focus on partnership and communication. Our findings indicate that we achieved our process value goals, positioning CS as one strategy in our local community that reinforces a collaborative approach to social justice and equity goals, though by no means a sufficient one (i.e., whether we promoted specific normative changes is largely unknown, though a few participants spoke of actions they have undertaken or might undertake). However, the ability to demonstrate a substantive "evidence base" remains unclear. This study is a contribution to an evolving set of strategies for mobilizing research to action, but each community is unique, and whether a CS model would work in other communities is unknown; additional research on these types of KMb/CE/PI strategies is required.

Limitations

The extent to which we were able to draw in individuals and groups facing deep and intersecting forms of marginalization was limited, at least in terms of study participation. Although we did not collect a full range of demographic data in the survey, we know that our sample achieved reasonable gender diversity but the majority of participants were, for example, older. The online, English-only survey may also have limited people's ability to participate in the evaluation. Yet, contrary to the survey demographics, our anecdotal impressions of the audiences across events indicated a greater degree of diversity among attendees than was reflected among those who chose to complete the survey (for example, in age—most survey respondents were older, but audiences varied, especially in the online sessions, among the faces we could see). There was good diversity across a number of social locations among those with formal roles in CS, including presenters, entertainers, and hosts/facilitators. When topics were specifically about inclusion, this was an added emphasis—for example, after an early online session was "Zoom-bombed" with horrific racist attacks, we engaged with Black colleagues and partners in a critical learning moment, and collectively decided to add a new session specific to anti-Black racism, led by these colleagues (Bringi & Atkins, 2020).

Regardless, self-selection bias may limit the generalizability of our results, as those who felt particularly positively toward CS may have been more motivated to participate in this research. We also could not determine from our data whether satisfaction differed between academic and nonacademic attendees. Additional methods of follow-up, as well as more intentional strategies to further encourage and support participation (as audience members, presenters, and partners) from historically marginalized and equity-deserving groups, would enhance these kinds of events, and a breadth of inclusive research methodologies would improve our ability to evaluate them. For example, of those who agreed to an interview, there were fewer partners than presenters, and no artist presenters. This result may speak to the need to fairly compensate interview participants for their time, as those in precarious work roles would find it harder to participate, especially during work hours. As well, we had a relatively small survey sample, and chose not to collect fulsome demographics, limiting our ability to truly know the respondents. Our data also prevented in-depth examination

of the acceptability and effectiveness of in-person versus online formats (i.e., we do not know which format survey participants attended). Although such pedagogical issues have been examined across disciplines and contexts, and a fulsome discussion is beyond the scope of this research, a better understanding of these formats in the context of CE/PI such as CS would be beneficial. The relatively long interval between some of the sessions and the survey (ranging from about nine months to >2.5 years) may explain the relatively short duration of the interviews; additional methods to better understand the impact of CS on attendees are required. These methods could, for example, include postsession focus groups or interviews occurring immediately following the event and at reasonable intervals to understand how impacts unfold.

Conclusions

Although, as a field of practice and study, we might not yet be fully "there" in engaging citizens as a core audience and partner (Banner et al., 2019) in generating and using knowledge, City Symposium successfully merged strategies from both the KMb and the CE/PI domains to mount a multievent series, before and during the COVID-19 pandemic, to spark important conversations in one community regarding equity and social justice. This study provides initial descriptive evidence that the format was successful in achieving its proximate goals, and is one appreciated by those who participated and attended, and chose to engage in the research. We position this type of activity as a promising strategy to bridge "town and gown" in a way that is codeveloped by a range of community partners, including academic institutions as one among many, rather than one apart.

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School Engagement Projects as Authentic, Community-Based Learning for STEM Undergraduates

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Abstract

Capstone projects provide key learning opportunities for STEM undergraduates to consolidate knowledge gained over the life of their degree. These projects typically reflect lab- or fieldwork-based research, which can exclude students who do not wish to pursue these career avenues. Here we deployed school engagement projects (SEPs) as an alternative to provide an authentic, community-based learning experience to STEM undergraduates wishing to develop their skills in science education and/or communication. This report aims to highlight the extent to which SEPs can provide such an opportunity, with the opinions of various stakeholders, including STEM undergraduates and participating schoolteachers, gathered by focus groups and surveys. Analysis of transcripts demonstrates an overall positive impact and revealed the benefits of these projects in preparing students for teacher training courses through increased educational knowledge and experience. These projects make for effective alternatives to traditional capstones and present opportunities for local science outreach.

Keywords: school engagement projects, capstone projects, authentic assessment, community-based learning, higher education outreach

Final year capstone projects allow undergraduate students to apply their knowledge and skills obtained in previous academic years to perform research that has real-world applications and benefits (Schachter & Schwartz, 2018). University courses in the biosciences have traditionally offered students a lab- or fieldwork-based research project in their final year of study (Jones et al., 2020). However, fewer than 10% of students will enter a career in these fields, with approximately half of students entering a non-research-based career, including teaching (Lewis, 2020). This disparity between the capstone projects conducted at university and graduate career choices presents an opportunity for novel authentic, experiential, and community-based learning projects and assessment.

Several universities now offer capstone projects that provide direct engagement with schools in their local community. Often referred to as community-based engagement initiatives (Dempsey, 2010), these capstone projects, herein termed *school engagement projects* (SEPs), enable students to directly experience the role of a teacher or science communicator, to actively prepare appropriate and intellectually stimulating material for use in the classroom, and to assess the impact of their initiatives on pupil learning and engagement. These projects also offer benefits to the participating schools and pupils, including collaboration with marginalized and underfunded communities (as these activities are often offered free of charge) and increased engagement with a diversity of real-world topics (Dempsey, 2010). With many schools under time and resource constraints while delivering nationally regulated curricula, it can be challenging for teachers to deliver additional content or particularly preparation-heavy lessons. SEPs offer an opportunity to expose pupils to a range of thematic areas,

including topical issues not yet included in the curriculum, and cutting-edge research accessible only within the higher education sector. By providing a predominantly pupil-centered learning activity, pupils can be given an opportunity to be inquisitive about new topics and enhance their critical thinking skills (Adom et al., 2016). This expansion of real-life application of knowledge outside the examined material should also increase their overall interest in science topics and increase their motivation to further their learning, perhaps by attending university when they did not originally plan to.

We argue that our SEPs can be categorized as examples of community-based learning (CBL). CBL is a pedagogical strategy that seeks to give students meaningful learning experiences that involve contributing to, and learning from, the community (Pedersen et al., 2014). As well as increasing motivation because of the importance of the project to the community (Adom et al., 2016), it also develops a range of interpersonal and academic skills within the student (Astin et al., 2000; Carlisle et al., 2017). Further, universities are public institutions and have a responsibility to disseminate information and to increase the awareness of the general public to their research (Lynton, 2016). Therefore, SEPs can provide an important mechanism by which universities may increase their outreach potential by engaging directly with school partners, benefiting the community by providing local pupils with a unique and authentic learning experience. Similarly, the benefits are reciprocated to the participating undergraduates who engage with their community partners and enhance a plethora of vital skills simultaneously throughout the projects, which provide a bridge between theory and practice, as well as connecting students to prospective employers and prominent organizations in relevant fields (Lynton, 2016).

SEPs also provide an experiential and authentic learning opportunity for those interested in a career in teaching, but before they commit to teacher training. Experiential learning can play an integral role in tertiary education to provide students with participatory learning opportunities, enabling them to become more actively engaged in the learning experience (Hawtrey, 2007). As a result, learning in this way can be more impactful and memorable for students by providing them with a more immersive educational experience. Moreover, authentic learning practices can further compound the benefits from such experiences as students have an opportunity to connect with real-world issues, problems, and applications, by providing them with a learning environment similar to a real-world discipline (Quigley, 2014). In SEPs, students are placed within local schools and given the opportunity to lead self-designed educational activities on their chosen topic, placing them firmly at the center of their learning experience. Student engagement is crucial in education, and using a student-centered activity has been found to purposefully increase student engagement (McCubbins et al., 2018). Thus, the SEPs provide an important opportunity for both experiential and authentic learning to take place, and to better equip the participating students for a career path in education or science communication.

This article aims to present and evaluate the newly developed SEP initiative within the School of Biological Sciences at Queen's University Belfast (QUB) in conjunction with two local science outreach organizations, the STEM Hub and W5. We present insights gained from participating students and teachers to better inform the delivery of similar projects and analyze their effectiveness as substitutes for lab- or fieldwork-based capstone projects.

School Engagement Projects

QUB is a long-established (1845), research-intensive university in Belfast, Northern Ireland. The School of Biological Sciences sits within the Faculty of Medicine, Health and Life Sciences, and intakes approximately 300 students each year across seven programs ranging from Biochemistry to Environmental Management. All undergraduate students in the school must complete a part-time, 8-month project in their final year alongside their studies, otherwise known as a capstone project. The majority of students complete a disciplinary-based project encompassing lab, field, or computation work; however, each year a small proportion (about 8%) wish to complete a more educational-focused research experience. The SEPs were envisaged in the 2020–2021 academic term as alternatives to lab- or field-based projects for students expressing interest in science communication or education-related development, to improve experience and training in these areas, as well as to benefit local schools and communities.

These projects are currently available across five of the school's programs, and involve undergraduate students designing and developing educational activities or sessions directed at a specific age group, relating to an area of research of their academic supervisor, which they deliver in multiple schools within the local area. These projects occur in collaboration with local science outreach organizations, including the W5 Science Discovery center (https://w5online.co.uk/) and the regional STEM Hub (https://thestemhub.org.uk/). These organizations provide an avenue for the educational activities to be advertised to local schools, and through registration with them as STEM Ambassadors, students acquire training and obtain Disclosure and Barring Service (DBS) checks to allow them to work with children in regulated environments, all free to the student. Students, under the guidance of their academic supervisors, produce activity briefs that summarize their activities and explain how they supplement the national curriculum for their target audience (see Appendix for an example). These activity briefs are sent out to prospective teachers via the partner outreach organizations. Once interested schools are identified by the partner organizations, they inform the students, who liaise with the appropriate teacher to deliver the activity.

Outreach activities are evaluated, and thus require both risk assessments and ethical approval from the host university. Participating students within SEPs must complete the necessary paperwork for this process, whereby completed consent forms are managed by the partner outreach organizations. Students develop an evaluation plan for their activity, either from the participating students, teachers, or both, and this evaluation provides the basis for the assessment of the SEPs. In this way, students gain insight and experience in managing various aspects of research development (ethical approval, study design, data collection, etc.) as well as educational delivery.

Due to the COVID-19 pandemic, the projects were delivered solely online in the 2020–2021 academic year, with flexible delivery in 2021–2022. To provide an example of the variation in delivery of the SEPs across these academic terms, Table 1 illustrates four different activities developed, including the activity detailed in the Appendix.

Table 1. Comparison of Four School Engagement Project Activities Delivered by Students in Local Schools

	Topic	Delivery	Length	Age	Schools	Main Activities
Activity A*	Microbes in food waste	In-person	60 min	11–14	3	Interactive PowerPoint; online quizzes; poster production
Activity B	Malaria transmission & prevention	In-person	50 min	16–18	1	Interactive PowerPoint; online resource (yourgenome.org); group debate
Activity C	Genetic modification of food	Online	45 min	14–16	1	Self-paced online course; online group debate
Activity D	Deep-sea mining & biodiversity	Online	60 min	16–18	4	Self-paced online course; mining summit simulation

Note. *The activity brief for Activity A is provided in the Appendix.

Evaluation

To better understand the outcomes for students and partner schools who participated in SEPs, as well as how to improve the projects in future iterations, a program of qualitative evaluation was undertaken.

Evaluation Methods

The evaluation was approved by the Faculty of Medicine, Health and Life Sciences Research Ethics Committee. A focus group of student instructors was conducted at the conclusion of each set of projects over the course of the two academic years (2020–2021 and 2021–2022) that the SEP ran. Purposive volunteer sampling was employed to recruit final year students in the School of Biological Sciences who had recently completed and submitted a SEP. Four individuals, including one male and three females, took part in the 2020–2021 focus group; three individuals, all female, participated in the 2021–2022 focus group. Five of these participants had applied for entry into a graduate program to become qualified teachers.

Focus groups lasted for approximately one hour, and asked participants to reflect on their experiences in undertaking a SEP, including the benefits and challenges, the relevance of this project to their future careers, and what they believed could be improved in future iterations of SEPs. The questions used in both focus groups can be seen in Table 2. A 1-1 interview was also completed with a teacher from a local school that engaged with the SEP in the 2021-2022 academic year. These focus groups and interview were recorded and transcribed with the participants' permission.

In addition, an anonymous, online questionnaire (delivered via Microsoft Forms) was distributed to participating teachers; questions included are detailed in Table 3. Eight teachers provided responses to both open and closed questions based on their perspectives of the projects delivered in their schools. All eight teachers provided responses for the closed questions; the open questions received fewer responses.

The focus group transcripts and questionnaire responses were analyzed using thematic analysis. An inductive approach was preferred, meaning that themes were built from the codes identified in the transcript and preexisting theories or concepts were not used (Thomas, 2006). The codes were then reviewed each time the transcripts were reread, and after three readings, the codes were appropriately organized into themes. Five themes were identified (perceived employability, authentic career experience, benefits to school pupils, challenges of SEPs, community support) and are subsequently discussed.

Table 2. Questions Posed to the Student Participants of the 2020–2021 and 2021–2022 Focus Groups

What are the top three advantages you think were specifically delivered by the School-Engagement Projects?
What were the top three challenges which you had to specifically overcome with the SEP, that you feel other students did not?
Do you think there are many opportunities in your degree to gain teaching experience?
Do you think the SEP provided a beneficial opportunity to experience teaching-related activities?
What, if any, do you think were the biggest impacts of completing and delivering the SEP remotely this year?
Would you recommend other students to undertake the programme, and if so why / not, why?

Table 3. Questions Included in the Teacher Evaluation

Did you find the activity too long, an appropriate length or too short?
Would you be interested in taking part in similar events delivered by Queen's University Belfast?
How would you rate the SEP you chose as an educational activity for your students overall?
If you have any comments on how to develop the activity further, what would you add / keep / remove?
Do you have a gauge (either formally or informally) on how your pupils felt about the SEP activity?
What do you think the biggest impact (if any) the SEP activity had on your pupils?
How do you feel about the delivery of the SEP activity, and was it effective for your class?
How do you think your pupils found actually completing the activity online and using the online resources?
Do you think there are elements of the curriculum these activities could best support?
From the activities you experienced, what elements do you think worked well, could be removed, or could be added to make them more effective?

Evaluation Findings

The five themes are presented here, accompanied by discussion.

Theme 1: Perceived Employability. Participating undergraduates found that the nature of the SEPs aided their personal and professional development, with a plethora of skills highlighted as being enhanced throughout the process, including public speaking, communication, adaptability, IT skills, and self-evaluation. Student Instructor 1 mentioned that "for those who don't have as much experience with IT, you're picking up new skills and you're learning how to adapt in the workplace. . . ." These findings are consistent with previously cited benefits of similar science-communication-based capstone projects whereby students enhanced their communication skills working cooperatively with others in a group, as well as their ability to communicate via different means, both written and oral (Kerrigan, 2015). Students are also provided with greater freedom to develop their own project and, as a result, can develop a plethora of skills such as problem-solving, critical thinking, and investigative skills, with Student Instructor 6 mentioning how "[situations continuously] went wrong and I had to adapt to them very quickly . . . it taught me a lot about how things very rarely go to plan . . . you need to be really adaptable." Arguably, students who have completed their projects are therefore better equipped to progress into further study or prepare for their future career, including postgraduate research or teacher training, given that these skills are particularly important for these fields (Kerrigan, 2015). Student Instructor 6 further expressed how "learning how to communicate different concepts to appropriate audiences properly" provided a beneficial learning experience that prepared them for their future teacher training.

Graduate employability is heavily reliant on the possession of a variety of skills, including communication, problem-solving, and teamwork, but employers have experienced difficulties in recent years in acquiring appropriately qualified graduates who are expected to have further developed these skills with guidance from their university (Matsouka & Mihail, 2016). Thus, it is vital that universities provide the relevant opportunities to enhance key skills relevant to the future career aspirations of undergraduates. Key skills can be integrated into a capstone project designed to provide the relevant experience and skill development necessary for that future career; SEPs, for example, are specifically designed to provide such experience for the teaching profession. Further, these projects connect students to local schools and educational bodies that may provide employment or training opportunities later in their careers.

Theme 2: Authentic Career Experience. Students also highlighted the opportunities that the projects provided to gain relevant teaching experience, which Student Instructor 6 highlighted by saying, “I want to do teaching but throughout [my university] course, nothing arose like this. . . .” The lack of such experiences throughout tertiary education more generally was also noted. SEPs enabled students to gain direct experience while working in a school, allowing for contact between teachers and pupils, while also providing creative freedom to produce learning materials, such as PowerPoint presentations and quizzes, relevant to the content being covered. Similarly, in previous findings students undertaking a science-communication capstone project were shown to benefit from having freedom to enhance their creativity skills while accepting appropriate guidance from supervisors to ensure optimal delivery of the projects (Mokhtar, 2010). This creative freedom was appreciated by the participating undergraduates, with Student Instructor 5 highlighting its importance by stating that “it gave you a great opportunity to teach how you’d like to. . . .” Furthermore, taking on the role of teaching, even if only for a select number of sessions, provided a valuable insight into both lesson planning and effectively relating the content being covered to the pupils’ current curriculum, with Student Instructor 1 mentioning how “it gives you a really valuable insight . . . it gives you experience creating content and then delivering it to the classrooms ourselves.” Thus, the school-engagement capstone project offered the students a career-building experience through authentic interaction with children and teachers, while also delivering an activity (Elwell et al., 2021).

The authentic nature of such projects has been proposed to give undergraduates a realistic job preview that many other capstone projects, as well as STEM courses, often cannot provide. Students can gain a greater sense of scope and confidence when choosing a future career, with Student Instructor 6 stating that “[it] gives you the full-on experience of being a teacher and taking over a classroom” (Beier et al., 2018). Student Instructor 5 also mentioned how “it was really interesting to have meetings with the classroom teacher . . . she was very open about all the things she was having to consider,” as opportunities to hear from teachers directly about their lived experience in the classroom prior to teacher training applications are difficult to obtain. This practical and valuable insight into such careers can enable prospective graduates to make more informed decisions as to how and in what capacity to enter the STEM workforce.

The nature of capstone projects provides a unique opportunity to research an area of interest. Participating undergraduates expressed gratitude for their increased educational knowledge, as the SEPs had provided an opportunity to engage with pedagogical and educational research for the first time, with Student Instructor 5 expressing that “the research plan [an assignment within the SEP schedule prior to the delivery of the designed activity] was all very much pedagogical and educational research . . . it was really, really interesting and I think that gave us a real good advantage . . .” Student Instructor 1 agreed, mentioning that “instead of focusing solely on science, you’re also focusing on the theory of education and the aspects of education which is really interesting as it broadens your knowledge on both.” Student Instructor 2 also expressed the need for familiarization with the curriculum to provide the best learning experience for pupils, saying how “I’ve familiarized myself with their curriculum and had based my project around something that they would use in their curriculum.” Furthermore, the students noted that reading educational journals had provided a greater understanding of how children learn, with Student Instructor 6 saying that “there would be so many papers on communicat-

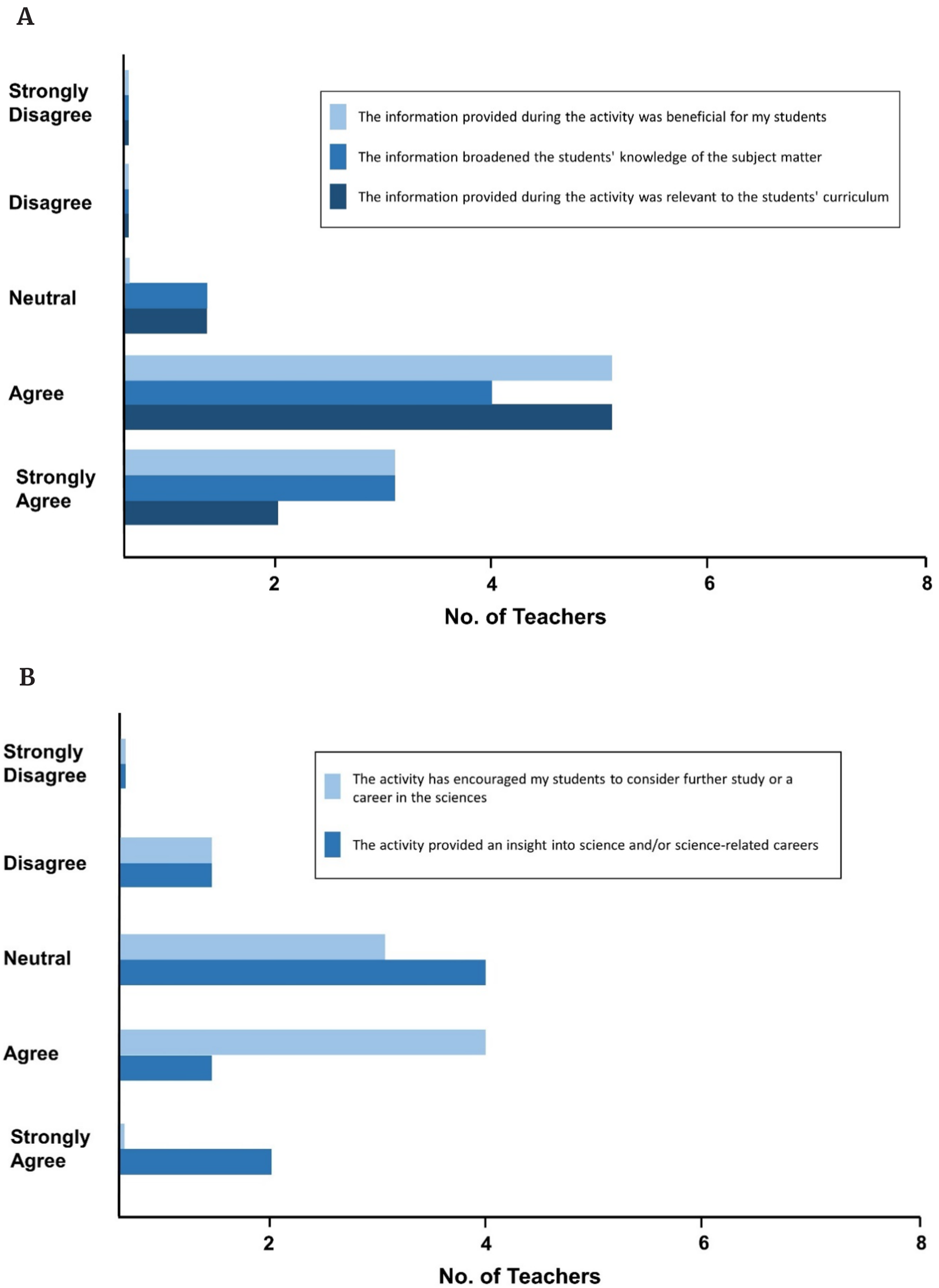
ing with [children] . . . after reading it all, it was amazing to see the different types of ways that kids actually learn. . . ." Previous research has also demonstrated how such acts of community engagement can directly enrich undergraduate learning in relation to both pedagogical and scientific content, noting how undergraduates had been able to identify how the scientific knowledge they had accumulated would translate into a classroom setting (Theriot, 2006).

The majority of students who participated had expressed the importance of completing this project as it benefited their application for a PGCE (postgraduate certificate in education) program following completion of their degree-level studies. Student Instructor 5 mentioned how "[the project] was really helpful for me. I could use [it] in an interview," and Student Instructor 2 mentioned how "I applied to do a PGCE, and I got in . . . I could talk about my research project [and] how it was part of the STEM Hub at W5, [which] was really beneficial and it probably pushed me ahead of other candidates that maybe didn't have that." Each PGCE course is highly competitive, and being able to demonstrate classroom experience has proved integral in the success of these students' applications. Figures released by the Universities and Colleges Admissions Service (UCAS) for the 2021 cycle show that of 48,300 UK applicants to a teacher-training course, only 30,115 of those were accepted (UCAS, 2022). Five out of seven undergraduate students who participated in the focus groups had already been successful in their application and noted how beneficial the SEP experience had been, providing a myriad of relevant talking points in their interview. Student Instructor 3 expressed how beneficial the SEP had been during their interview with how "talking about a dissertation, in that we were able to interact with students, you could tell that the interviewer was really interested in it. . . ."

Theme 3: Benefits to School Pupils. The SEPs were found to have real-world and immediate impacts in the local community, as they involved direct contact with school pupils and provided them with a novel and unique learning opportunity. The student-developed sessions provided an opportunity to create an authentic learning environment whereby the participating pupils adopted an instructional approach (Adom et al., 2016). This approach encouraged the pupils to actively explore a variety of resources covering novel and real-world contextual material, including topics related to, but not covered within, the curriculum, such as deep-sea mining and gene editing, allowing them to be inquisitive and construct their own knowledge from the materials provided. Thus, a constructivist approach was used, to increase both the pupils' knowledge and interest in the subject. By making the subject applicable to real life, the educational experience is likely to enhance pupils' motivation to learn and thus can benefit their performance in future studies (Sawyer, 2014). Student Instructor 4 highlighted the ability of such projects to deliver valuable scientific knowledge to those not involved in research, mentioning how "this project made an immediate difference to pupils . . . it was nice just to go straight to the public with something." Student Instructor 6 also thought the participating pupils were engaged throughout, and benefited from the activities, stating that "they actually did learn the [content] through the way I was teaching them." The teachers involved also identified these benefits. All (n = 8) indicated that the information provided during the activity was beneficial for their students (Figure 1A); seven agreed that the information broadened the pupils' knowledge of the subject matter. Importantly, the majority (seven) of teachers also agreed that the information provided during the activity was relevant to the students' curriculum. One teacher, however, was neutral about this statement, and an undergraduate student had also indicated that their project was surplus to the requirements of the curriculum, which was thought to have a negative impact on student engagement, as participation was completely voluntary and not necessary. Student Instructor 3 also expressed concern, mentioning how "teachers can't force the pupils to engage with the project as it's not part of the curriculum." As a result, future considerations should be made to accommodate only those projects that are relevant to the curricula at that time. Research by Sedlak et al. (2010) has also suggested that every faculty member should consider the relevance of community engagement projects, ensuring the project meets both the needs of the community partner and undergraduate course objectives.

These benefits were also highlighted during the teacher interview, where teachers described how the projects increased their

Figure 1. Teachers' Perspectives on the Impact of the Educational Activities



Note. Number of teachers responding on a Likert-type scale (from *strongly disagree* to *strongly agree*) regarding the impact of the educational activities on (A) the information disseminated during the teaching sessions and (B) the encouragement of students to consider further engagement in science.

pupils' knowledge base through building upon what was being learned in class, but also encouraging further interest and conversation about the subject matter. The teacher highlighted the beneficial nature of the activities by saying that "it did spark some further conversations . . . it was very much linked and ideally placed—it was a step up from what they had been learning about in class. . . ." The teacher also described how the overall experience of the projects was beneficial to their pupils, as it provided excitement and they were enthusiastic to take part in something novel, saying that "our pupils were enthusiastic to take part . . . they were keen, they were interested. . . ."

School-outreach initiatives can provide a positive and meaningful experience for undergraduates and pupils alike, with numerous benefits having been cited, including teamwork, interpersonal, organizational, and communication skills, all of which have been found to be transferable into numerous scientific disciplines (Illingworth & Roop, 2015). Similar to the SEPs, these projects were found to be successful in engaging school pupils through the inclusion of real-world material and allowed for the development of early career scientists through increased motivation to learn and engage with new resources.

In addition, the projects also provide a valuable opportunity to promote the sciences and encourage schoolchildren to consider further study or a career in the sciences. Four of the teachers (n = 8) involved agreed with this statement (Figure 1B). Student Instructor 4 mentioned that "[I] could really see how clearly beneficial [the project] was in schools, given the opportunity that it was giving, and I suppose it's really nice to see that science has such an impact everywhere . . . and it can make a real impact to adult life in the public as well." Moreover, three of the teachers agreed that the experience provided an insight into science or science-related careers. For this reason, the undergraduate students had noted how these projects, through direct school engagement, could have wider and longer term impacts, encouraging more people to consider being a STEM teacher while also inspiring schoolchildren to consider their future career and how they can make an impact in the world. With a career in education having become less attractive to graduates in recent years, primarily due to workload and pay (Dupriez et al., 2016), the shortages of STEM teachers across the UK and other parts of the world need addressing. Quality STEM education is vital for ensuring successful future careers of young people and greater scientific developments to address numerous real-world issues, including climate change and mitigating its impacts. Such issues are regularly addressed by the United Nations, which has highlighted the importance of education in the effort to address climate change through providing knowledge-based lessons that encourage people to change their attitudes and behavior for the benefit of wider society (UN, n.d.). Thus, recruiting more teachers from a STEM background, and ensuring they have sufficient experience and expertise, will prove integral in mitigating the effects of climate change and associated environmental issues. Student Instructor 6 also expressed concern over the shortage of STEM teachers, stating that "they're literally crying out for STEM teachers, so it is a really good opportunity to get people pushed into going into teaching."

Online delivery proved divisive among participating undergraduates, but several conclusive benefits were noted by those who chose online delivery in 2021–2022. One such benefit was the ability to use videos as a learning aid, of which Student Instructor 7 said, "[Online delivery] more lended itself to some really cool footage from movies. . . ." Other benefits included the provision of more interactive and engaging content for the pupils, the ability to access more pupils, greater anonymity during the sessions (which may have allowed pupils to feel more confident in asking questions), and the use of third-party applications to aid learning, enabling a better content layout. Student Instructor 7 also mentioned that through online delivery, "I could access a lot more people" and

> I had questions from people sending a little message to me through Canvas [the virtual learning environment utilized] more so than I think might have happened if it wasn't online . . . I got quite a lot of people who would just send me a little message and say, "Oh, I'm not sure about this." There was a lot of that, so I think it helped. . . .

Student Instructor 7 also mentioned that "I don't think [my project] would have been laid out nearly as well if it hadn't been

[online] because I used lots of different plugins, so I had Ed Puzzle and ThingLink . . . it just gave it a really nice platform which was pretty easy to work through." In addition, Student Instructor 5 also found that "the [online] delivery made it very easy for [the pupils] to work through it. . . ."

Although online learning has been used as a mitigation against the direct impact of COVID-19 on education in recent years, its benefits have been widely debated in the literature (Paudel, 2021; Teymori & Fardin, 2020). As it allows greater access to a plethora of bespoke learning tools, the use of computers can lead to an increased rate of teaching and promotes the separation of the teacher from the students, placing students toward the center of the learning experience, giving them greater autonomy (Paudel, 2021). This autonomy can have positive impacts within a constructivist pedagogical framework, but the lack of personal interaction and guidance can lower the pupils' intrinsic motivation and disengage them from their educational activities (Syahputri et al., 2020). This perspective was highlighted during the teacher interview, with teachers stating they would like to see online learning removed as a way of making a future improvement to the project, as pupils were found to have lost interest in the activity and began using computers for other activities. As COVID-19 restrictions ease, in-person learning is more likely and will allow a greater level of communication and understanding between pupils and their student instructor during the SEP.

Theme 4: Challenges of SEPs. Although the SEPs delivered a variety of benefits to both students and pupils alike, several limitations and challenges in the delivery and logistics of the projects need to be recognized. Undergraduates highlighted a number of difficulties that they had experienced in relation to the paperwork associated with the project, as well as the SEPs' schedule, which students undertaking a more traditional lab-based project did not have to encounter. Student Instructor 7 stated that "most of my friends [completing a traditional lab-based project] at least got their data given to them in an Excel spreadsheet . . . we were very much needing to collect the data from scratch and work through how we were going to collect it." Primarily, the students expressed concerns with having to collect the data and having to identify how to collect, manage, and analyze it effectively. This issue, however, is likely to be specific to the context at the time, as many traditional capstone projects within the School of Biological Sciences offered precollected data during COVID, whereas in more normal conditions, the majority of projects, regardless of type, require students to collect, manage, and analyze their own data.

Undergraduate students also felt that the workload during the SEP was overwhelming, with Student Instructor 5 saying, "We probably had a lot of individual stuff outside of the actual research, so, like, making sure you had your AccessNI [criminal records check and finding the school . . . that was quite stressful. . . ." Student Instructor 7 mentioned how

> you need to be very much able to take on a lot of stuff completely independently and on your own, because I know certainly my supervisor wasn't an expert in education and teaching . . . they weren't the one with the answers when it came to doing AccessNI forms. . . .

Student Instructor 6 also expressed concern over how "the dissertation deadline was way too close to exams." This perception of limited time, however, is a common perspective of students at this stage, irrespective of the type of capstone project.

In addition, the nature of these projects meant that students were reliant on participation by, and communication with, schools. Participating students encountered difficulties in obtaining schools to sign up to their activity, with Student Instructor 1 mentioning how "I struggled to actually get schools from W5." A lack of communication between the undergraduates and their community partners had also been noted in previous research, suggesting that difficulty communicating is a common obstacle that can impede the fluency and impact of such projects in schools (Blouin & Perry, 2009). Student Instructor 4 highlighted the difficulties they experienced in communication with their community partners, saying, "Once [W5] put you in contact with a school, it was the teacher then not getting back to you and you had to chase people. . . ." Efforts should be made to ensure communication between all stakeholders involved is consistently clear to ensure optimum delivery of the projects. Students also found they had to manage a lack of continuity between

the requirements of different schools. They believed this inconsistency made the process of connecting and communicating with a partner school more convoluted, with Student Instructor 7 mentioning that "I got let down twice by different schools and groups, so I very quickly had to adapt my project. . . ."

Undergraduate SEP students were also reliant on pupils' engagement, and some felt that pupil engagement diminished as the planned educational session progressed, with Student Instructor 2 expressing concern, stating that "a lot of kids . . . filled out the first questionnaire and then as the activity went on, they started dropping out, so my numbers dwindled so much. I think obviously if we were face-to-face, we wouldn't have that problem" and also that

> if you were face-to-face, you would have more evaluations and you wouldn't necessarily have that issue as much as you would have online [when] trying to keep the attention of a 15-year-old or 14-year-old, which is a very difficult thing to do.

Thus, they felt engagement with pupils was a challenge, especially with online delivery, as interaction with the pupils was difficult. Student Instructor 4 expressed how online delivery meant that

> you don't know how much [the pupils] have missed and how much they've understood. And when they do the questionnaire at the end and they don't get it right, you're like, "What have I done wrong?" and you don't know because you don't have that interaction.

Although delivery of these projects will likely return to a face-to-face format as COVID-19 restrictions ease, students did face challenges with online delivery, despite the aforementioned benefits, with Student Instructor 3 citing the difficulty in creating content:

> "I made prerecorded videos, and I made them so many times and it took so long that I was putting them up anyway because I couldn't actually do it any longer when I felt like they were rubbish . . . [it] would just be so much better if I could just talk to the students.

They found it challenging to make sure the content was fully accessible, and it was also a challenge to make every aspect of the project engaging for the pupils. Student Instructor 5 noted how "[it was challenging] making sure that [all of the content] was accessible . . . and making sure everyone was going to be able to get in [the learning session]." It was noted that in-person delivery allows the educator to be more interactive with the students and can make sure the students are engaged. Student Instructor 7 expressed how online delivery meant that

> [it was challenging] trying to find ways of making it more than just an online activity and more about them by actually engaging with the content, which is hard to do when it's online because there's not an actual live person to chat to.

Furthermore, it was noted during the teacher interview that online delivery had meant that "I was the middle person saying, 'This isn't working,' 'This is working,' 'What are we doing?' and 'Should we click here?' It's an extra layer of communication you have to go through which just slows things down." As a result, the teacher explained how communication could be improved through a transition back to in-person projects.

Theme 5: Community Support. All participating students noted a lack of communication with others completing a SEP. They believed they would have benefited from being allowed to ask each other questions and discuss logistics of their project with understanding individuals. Student Instructor 1 noted that

> it would have been nice to even meet others who are doing the same dissertation in person or through [Microsoft] Teams so we can all get to know each other. I think it would make it a lot easier since we're all in the same boat to ask questions.

It was suggested that online meetings would provide the space to communicate; however, most students would prefer in-person meetings, which are less formal and allow for the discussion of problems more easily. Developing a sense of community is an important step in preventing feelings of isolation, and can develop knowledge through peer-to-peer learning among un-

dergraduates. Because few students within their cohort are likely to be completing a similarly structured project, students engaged in SEPs have a limited pool to ask for guidance (Trespalacios & Uribde-Florez, 2020). Supporting this contention, Student Instructor 4 mentioned that "having more people who understood what was happening maybe would have been helpful." Students were provided with an online Microsoft Team with relevant resources whereby they could communicate with each other; however, meeting with other students virtually is likely to be less beneficial in developing such relationships compared to meeting in an in-person setting (Rogerson & Anderson, 2020), and as a result the online platform was seldom used. Student Instructor 7 suggested that "[in-person] is a less formal environment . . . if you have a problem, then you're not worrying that [it's] going to be written on Teams or someone's going to see this and it's going to be brought up." Thus, Student Instructor 7 suggested that "a biweekly in-person meet . . . and discuss if you've got any problems, and actually chatting to each other would probably be the best." Therefore, as had been suggested, having an in-person meeting regularly from the beginning of the project would serve as a space to ask questions and talk through problems.

Students undertaking the SEPs also acknowledged that they would benefit from additional support, including instruction as to how they should engage with schools and being able to see work that has previously been done for a SEP. Student Instructor 5 had suggested that it would be beneficial to "show examples of someone's previous project just to see how it all comes together." Student Instructor 7 also mentioned how supervisors should "explain the exact way that we were going to be getting schools," which they thought would be beneficial from the beginning of the projects. They also noted that getting support from someone who is not a supervisor, but who knows how to help, would be effective, with Student Instructor 6 suggesting that "[it would be beneficial to] bring past people that have done the project to talk about it" and Student Instructor 7 mentioning that it would be an improvement to get "support [from] someone who isn't your supervisor but who knows roughly what to say and how to give you a hand with something if your supervisor's not getting back to you."

Conclusions and Future Direction

Although this report details the efficacy of community-centered capstone projects within an education setting, it is important to note that such projects can be used in a variety of different settings to provide similar authentic and community-based learning opportunities for undergraduates and outreach opportunities for pupils. Science-communication-based capstone projects have been used in a variety of degree courses including, but not limited to, medicine, engineering, marketing, and law (Chamberlain et al., 2020; Metcalf, 2010; Ward, 2012). It is also important to highlight how a well-developed network is vital for the efficient organization and running of such projects. In Northern Ireland, the STEM Hub and W5 have played an integral role in communicating with, and gaining participation from, schools in the local area. With the time constraints experienced in the busy final year of an undergraduate degree, it is vital that projects are well-organized to ensure undergraduates are not at a disadvantage relative to those completing a more traditional honors project. The nature of these projects also meant that schools were chosen within a relatively local proximity to the university and, as a result, all participants, including STEM undergraduates, pupils, and teachers, were local. This limited scope of participation meant that the perspectives of the various stakeholders, and thus the benefits, challenges, and insights derived from the stakeholders' experiences, could be specific to a Northern Ireland context. It is important to note that such projects are subject- and university-specific and thus are likely to be conducted differently to yield different benefits and challenges.

SEPs have been found to provide a unique community-based learning opportunity, with undergraduate students having the chance to develop professional skills through learning about real-world issues and directly working with schools in the community to deliver this information in engaging approaches. Moreover, the community partners can subsequently benefit by receiving intellectually stimulating and relevant learning resources to broaden their knowledge on the subject matter and encourage future career ideas. Initiatives like the SEPs therefore are an effective means of outreach for the university, aiding the achievement of one of their purposeful and

valued cornerstones within the community.

Although the circumstances in previous years have meant that the predominant method of delivery has been online, the varied responses from undergraduates and teachers alike have meant that future delivery options will likely be mixed, and the choice will be given to undergraduates who can determine the most suitable method for their project. The next academic years will bring new cohorts of undergraduates wishing to undertake SEPs, and thus it is imperative to develop new resources using the feedback gained from various stakeholders to both streamline and improve their experience, and that of the pupils. Looking forward, to optimize the outcomes of these projects for both undergraduates and pupils alike, it will be imperative to provide several adjustments, including (but not limited to)

- The facilitation of a regular in-person student-organized meeting for SEP students to discuss issues or concerns regarding the development or progress of their projects
- An overview from local outreach partners to the recruitment procedure for schools to the SEPs at the beginning of the project schedule, as well as a communication agreement between students and these partners
- The completion of a handbook specific to the SEPs outlining brief timelines and resources for tools and training resources
- Engagement with local community-based, informal educational organizations (museums, discovery centers, etc.) to open opportunities to deliver bespoke activities to their audiences

Together these projects will provide a unique and beneficial opportunity for STEM undergraduates to develop key skills as an alternative to more traditional lab-based projects, priming their entry into an education- or science-communication-related career in the future. With the implementation of the preceding suggestions, which aim to address the concerns raised by various stakeholders, the success of these projects can continue and grow in the coming years, offering effective opportunities for authentic and local community-based learning.

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Appendix. Activity Brief Example

Name: [Student Name]

Supervisor: [Supervisor Name]

Project Title: The Role of Microorganisms in Food Loss and Waste

Delivery: This activity aims to be delivered in person but can be delivered online if necessary

School Selection: Key Stage 3 pupils aged 11–14, Schools in Derry/Londonderry or Belfast if in-person. No restrictions if remote

Description:

The "*Role of Microorganisms in Food Loss and Waste*" activity has been designed to educate pupils about the real-world problem of food loss/waste and of the dual role that microorganisms play in this. Globally around one third of all food produced is lost or wasted. Approximately one-quarter this is due to microbial growth on food which can cause it to spoil and to become unsafe to eat. However, microorganisms and their actions may also offer a solution to this world wide issue by transforming food waste into useful materials such as biofuels, bioplastics and biofertilizers. Through a series of interactive activities students will explore the real world problem of food loss/waste, understand how controlling microbial growth on food can reduce food loss/waste and develop awareness of how the normal everyday activities of microorganisms makes them key players in addressing food loss/waste and contributing to the development of a circular economy.

This activity will complement the Science and Technology component of the NI CEA Key Stage 3 Curriculum: in particular, in the areas of learning "*Organisms and Health*" and "*Earth and Universe*". In-person delivery of this activity is preferred however it can be delivered online if necessary. IT facilities will be required for both modes of delivery.

The topic of this project is linked with the following Sustainable Development Goals:

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Community Engagement on the Mexico–U.S. Border: Nepantla Identity as Justice-Oriented Citizenship

Naomi Fertman and Sarah De Los Santos Upton

Abstract

Previous research has highlighted best practices for community engagement, problematized server/served approaches to communities, and identified both barriers and benefits for students engaged in this coursework. What is lacking, however, is a deeper examination of students who participate in community engagement in their own home communities. The purpose of our study is to better understand the impact and outcomes of community-engaged coursework through the lens of our students' intersectional identities. We argue that their unique social positions as both students and community members on the Mexico–U.S. border offer a window into understanding how students may participate in community-engaged coursework differently when they are members of the communities they are engaging with.

Keywords: Mexico/U.S. border, nepantla identity, community engagement pedagogy, justice-oriented citizenship, Hispanic Serving Institution

Interdisciplinary scholarship has touted the benefits of community engagement, such as an improved understanding of course material, the development of skills, and the ability to apply course concepts to gain a deeper understanding of complex social issues (Novak et al., 2007). Much of the existing literature focuses on identifying and disseminating best practices (Evans, 2018; Núñez & Gonzalez, 2018). Critiques surrounding community engagement often center on the ethics of sending students from privileged backgrounds into underprivileged communities they are not a part of (Risch, 2012). Eby (1998) argued that the dark underbelly of community engagement is that the institution and the coursework are centralized in the experience, frequently at the expense of the community that is being served. This thinking and the harmful impacts it engenders are reinforced when students come from privileged communities to complete service experiences with people from marginalized identity groups, often creating a server/served binary that positions university students as privileged servers and community members as underprivileged recipients (Dacheux, 2005; Henry, 2005).

The critiques above demonstrate how community-engaged learning can be problematic for community partners if it is not approached with care, and the same can be said for the student experience. Previous studies indicate that barriers to successfully completing community-engaged coursework include time, money, family obligations, anxiety, fear of being unprepared, procrastination, and workload (Burke & Bush, 2012; Gillis & Mac Lellan, 2010). Butin (2006) argued that most approaches to community-engaged learning assume that students are enrolled full-time, single, free of debt, and childless, when the reality is that it "may be a luxury that many students cannot afford, whether in terms of time, finances, or job future" (p. 482).

If measures are taken to alleviate some of the barriers discussed above, community-engaged learning has many benefits, including the potential to impact students' lives in significant ways. In a 13-year longitudinal study, Bowman et al. (2010) found that community-engaged learning continued to have a positive impact on students' well-being after graduation and into adulthood in the form of personal growth, life purpose,

environmental mastery, and life satisfaction. Previous research has demonstrated that a student's intersectional identities impact the ways they may perceive said benefits and barriers to their community engagement experiences. Female students have been noted to be more highly impacted by community engagement and perceive fewer barriers to engagement than their male counterparts (Xavier & Jones, 2021). The development of empathy, as an outcome of community-engaged coursework, has been noted as one such benefit (Wilson, 2011). Our own practice as educators has laid the foundation of our understanding of the potential of community engagement for our students, and we have been guided by the idea that community engagement "provides a platform that will empower students to gain self-awareness, radical empathy, and compassion, and learn strategies to identify solutions to social injustice issues through critical reflection, advocacy, and action" (Reddix, 2020, p. 8). Community-engaged learning also has the power to be transformative in nature. Westheimer and Kahne (2004) explained that education programs have the potential to create three different types of citizens, (1) personally responsible, (2) participatory, and (3) justice-oriented. Weiner (2015) explained that from a community-engaged learning perspective, personally responsible citizens operate from a charity model that encourages students to take individual action and improve moral character through volunteerism without connecting their service to course content or engaging in reflection afterward. Participatory citizens participate within existing systems and community programs as part of coursework. Finally, justice-oriented citizens "attempt to address social inequalities through service-learning" (Weiner, 2015, p. 328), reflecting on power and privilege and questioning what they can do to change oppressive systems. Westheimer and Kahne (2004) offered the following example to contextualize these three types of citizens: "If participatory citizens are organizing the food drive and personally responsible citizens are donating food, justice-oriented citizens are asking why people are hungry and acting on what they discover" (p. 242)

Those students accessing community engagement in our study all had one key component in common: All were residents of El Paso, Texas and/or Ciudad Juárez, Chihuahua, cities located on the Mexico-U.S. border. As Anzaldúa (2007) explained, borderlands are unique, in-between spaces, and there is much to be learned from living in the in-between and navigating these spaces on a daily basis. For example, people living in the borderlands often develop what Anzaldúa calls a "tolerance for ambiguity," which stems from their continual navigation and negotiation of borders, binaries, and boundaries. To make sense of this experience, she offered the concept of *nepantla*, a framework for understanding the borderlands where "identities are questioned, broken down, and rebuilt" (De Los Santos Upton, 2019, p. 136). Anzaldúa (2015) ultimately argued that nepantleras, or those who live in a state of nepantla, are uniquely positioned to engage in activism because of their abilities to think beyond binaries and build alliances across multiple, intersectional movements and identities. We therefore argue that nepantleras are uniquely positioned for community engagement.

Previous studies have highlighted best practices for community engagement, problematized server/served approaches to communities, and identified both barriers and benefits for students engaged in this coursework. In addition, much of the research in the field focuses on "real or imagined situations in which students are visitors to either the campus community or to the site where they offer service" (Risch, 2012, p. 210). We argue that there is a need for deeper examination of students who participate in community engagement in their own home communities. In her research on community engagement at UTEP, Risch (2012) explained that because students are most often members of the El Paso/Juárez region, they are using their "knowledge in order to make effective and long-lasting change in their families, neighborhoods, city, community, and region—regardless of whether the boundaries of those institutions match up with those of one nation state or culture" (p. 202).

The purpose of our study is to better understand the impact and outcomes of community-engaged coursework through the lens of our students' intersectional identities. Anderson and Cidro (2020) found that for Indigenous women performing community-based participatory health research, identity, emotional investment, and responsibility heavily influenced their research process, as well as a deep mutual love: "I think as researchers we engage in community-based

work both because we love our communities, and because they love us" (p. 3). What could this identification, emotional investment, responsibility, and mutual love look like for undergraduate students doing community-engaged coursework in their own home communities? As both students and community members on the Mexico–U.S. border, we argue that their unique social positions offer a window into understanding how students may participate in community-engaged coursework differently when they are members of the communities they are engaging with. By understanding the ways that different students are impacted, faculty will have the potential to develop more pedagogically sound community-engaged courses so that all students feel competent in registering for and completing courses utilizing this evidence-based best practice.

The University of Texas at El Paso (UTEP) is an R1 institution (top-tier public research institution as classified by the Carnegie Foundation) located 1.5 miles from the U.S.–Mexico border in the city of El Paso, Texas, directly across the Rio Grande from Ciudad Juárez, Chihuahua. El Paso has a population of 884,432 residents, 19.3% of whom live in poverty. The median household income in the city is $55,919 (United States Census Bureau, n.d.). There are 23,880 students enrolled at UTEP (undergraduate through doctoral-level studies), 48% of whom self-identify as first-generation college students. UTEP is a commuter campus with limited on-campus housing and most students living at home with family. The university is classified as a Hispanic Serving Institution (HSI), with 83% of the student body identifying as Hispanic, Latinx, or Chicanx. UTEP is an open access institution, meaning that all students who apply as undergraduates are accepted into the university. UTEP has dedicated itself to practices of inclusive excellence, and prides itself on its open access policy within all undergraduate programs. This practice is a demonstration of the school's clear commitment to social mobilization for its student population. In fact, UTEP has been ranked first in the United States for achieving both competitive research and student social mobility, and this focus on social mobility has helped graduates move from family incomes in the bottom 20% to the top 20% (University of Texas at El Paso, n.d.). Community engagement at UTEP is supported university-wide by its Center for Community Engagement (CCE). The center has been pivotal in implementing best practices in community engagement across the university and has been recognized for its excellence by receiving the Carnegie Classification for Community Engagement in both 2010 and 2020. Only 368 campuses across the country have received this classification; of those campuses receiving the classification, 89 are minority serving institutions and 53 of those are classified as Hispanic Serving Institutions (American Council on Education, 2024). The center plays a pivotal role in uplifting and supporting students' dual roles as both students and community members. The center uses the language of community engagement rather than service-learning to highlight the mutually beneficial outcomes of student involvement in community. The term "service-learning" implies that students will learn from the communities they are working in, whereas "community engagement" allows for mutually beneficial growth from all parties involved in working and learning together.

Both researchers in this project are faculty in the College of Liberal Arts. Naomi is a transplant to El Paso/Juárez and has been living and working in the community for 15 years, and Sarah is a third-generation Chicana who was born and raised in El Paso and attended UTEP as an undergraduate. Together, we have significant combined experience in implementing community engagement in our undergraduate courses and in performing community-engaged research at both the undergraduate and graduate level. We have witnessed student success and failure within community-engaged courses that we have taught. Both successes and failures can be attributed to class pedagogy (good and bad), student barriers (again both restrictive and inspiring), instructor errors and moments of ingenuity, and relationships with community partners. Over the years we have questioned why things are so wonderful when they are wonderful (when student learning far exceeds our original expectations) and why things are so challenging when course goals and student learning fall short. This project aims not only to gain a clearer understanding of the challenges of accessing community-engaged learning, but also to understand the impact of community-engaged learning with our unique student population with the inher-

ent interest in developing a framework for community-engaged learning implementation in future courses across our university and other HSIs.

The long-term goal of this study is to maximize the impact of community engagement for all students. We argue, along with Risch (2012) and Garcia-Guevara and Vivoni (2023), that structural adaptations are needed to make community engagement accessible for all students. To realize this goal, we sought to best understand students' expectations and experiences, students' hopes and fears, and the benefits and barriers that students face when entering into and completing our community-engaged courses. We also needed to understand how students' unique intersectional identities shaped those markers and subsequently shaped their overall experience with community engagement.

Methodology

Our initial research implementation was with the community-engaged face-to-face courses that we were teaching, which included two sections of Introduction to Women's Studies and one section of Chicana Identity Formation. These courses attract students majoring and minoring in Women's and Gender Studies, Chicano Studies, and Communication Studies. These courses also fulfill elective credits for students in other majors and minors, including some non-majors and minors. The data presented in this essay addresses our initial understanding of the impact of community engagement on students by helping us to distinguish between positive and negative outcomes and student learnings. As educators, both authors understand that listening to our students is key to understanding what has worked and what still needs refinement. We sought and received institutional review board approval so that we could safely engage with our students to best understand their experiences. We captured data about student experiences in two different ways, one being a survey we designed ourselves and the other a reflection activity that was designed and facilitated by the Center for Community Engagement. We developed a 19-question pre- and postengagement survey tool. The survey tool specifically focused on capturing information in two unique areas. The survey captured demographic information specific to best understanding students' intersectional identities, including their employment, roles as caretakers with their families, financial aid eligibility, and whether they were the first in their families to attend college. The second set of questions specifically asks about the student's barriers to accessing academic-based community engagement and perceived benefits from community engagement. The survey tools we created were intentionally designed with open-ended questions to maximize the opportunity for students to share their experience and knowledge.

The facilitated reflection session consisted of students responding to and discussing nine prompts that focused on students understanding the challenges they encountered, the ways that engagement expanded their academic understanding, and the ways that engagement helped them to develop empathy. During the first week of class, students completed the preengagement survey, over the next 14 weeks they completed their community engagement work, and during the final week of class they completed the postengagement survey and facilitated reflection. This pilot study occurred in fall 2022, with 77 undergraduate students participating.

Analysis

We used a grounded theory (Charmaz, 2006) framework to analyze the data generated from our pre and post survey tools and facilitated reflection session. We began with line-by-line coding to identify themes that emerged within and across the courses, then collapsed our codes into categories and subcategories, which we labeled with the words of our participants to ensure the data remained grounded in their lived experiences. Through our analysis, we identified four major themes: connecting to engagement, self-described benefits, ways of being, and process of engagement. Within the theme "connecting to engagement," students described the ways they connected to their community engagement sites, including their previous levels of experience and examples of the organizations and populations they collaborated with at their sites. Under the theme "self-described benefits," we identified three subthemes in student responses: developing professional skills, building connections, and expanding knowledge. The theme "ways of being" related to students' navigation of the self and their relationship to community. Subthemes

included intersectional identities and community embeddedness. Our final theme, "process of engagement," highlighted individual growth, changes in perspective, and solidarity-building as described by our students; subthemes included personal growth and development, "gaining perspective changing as a person," and "with community instead of for." In the following section we describe these themes and subthemes in detail and offer examples of each from our student surveys and facilitated reflection.

Connecting to Engagement: Previous Experiences and Site Placements

Students entered their community engagement sites with varying levels of experience, ranging from no experience through brief experience to multiple previous experiences. Some 62% of our students reported no previous experience with community engagement at the onset of the courses. For those students with previous experiences, their community engagement was often facilitated by faith-based and/or educational institutions. Faith-based opportunities were facilitated by churches and included serving as youth pastors and participating in service through youth groups. Both high schools and universities were educational institutions that facilitated previous community engagement. High school groups that facilitated engagement opportunities included band, student council, and National Junior Honor Society. For students who had encountered community engagement in the university setting, many identified cocurricular activities such as sororities and student organizations as facilitating entities. A subset of these students had previously enrolled in college courses that included community engagement experiences. Other students began their community engagement as peer leaders at the university, or through internships with community organizations. One student indicated that they had previously connected to service experiences through Americorps programming. Although students came into their community-engaged courses with limited experience, gaining experience, in particular firsthand experience, was a driving force in what they hoped to gain from their community-engaged courses.

Two major social service themes emerged in students' previous engagement experiences, food scarcity and children's issues. Within these categories, students had worked with a variety of food banks and local food distribution sites. Students had also spent time at our local child crisis center, orphanages, and other organizations that respond to the emerging needs of youth. In addition to these two themes, students engaged with a number of advocacy organizations working on social justice issues such as voting rights, environmental justice, housing insecurity, gender violence, and LGBTQ rights. In students' previous engagement experiences, they had completed a varied number of tasks and activities that directly connected with the sites they had worked with. Tasks ranged from simple low-skill activities such as cleaning, and sorting and organizing donated goods, to more complex tasks such as teaching, farmwork, and fixing computers. Students had also engaged in civic action through door knocking, outreach, and voter registration. Additionally, students had participated in both in-person engagement and virtual engagement through creating content for organizations' social media platforms. Finally, students cited artistic endeavors such as performances of events as examples of their previous engagement.

Building from previous levels of experience, several students described their expectations for what they hoped community engagement would be like in our courses. Students with limited or no previous experience had no real expectations for what a community-engaged course would be like. Some students identified previous bad experiences that shaped their expectations for what might be to come in these courses. Overall, students were hopeful for a lot of engagement, to experience different environments with a variety of opportunities, and to try and to experience new things. One student expressed their hope to "live the college experience" through participating more fully.

Through the community-engaged courses, students had various opportunities to work in the community with different populations at different sites. Students partnered with organizations and populations connected to course content; some had the freedom to choose their sites, and some students were assigned to specific sites and projects. Students engaged with migrant shelters and border-specific education, a local LGBTQ resource center and advocacy program, a resource center for new and growing families, community development organizations, and organizations working toward improving access to healthy food in

the border region. They interacted with a variety of populations ranging from youth to elders. Students described learning new skills and building knowledge through their community engagement sites, both specific to their unique sites and connected to larger systemic issues. Students reported learning gardening skills, teaching children, learning about breastfeeding, and gaining an understanding of resources that organizations provide to the community. They also reported learning the privilege of voting, about motherhood, and furthering their understanding of in-class concepts.

Self-Described Benefits

Developing Professional Skills

Faculty and institutions traditionally focus on developing professional skills when highlighting why community engagement should be included as a high-impact practice of choice in higher education classrooms. Our students echoed some of this area of interest in their preengagement surveys. They highlighted an interest in gaining new experiences, making job connections, team building, unlocking and sharpening their hidden skills and talents, applying field knowledge, time management, leadership development, networking, and developing relationships for references as well as how community engagement could lead to jobs, internships, and other opportunities. They made direct connections in their responses to how community engagement could benefit their future careers through hands-on work. Students identified that community engagement gives them a direct view into understanding how organizations function and how nonprofits work. Students ultimately expressed their desire to develop professional skills by gaining firsthand experience and knowledge and applying what they were learning in their classrooms to real-world settings. In their post surveys, students described meeting the professional development goals they set in the pre survey by acquiring new leadership and communication skills. They also reported learning valuable lessons, some positive and some negative, about the inner workings of organizations and their communities. One student reported their significant learning was "how not to run a nonprofit"; another reported "help is needed" as their learning.

Building Connections

In addition to the professional development skills that students both sought and experienced at their sites, in their pre survey they also identified many potential benefits that moved beyond the realm of professional development. One student expressed just hoping to have fun while completing their engagement. Some of these benefits highlighted their interests in building connections, such as meeting new people and developing friendships. Some students saw their work in community engagement as outward and community focused, describing their potential benefits with phrases such as "helping others," "cheering up," and "supporting and improving community." Ultimately, these benefits were steeped in social and emotional learning, and, as one student described, could potentially move beyond the tangible to more embodied feelings, such as the potential of community engagement to be "grounding."

Expanding Knowledge

Students categorized "learning as a benefit" as an overarching category in their pre surveys. Learning is a complex topic that they understood in distinct and poignant ways. Many students identified expanding their knowledge about community needs and how society works as the foundational benefits. They described this experience as becoming more aware of what is happening, developing a nuanced understanding of issues and struggles the community faces, as well as learning about the work that needs to be done and the resources available in the community.

Students were able to understand that community engagement had the potential to be a tool in their learning process by encouraging them to learn. Multiple students identified community engagement as enabling a deeper way to learn.

As was said previously, some student responses moved from the direct and tangible to more embodied understanding of the ways that they individually exist in communities through their personal responsibility and a deeper understanding of how the "world is different." Students also shared how community engagement gives them a pathway to contribute to society within their roles as students. Students saw community engagement as a tool for "enhancing their own different lenses." Participants also expressed their desire to learn about

the impact that community engagement actually has on communities. One student expressed hope that community engagement would be a bridge to deeper understanding by helping them to conceptualize what inspires them.

Ways of Being

Intersectional Identities

Students involved in this study were enrolled in courses on identity, sexuality, women and gender studies, and borderlands, and based on the nature of these courses and the content studied, identities were front and center in the selection and experience of engagement sites. For example, when describing their previous experiences with engagement, many students relied on the identities of those present at their sites to contextualize the work they had performed, such as different age groups, or organizations centered on identity markers such as ethnicity, sexuality, ability, housing, or military status. When describing the engagement work that they hoped to accomplish throughout the semester, students again returned to identity to not only select the issues they hoped to focus on, but also to situate themselves within communities. Students centered the importance of identity, a topic they saw as being relatable to course materials, and expressed their desire to learn more about issues facing women, LGBTQ+ communities, and people who have been displaced, and some students specifically cited their desire to approach these topics from an intersectional perspective. They also hoped to become more comfortable with their own identities, and learn about the cultural backgrounds of others. For example, one student shared their desire to "find a sense of Chicano identity by connecting with my community at El Paso." Ultimately, they sought to become involved in the creation of spaces where people with different identities could thrive. The combination of community engagement and classroom materials created a unique space where students were safe to reflect on their own identities and the ways those identities may shift over time. Some students began publicly using different identity markers by the close of the semester.

Community Embeddedness

Although community engagement was new to most students who participated in these classes, students entered the experience with excitement. One explained, "I have never worked with a community based organization, yet, I feel excited to participate and engage with further communities." Students also stressed the importance of entering their engagement with open minds: "To have an open mindset, learn more about how the community works"; "I am going in with no expectations and open mind." Although they knew there would be some challenges, such as balancing work schedules, they expressed a general willingness to try. They also entered into their sites from a place of community-mindedness, or at least expressed their desire to arrive in this place.

Students who participated in these classes expressed a geographic connection to their cities El Paso and Ciudad Juárez and to the overarching borderlands community that connects the two sister cities. It was clear to us that "my community" meant different things to different students, and that personal understanding was one piece of their framework of understanding for community engagement: "I don't know what to expect from the community engagement, but I want to learn more about my community." Many students initially approached the community engagement assignment through a traditional lens of "community service," which they defined as "helping people," "giving back," and "mak[ing] a change."

Other students understood community engagement as a process in which both the community and the individual working "in community" grow and learn together. Students viewing community engagement through this lens identified "being in," "engaging with," "connecting with," "appreciating," "contributing to," and "better shaping" community as clear outcomes of their engagement experiences. Students also identified wanting to understand their communities better, noting that identifying community concerns, seeing and understanding problems, and understanding how communities work were goals of their engagement. Students also sought to build community, including their own social networks, aiming to "help others join" as part of their community engagement. Students were hopeful that their contributions would lead to positive outcomes, noting that they hoped to better shape community, "make others comfortable," and actively participate in aid through their work. As part of their community-building goals, students centered relating to others through

intentional communication to "facilitate conversations," honor "different perspectives," and "respect others' opinions," and enter into their engagement opportunities by "listening" with the mindset that "everyone thinks differently."

Process of Engagement

Personal Growth and Development

Students in their pre surveys shared the overarching goals of being involved and being of service during the upcoming semester. They saw this opportunity as a chance to either develop themselves or to develop in service to their communities. Students viewed this concept of "in service to community" through two different lenses. Some students expressed an understanding of a more surface-level view of change, as seen in one student's hoping to "make a difference." Other students saw that community engagement had the potential to create "lasting changes" and to allow for opportunities to "take up space" in the world in ways that traditional classrooms are not able to fulfill. Beyond making a surface-level difference, students described their hope that engagement could lead them to making changes in their own lives that led them to "become useful to my community." They hoped to become more "well-rounded" and "to have a more humbled perspective on daily life, not materialistic." One student described their desire to learn "how to take up space in a comfortable environment & get more engaged in events/things I care about."

Even with the best intentions of faculty, students, and community partners, not all students in the classes were able to complete their engagement hours, sharing that personal issues impacted their ability to complete the work: for example, "due to health [did] not go to events." Those students who were able to complete their service shared that they had varied experiences accessing their engagement experiences, ranging from "very easy" to "hard." Students shared that their own commitment to and consistency at their sites impacted their overall learning from the experience.

The ways students entered their sites resulted in learning outcomes that expanded beyond what we would expect and highlighted the ways that positive educational experiences can be transformative for students. One student described their learning as "very moving and useful information." Many students had glowing reports of how their community engagement experiences transpired: "so cool," "gratifying," they had "amazing opportunities," and "useful." Beyond their initial excitement, many students emphasized their learning was "active" and led to learning more about the people around them. They explained that they learned more about "new people," "new skills," and "people from El Paso" and learned how to "relate with people" more deeply and "impact people's lives." Others shared their excitement about "learning new things" more generally, including "I want to learn more about everything. Today's world is so different from back than [*sic*], things have changed." Students reflected that as a result of their engagement experience they became "engaged and knowledgeable," learning about problems they were previously unfamiliar with, what people "go through" and "how they affect them" and "learning what people need." These learnings led to their desire to "continue engagement" and to become more involved once they realized that "getting involved isn't as scary and complicated as I think it is."

"Gaining Perspective Changing as a Person"

Students also reported that their community engagement impacted their personal development by "enhancing lenses," challenging them to "care about" issues, and helping them to build "empathy" and to be "kind." Community engagement was a tool in helping them to more deeply understand, engage with, and appreciate the communities and cultures they both live in and worked with over the semester. Ultimately, engagement was an opportunity "to understand others, and be touched by other stories."

Students reflected that community engagement led to a process of self-discovery involving learning about the self through interactions with others and ultimately gaining perspective about the interconnectedness of people regardless of their intersectional identities and life experiences. One student explained that their engagement led them to "embrace and learn about [their] heritage," and another described how they learned to "appreciate [their] own privilege." Students recognized their personal growth, explaining that participation helped them feel "independent," "outgoing," and "outspoken," and taught them to become "comfortable being uncomfortable." This

process of self-discovery was intimately intertwined with their interactions and relationships with people at their sites. Many students reflected on the importance of holding space for "other people's perspectives" and acknowledging that "people have influence on each other." One student explained that their work with children "gives me faith in the following generations." Another described their realization that by helping themselves they are better positioned to help others, a realization that places emphasis on collective growth rather than paternalistic approaches to community service. Along this line, another student described that rather than being positioned to advocate for others, they felt community engagement had instead taught them to help create spaces where others can advocate for themselves. Finally, several students described goodness as an overarching, big-picture takeaway, which one student put into words beautifully in their reflection, explaining they learned "how to be good to people no matter what. You never know what someone else is going through."

Community engagement gave the students more in-depth perspectives into the worlds that they had been living in and exposed them to problems and difficulties that others in society encountered that some students had been otherwise unaware of. This exposure showed them that progress is needed and that there are concerns that others face that are "typically unheard." These learnings, whether internal or external, helped the students to see the value in the work they had completed during the semester as well as the value of being engaged throughout their lives. They reflected on the importance of engagement because of the "impact engagement makes." Although the act of being engaged may have seemed daunting 15 weeks previously, at the end of the semester they saw that "simple actions make an impact" and "small steps go a long way." They also left their semesters seeing themselves as being capable of helping and understanding the importance of helping. Their responses captured how these experiences had marked the ways they would live their lives moving forward, sharing that they were "grateful" and needed to be more "mindful" and to take "time to slow down."

"With Community Instead of For"

Being involved in community engagement fundamentally changed the ways that some students saw their roles in change making. In pre surveys students self-categorized into two groups, fixers and learners. The fixers responded as outsiders stepping in with their help to solve a problem. They saw communities as being "in need" and wanted to "help people," "help out," "help make change," and to "serve" the "underprivileged." Their wording identified that they saw distance between themselves and the people they were serving and placed them as temporary one-dimensional outside "helpers" in these spaces.

The learners arrived at their community engagement classes with less of an outsider looking in mentality and already connected to facets of solidarity as the tenets of what they hoped to gain from their experiences. These students used language that placed community-building and connections as desired outcomes of community engagement. They emphasized their desire to "create connections", and develop a "literal sense of community," emphasizing that engagement could offer possibilities for community-building: "Community engagement in courses is giving back to a community, being in that community and helping others to join it." They hoped to become more "familiar with [their] community" and gain "a deeper understanding of those around you and their cultures" and "an increased appreciation for the community around you." Their roles were not to fix problems but to gain "knowledge about what and who your community is, and how you can best help improve it," with some identifying specific issues facing the border community, such as "migration" and "human rights."

Whether they came in as fixers or learners, moving through 15 weeks of community-engaged learning deepened their connection and commitment to community. As one student explained: "I think learning and understanding the importance of community engage[ment] is crucial." Students left the semester believing that "knowing" and "learning from" community are critical. Their experiences showed them the "problems communities have" and "how underserved the community is." These needs then became the jumping-off point for how students believed that responses should be constructed. Students identified that "needs of the community vary" and that subsequently the "volunteer work [should be done] depending on needs." Students also learned that being in solidarity with communities empowers

them as changemakers, not only to change their communities but also to be open to self-change in the process. For example, one student explained that as they learned more about cultural backgrounds within their community, it led to an exploration of their own cultural backgrounds and increased self-knowledge. Another described how learning about their community allowed them to better understand their place in it: "I learned to not advocate for underrepresented communities instead, spaces must be created to allow these communities to advocate for themselves." It also helped them to see themselves as allies and advocates, finding new spaces to use their voices: "It has taught me to go out and know your community also to be outspoken about issues." Finding themselves deeply embedded in community, "with community instead of for" led to their positionalities as changemakers from within.

Our students ultimately demonstrated their understanding of the societal expectation that being "in need" is an individual deficit that stems from individual failure. They were able to articulate that this need comes from inequity in society that trickles down to individual experiences within communities. This learning involved a shift that places blame on structures of power and systemic inequality for creating the circumstances that lead to populations who are underserved.

Conclusion

Our study focused on the learning and experiences of UTEP undergraduate students. UTEP is a proud border institution, and its location on the Mexico–U.S. border informs its investment in the binational and bicultural identity of its student body. UTEP students, the majority of whom commute to school on a daily basis, live and work in their community and share a unique duality as both border community members and students. Students who participated in this study were entering into their community engagement coursework from a position that moves beyond traditional understandings of community engagement from the literature. Early stage data showed us that community engagement embedded in coursework was more transformational for our student population than we had imagined and that our student population was significantly more invested in community engagement and transformational and systemic change than we had originally understood them to be.

Nepantla Identity as Justice-Oriented Citizenship

Although students with intersectional identities are often viewed as deficient in traditional university settings due to language, class status, family status, citizenship, and other factors, we argue that is it specifically these facets of our students' identities that position them to excel in community-engaged coursework and move beyond existing community engagement literature. As two faculty members living and working on the Mexico–U.S. border, we are witness to the ways in which nepantlisma impacts our students and informs their learning and engagement. For these students,

> Anzaldúa's concepts are more than just words on a page. These Nepantleras enter classrooms and show up in our communities in ways that embody conocimiento, a transformative mode of thinking that draws on la facultad, a quick perception much like a sixth sense, and mestiza consciousness, a consciousness which emerges from navigating the in-betweenness of the Borderlands. (De Los Santos Upton, 2019, p. 136)

Although students' nepantla identities often leave others to classify them as being successful "in spite of" those identity markers, our findings support the reality that it is "because of" their positionality and identities that they surpassed traditional expectations of community engagement. For example, Whitfield and Ball (2022) explained that students in their study in the mid-Atlantic developed an increased "intolerance of ambiguity" as a result of their community-engaged coursework. Our students entered their community-engaged coursework with a tolerance for ambiguity inherent to their nepantla identities, which we argue ultimately served not only them, but their community partners as well. Our students understood systemic problems in deeper ways from their embeddedness and lived experiences in border communities. As was noted by Anderson and Cidro (2020) in their research on Indigenous identities in community-based participatory research, embeddedness in community has the

power to deepen one's relationship with community-engaged work (p. 13). Because they were members of their communities, rather than passive witnesses, community engagement created opportunities for our students to see themselves as changemakers from within. Students entered their coursework indicating that they wanted professional experience, and post survey responses indicated that this was achieved. Post surveys also clearly indicated that professional experience was just one piece of what they gained, and their experiences offered opportunities for transformational learning, with an emphasis on better understanding the systemic problems within their own communities. Students, regardless of their previous exposure to community engagement, experienced a shift from viewing community engagement as "fixing" problems to "learning" deeply about these problems, then engaging as changemakers to work in community with others toward solutions. This shift of focus into in-depth comprehension of systemic issues demonstrates their movement into the realm of justice-oriented citizenship as explained by Westheimer and Kahne (2004).

Next Steps

After analyzing our pilot data, we understand that increasing access to community-engaged coursework is of utmost importance. Looking into the future, we see two unique directions for how results from this study can benefit future students and research.

As a direct result of this research, Naomi garnered support to develop a place-based guide for implementing community engagement courses with students at UTEP with the support of the UTEP Center for Community Engagement. This course development guide, intended for faculty implementing community-engaged learning in their academic classes at all levels, or for faculty interested in making their community-engaged learning more accessible and equitable for all student participants, was built with the guidance of the findings collected in this initial study. This guide helps faculty to consider ways that students working in their own communities may benefit from project-based community engagement, with a focus on an accomplishable task rather than completing a certain number of hours that may be unattainable for some students based on their out-of-school expectations (work and caregiving) and access to transportation. In addition, this guide includes an open access community-engaged library repository (created with the support of the open education resource librarian at UTEP), with resources on not only transformative educational pedagogies, but also including supplemental readings on justice-oriented citizenship and nepantla identity formation.

As is the case with much grounded theory research, "our work suggests pursuing more than one analytic direction" (Charmaz, 2006, p. 10), in addition to the development of a place-based guide that met our original research goal of maximizing the impact of community engagement for all students. Our focus on identity highlighted the experiences of some unique student populations who remain largely invisible on campus.

It was clear from pilot data that students who identify as parents or caregivers face challenges in accessing these transformational opportunities. Existing research on single mothers and higher education demonstrates that while balancing coursework, household duties, and child care, caregivers are often navigating obstacles such as rigid institutional expectations, financial strain, and a lack of career guidance (Freeman, 2020; Forste & Jacobsen, 2013). Beyond the individual barriers that caretakers face, they are also frequently overlooked and undervalued by institutional policies and instructors (Ajayi et al., 2022). We believe that more needs to be done to understand caregivers as a student population and to ensure that these students have access and support to participate in community-engaged coursework. In working toward this research and pedagogical goal, we plan to partner with Moms N' Majors, an on-campus affinity group for student parents/caretakers. We are seeking funds to hire these students as research assistants, and the next steps of this research project will involve student research assistants completing in-depth interviews with other caretaking students to better capture the realized barriers and benefits of caretaking students that we may have otherwise overlooked or not understood. As this project continues to unfold, we will remain responsive to the needs of our students as they emerge to ensure access and equity in community-engaged learning.

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Facilitating a Strategic Community–Academic Partnership to Address Substance Misuse: Three Years of Evaluation and Outcomes

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Abstract

This article presents the findings of a longitudinal study documenting the progress, challenges, adaptations, and outcomes of a strategic community–academic partnership (S-CAP) to address substance misuse between a local university and a medium-sized county in East-Central Indiana. The article details how the S-CAP built on initial successes to develop new organizational capacities and maximize the productivity of the S-CAP model. It also explores how S-CAP leadership navigated the dynamic environment associated with community coalition work while developing a cohesive sustainability strategy. Notable outcomes produced by the coalition over 3 years include increasing membership to over 500 individuals and more than 30 organizations, assisting with the implementation of community initiatives such as the installation of a naloxone vending machine at a local hospital, and leading collaborative partnerships that have generated over $1.5 million in funding for new addiction services for the county.

Keywords: academic and community partnership, coalitions, substance use, addiction, community organization

In March 2020, a small group of university faculty members, public health professionals, and community stakeholders in a medium-sized county in East-Central Indiana hosted an addiction symposium. The symposium aimed to discuss how substance misuse issues were impacting local communities and to explore strategies for addressing identified problems. From this initial symposium, a movement was launched to create a community–academic partnership (CAP) between county residents and university faculty, staff, and students. The primary purpose of the CAP was to enhance community service capacities to address substance misuse through collaborative efforts between the community and university (Minnick et al., 2022).

Although the existence of CAPs is well documented in academic literature, the Delaware County CAP model is unique in that it

1. Is grounded in the epistemology behind Community Anti-Drug Coalitions of America (CADCA).
2. Utilizes the Substance Abuse and Mental Health Services Administration's (SAMHSA) strategic prevention framework (SPF) to guide its activities.
3. Does not address a specific problem such as overdoses but focuses on the full continuum of care, providing a holistic approach to building community capacities.
4. Is designed to be sustainable without external funding.
5. Works at the macro level rather than addressing clinical services and includes key stakeholders from all 12 SAMHSA-defined sectors of the community.
6. Can be leveraged to expand beyond the local level to impact state policies.

7. Strategically incorporates community members; service providers; elected officials; and university students, faculty, and staff rather than just researchers or select populations within a community.
8. Is evaluated as a longitudinal community intervention (Drahota et al., 2016; Minnick et al., 2022).

Identifying these differences in relation to existing literature on traditional CAPs led the Delaware County CAP to eventually define itself as a *strategic* community–academic partnership (S-CAP) to highlight its unique framework. This subtle variation in definition emphasizes the distinctiveness of the S-CAP's structure and organizational activities.

This article details the progression, challenges, adaptations, and outcomes produced by the S-CAP in 3 years of operations. S-CAP goals include continuing to explore the sustained impact of the model and to assess its potential as an evidence-based practice for addressing substance misuse issues within local communities. All projects discussed in this article received exemption or approval from the Ball State University Institutional Review Board.

Background: Environment and Demographics

Delaware County is located in the East-Central region of Indiana and has an estimated population of 111,871 people (United States Census Bureau, 2023a). Muncie is the largest city in Delaware County and is home to Ball State University, a public institution of higher education that has around 20,000 students (U.S. News and World Report, n.d.). Ball State has a 72% acceptance rate, with 73% of students identifying as White, 10% as Black or African American, 8% as Hispanic or Latino, and 2% as Asian or Native American. Females compose the majority of students at 61%, while males make-up 39% (U.S. News and World Report, ND). Reliable student mental and behavioral data is not currently available for Ball State (American College Health Association, 2019). However, trends from the 2023 Indiana College Substance Use Survey (N = 5,387) showed that more than half of participating college students in a statewide sample had consumed alcohol in the past month, one in five had used electric vape products, and nearly one in four had used marijuana (Reho & Jun, 2023).

As of 2021, Muncie had a population of approximately 65,000. The racial composition of the population was 82% White, 11% Black or African American, 3% Hispanic or Latino, and 2% Asian. In terms of education, 89% of residents held a high school diploma, and 25% had earned a bachelor's degree or higher (United States Census Bureau, 2023b). The median household income was $36,661, with 30% of residents estimated to live below the poverty line. Additionally, 10% of individuals under the age of 65 were uninsured (United States Census Bureau, 2023b).

At the county level, 26% of families were classified as asset-limited, income-constrained, but employed households (Indiana United Ways, 2020, p. 35). Furthermore, in 2021, Delaware County recorded 89 fatalities attributed to drug use, representing a 48% increase from the previous year. Of those fatalities, 79 deaths were specifically linked to opioid overdoses (Indiana Department of Health, n.d.). That same year, 16% of adults in the county reported experiencing frequent mental distress. Delaware County behavioral health clinics also documented 611 substance-misuse-related treatment admissions in 2021, ranking eighth highest among Indiana counties, despite the county being the 15th largest in population. Finally, Delaware County had an opioid dispensation rate of 893 per 100,000 residents, ranking 21st among all counties in the state (Indiana State Epidemiological Outcomes Workgroup, 2022).

Community–Academic Partnerships

In a systematic review of 50 articles discussing CAP structures and activities, Drahota et al. (2016) provided the following definition for a CAP, based on their findings:

> CAPs are characterized by equitable control, a cause(s) that is primarily relevant to the community of interest, and specific aims to achieve a goal(s) and involves community members (representatives or agencies) that have knowledge of the cause, as well as academic researchers. (p. 192)

Additionally, the authors identified that the most important factors for facilitating a CAP were trust, respect, and good relationships among partners. The most frequently cited hindering factors were time commitments, role clarity, and the function of partnerships. The authors further noted that the

evaluated articles rarely reported membership numbers, the duration of CAP activities, or distal outcomes, and few of the studies involved longitudinal, systematic research of the CAPs in the literature.

In contrast to Drahota's findings, the Delaware County S-CAP is grounded in an evidence-based community organization framework, is systematically evaluated, and reports quantitative outputs associated with S-CAP activities. It is also designed to produce distal outcomes and be measured longitudinally. The Delaware County S-CAP has a sizable and active membership composed of students, faculty, and community members, and has a clear organizational definition, mission statement, and strategic objectives. It defines itself as an organization that "represents a Strategic Community–Academic Partnership between Delaware County and Ball State University that seeks to increase harm reduction, prevention, treatment, and recovery community capacities in Delaware County and to unify the effort to address addiction in the region" (Addictions Coalition of Delaware County, n.d., para. 1). The S-CAP's strategic objectives are to (1) bring the resources, energy, and expertise of the university to the community; (2) assist in implementing strategic projects proposed by local community residents, organizations, and university personnel; (3) serve as an organizational gateway and networking platform for the ongoing addiction prevention, treatment, harm reduction, and recovery efforts in the local community; (4) provide resources on evidence-based practices, environmental strategies, and grant funding opportunities; and (5) incorporate an interdisciplinary approach to addressing substance misuse issues in the local community (Minnick et al., 2022).

S-CAP activities, planning processes, and organizational structure are grounded in CADCA's approach to facilitating community coalitions and SAMHSA's SPF (CADCA, 2018; SAMHSA, 2019). The CADCA methodology for facilitating community coalitions includes common strategies to strengthen trust and foster connections with multiple community sectors, such as targeted outreach efforts and branded social marketing campaigns (CADCA, 2018). The SPF is a holistic, ecological approach to engaging in macrolevel substance misuse prevention that emphasizes seven primary steps for creating effective interventions: (1) assessment; (2) capacity; (3) planning; (4) implementation; (5) evaluation; (6) cultural competence; and (7) sustainability (SAMHSA, 2019). Although the SPF is specific to substance misuse prevention, the S-CAP has adapted it to address the full continuum of care in both community and university settings.

Organizationally, the S-CAP was originally composed of (1) a central leadership team consisting of university personnel who managed the day-to-day operations of the coalition; (2) a planning committee comprised of university personnel and community stakeholders that facilitated community projects and planning activities; and (3) member-led groups that enabled community members to propose and lead S-CAP projects. A more thorough description of the S-CAP's original development and structure can be found in a CAP development article published by Minnick et al. (2022).

Progress, Challenges, Adaptations, and Outcomes of the S-CAP

The Delaware County S-CAP, also called the Addictions Coalition of Delaware County, established a strong foundation during its inaugural year of activities in 2020. The S-CAP formalized an organizational structure, established operating procedures, defined member roles, and achieved several notable outcomes, such as establishing a 286-person membership roster, creating two immersive learning courses devoted to S-CAP activities, participating in several targeted community outreach events, and facilitating several new addiction services in the community and on the Ball State campus (Minnick et al., 2022). These activities included the installation of two neighborhood naloxone boxes, providing assistance with the implementation of a Strengthening Families Prevention Program, and conducting four free workforce development trainings for community members. The S-CAP also played a leading role in helping to bring a nationally recognized recovery café program to Muncie. Recovery cafés are a type of community service that promotes recovery by providing a space for individuals actively working on their sobriety to interact with peers in a supportive environment (Recovery Café Network, 2022). Finally, in the most significant capacity-building exercise and arguably the most important intervention implemented by the S-CAP in Year 1, a community advisory board was formed. This board was composed of 20 key community stakeholders, including the deputy mayor,

deputy prosecutor, county sheriff, leadership officials from primary local mental and behavioral health service providers, and influential representatives from prevention, treatment, and harm-reduction coalitions. The formation of the board provided S-CAP leadership with a formal line of communication with these influential community members and elected officials, while also demonstrating a commitment to addressing addiction issues in the county in a holistic manner. This commitment was critically important, given the multifaceted impact and intersectionality of addiction problems on multiple local public sectors and social welfare systems, such as criminal justice and the courts, behavioral health providers and the health department, youth and schools, and housing authorities. The advisory board also provided an avenue for the S-CAP to directly serve as a coordinating body for addressing addiction issues in Delaware County and to assist with planning for the county's use of Opioid Settlement and American Rescue Plan Act funds. Full details on the composition of the S-CAP's current advisory board are provided in Table 1.

Organizational Adaptations

The S-CAP currently structures its operations around a 12-month reporting cycle that commences and concludes with the S-CAP's Annual Addiction Symposium in March. In the month preceding the symposium, the leadership team conducts process and output evaluations for the preceding year. With regard to the evaluations, the leadership team examines the coalition's performance and functioning by documenting and categorizing all the outputs produced by the coalition into an annual report. Additionally, the leadership team discusses internally and with external community members process evaluation questions such as "How we can sustain and continue strengthening relationships with community members and community organizations?" and "How can we keep the community engaged in the coalition's goals and activities?" The team also identifies emerging organizational needs, explores implementing new procedures and activities, establishes priority areas, and confirms advisory board participation for the

Table 1. Delaware County S-CAP Advisory Board (2023; *N* = 25 members)

Delaware County S-CAP Advisory Board
Criminal Justice
• Police Department: community outreach officer
• Sheriff's Office: county sheriff
• Probation Department: chief probation officer
• Prosecutor's Office: deputy prosecutor
Community, service, & faith-based organizations
• Prevention Council: Two board members from the County Prevention Council
• Treatment service providers: Key administrators of four primary county substance use disorder providers
• Recovery community: director of Recovery Café Muncie
• Harm-Reduction Street Outreach Team: two team leaders
• Community coalitions: representation from five external coalitions
• Community stakeholders & residents: multiple stakeholders & residents
University
• College of Health: dean
• University Addictions Research Center: director
• Department of Social Work: two faculty members
• Department of Nutrition & Health Science: faculty member
Elected officials
• Mayor's Office: deputy mayor
• County Commissioners: one county commissioner
• Local Department of Health: director

upcoming year. These findings are subsequently presented to S-CAP members during the annual symposium, where proposed changes are formalized into procedures, and where S-CAP goals are finalized or expanded upon by the coalition collectively. This process has resulted in significant changes to the activities and structure of the S-CAP over the past 3 years.

First, the leadership team grew from three to four members during the coalition's second year to enhance the team's capacity for project engagement and community outreach. The S-CAP's planning committee also expanded from five to 11 members during this time frame. However, in Year 3, the planning committee was discontinued, as it was determined that it was unnecessary given that committee and leadership team members were already regularly meeting organically via their collaborative work on coalition projections. During this time, the leadership team also elected to stop holding regular leadership meetings, as email and other digital communication platforms negated the need for the scheduled meetings. As a result of these changes, more time could be allocated for project development without compromising community connections or relationships with partners.

A similar scenario also unfolded during Year 2, with the member-led groups. Initially, they were promoted as avenues for member involvement but, following implementation, were found to be unsustainable and somewhat counterproductive. Member feedback indicated that they inadvertently pressured members to generate ideas and strategies rather than allowing for a more organic process to unfold. This feedback was a key takeaway and shifted the coalition's focus to allow collaborations between the community and the university to guide the creation of coalition initiatives rather than to try and directly stimulate ideas. However, it's essential to clarify that "organically" in this context does not denote randomness or lack of intentionality. Active participants in the S-CAP receive regular communications outlining coalition priorities or, in the case of service providers, possess preidentified capacities and interests that align with ongoing S-CAP projects or planned initiatives. Thus, although the inception of a new project may seem completely organic at origination, the impetus behind it remains strategic.

Overall, despite the discontinuation of the planning committee and member-led groups in Years 2 and 3, the leadership team did feel that they originally had a positive impact on the growth of the coalition and played a positive role in its development. As described by Drahota et al. (2016), establishing community trust and fostering strong relationships are pivotal for successful CAPs, and these activities significantly contributed to those aspects in the S-CAP's inaugural year. They also afforded the S-CAP exposure to diverse sectors of the community. Consequently, although not sustainable in the long run, they did yield tangible benefits in terms of early relationship-building, as evidenced by the coalition's growth from 286 members in the first year to 571 members in the third year. Specific details regarding the S-CAP's organizational structure can be found in Table 2, and information on S-CAP logistics can be found in Table 3.

Table 2. Delaware County S-CAP Organizational Structure

Items	Year 1 (2020–2021)	Year 2 (2021–2022)	Year 3 (2022–2023)
Leadership team	Three members	Four members	Four members
Planning committee	Five members	11 members	N/A
Membership	286 members	405 members	571 members
Advisory board	20 members	21 members	25 members
Member-led groups	Six	One	N/A
Internships	Five students	Eight students	Seven students
Immersive learning	Three courses	Four courses	Four courses

Table 3. Delaware County S-CAP Organizational Logistics: Meetings and Outreach

Year 1 (2020–2021)	Year 2 (2021–2022)	Year 3 (2022–2023)
Meetings		
• Three all-member quarterly meetings	• Three all-member quarterly meetings	• Three all-member quarterly meetings
• Two advisory board meetings	• Three advisory board meetings	• Three advisory board meetings
• 10 planning committee meetings	• 10 planning committee meetings	• N/A
• 10 leadership team meetings	• 10 leadership team meetings	• N/A
• Eight monthly newsletters	• 10 monthly newsletters	• 10 monthly newsletters
Outreach		
• Facebook	• Facebook	• Facebook
• LinkedIn	• LinkedIn	• LinkedIn
• Instagram	• Instagram	• Instagram
• Website	• Website	• Website
• YouTube	• YouTube	• YouTube

Community Service and Organizational Outcomes

In addition to significant organizational and logistical adaptations initiated by the S-CAP over the first 3 years, the coalition also produced a number of noteworthy community impacts. In Years 1 and 2, the S-CAP demonstrated productivity by spearheading workforce development initiatives, securing small grants for community trainings, creating a widely disseminated community addictions resource map, and presenting a syringe service program proposal to local elected officials. More significantly, the S-CAP contributed to a collaborative effort to establish a recovery café in Muncie and wrote a grant that funded the Muncie harm-reduction street outreach team. However, it was in the third year that the S-CAP's activities notably escalated. During this time, the coalition successfully secured funding to institute annual prevention and peer recovery coach scholarships for community members and to establish a trauma-informed, recovery-oriented system of care community workgroup. Further, the coalition played a key role in installing a naloxone vending machine in the city hospital, procured two community naloxone boxes and two community syringe disposal boxes that were installed in high-need areas, and obtained state certification as a naloxone distributor. The S-CAP also obtained university funding to establish an addictions research center within the College of Health called the Ball State Center for Substance Use Research and Community Initiatives (SURCI). This center was created to formally house the coalition within the university and to serve as a consistent source of financial support. Although the establishment of the SURCI signified a major milestone for the S-CAP in terms of capacity building and sustainability, the most important development for the coalition was their contribution to the acquisition of a $900,000 grant in 2022 to establish a 24-hour crisis center in Muncie. Partially organized, developed, and written by S-CAP members, this service addressed a critical community need identified by partners and served as compelling evidence of the efficacy of the S-CAP model in effecting substantial community change. Specific details on S-CAP service outputs are provided in Table 4, and information on S-CAP fiscal outcomes are provided in Table 5.

Table 4. Delaware County S-CAP Direct Service Outputs: Community

Year 1 (2020–2021)	Year 2 (2021–2022)	Year 3 (2022–2023)
Community (unfunded initiatives)		
• Two annual addictions symposiums • Four workforce development trainings • Community Strengthening Families Prevention Program[a] • Two community naloxone distribution boxes • Recovery Café Muncie[a] • Syringe service program proposal	• Annual addictions symposium • Three workforce development trainings • Community resource map	• Annual addictions symposium • Community resource map • Established Annual Certified Prevention Specialist Scholarship • Community naloxone vending machine[a] • Two community syringe disposal boxes[a] • Procurement of two naloxone boxes: one campus, one community

[a] The Delaware County S-CAP was not the primary implementer.

Table 5. Delaware County S-CAP Organizational Outcomes: Fiscal (Totals 2020–2023: $1,578,775[a]; $528,775)

Year 1 (2020–2021)	Year 2 (2021–2022)	Year 3 (2022–2023)
• (University) immersive learning grant ($6,300—One semester) • Indiana Family & Social Services Administration: College Prevention Grant ($175,000—Two years) • Indiana Family & Social Services Administration: Mental Health 1st Aid Trainings ($600—Two years) • Indiana Family & Social Services Administration: Peer Recovery Coach Trainings ($3,625—Two years) • Total = $185,525	• Indiana Family & Social Services Administration: Harm-Reduction Team Grant ($140,000—Two years)[a] • Indiana Collegiate Action Network: student focus groups ($4,000—One semester) • Indiana Department of Homeland Security: community paramedicine ($10,000—One year)[a] • Total = $150,000[a]; $4,000	• Indiana Family & Social Services Administration: trauma-informed recovery-oriented system of care ($112,000—One year) • Indiana Family & Social Services Administration: College Prevention Grant II ($100,000—Two years) • Indiana Family & Social Services Administration: Community Catalyst Grant—Crisis Center ($900,000[a], $28,000) • Indiana Family & Social Services Administration: State Consultation ($38,000—One year) • Indiana Collegiate Action Network: student breathalyzers ($6,000—One semester) • Communities Talk: Annual Symposium ($750—One year) • (University): Addictions Research Center ($52,500—Three years) • (University): immersive learning grant ($2,000—One semester) • Total = $900,000[a]; $339,250

[a] Signifies involvement of external fiscal agent.

University Service Outcomes

Although the primary focus of the coalition is to enhance external community capacities, the S-CAP has taken an active role in the implementation of substance misuse prevention and harm-reduction strategies through the utilization of immersive learning courses. In the inaugural year, S-CAP faculty developed an immersive learning course within the Ball State Department of Social Work that was funded by the Indiana Family and Social Services Administration. This course, called the Student Association for Addressing Addiction, or S3, continues to be offered each semester and is dedicated to implementing substance misuse environmental interventions on campus and in the local community.

Over the course of 3 years, students in the S3 have distributed 13,500 public health postcards that provide information on making safe and responsible choices regarding drug and alcohol use, promote free self-assessments and in-person substance misuse screenings available at the University Health Center, and identify the locations of community naloxone boxes where students and community members can access naloxone anonymously and at no cost. S3 students have also produced five public health social marketing prevention pilot videos, participated in community cleanup days, collected over seven tons of garbage from local neighborhoods, and facilitated campus drug take-back days that have amassed 60 gallons of unused prescription medication. The S3 initiative has also trained 13 students to become Certified Prevention Specialist-Associates, with Indiana's first-ever recipient among them. Additionally, an incentive-driven "Nicotine Quit Day" held by the S3 in September 2022 motivated 26 students to quit nicotine products, with abstinence confirmed via survey at a one-month follow-up. The S3 further reached an additional 7,275 students with public health and substance misuse prevention social marketing materials through the implementation of a "mocktail lounge" that was coordinated with campus "late night events" on Saturday evenings. This lounge featured nonalcoholic mixed drinks served in a mock bar setting that included strategically placed prevention messages and campus public health resource information. Finally, one of the most impactful interventions implemented by the S3 since its inception has been the distribution of 300 condoms, 450 fentanyl test strips, and 800 doses of naloxone to Ball State students. Although data on the effectiveness of the condoms or test strips is not available, a dose of naloxone was utilized by an S3 student to save the life of a community member experiencing an overdose in a parking lot adjacent to the campus (Minnick et al., 2023). Specific details on the outcomes of S-CAP campus and community activities can be found in Table 6.

Table 6. Delaware County S-CAP Direct Service Outcomes: University

Year 1 (2020–2021)	Year 2 (2021–2022)	Year 3 (2022–2023)
• Prevention postcard campaign (4,500 postcards distributed) • Social marketing videos (5 prevention videos) • Community cleanup day (1 ton of trash collected) • Campus drug take-back day (40 gallons of unused medication collected, including containers)	• Prevention postcard campaign (4,500 postcards distributed) • Seven mocktail events attended by 1,362 students • Five students become Certified Prevention Specialist-Associates • Two peer recovery support group meetings • 11 prevention posters • Eight journey maps • Six campus substance misuse focus groups	• Prevention postcard campaign (4,500 postcards distributed) • Community cleanup day (6.13 tons of trash collected) • Campus drug take-back day (20 gallons of unused medication collected, including containers) • 16 mocktail events attended by 5,913 students • Eight students become Certified Prevention Specialist-Associates • Campus naloxone distribution (800 doses, one confirmed use) • Campus fentanyl test strip distribution (450 test strips) • Campus condom distribution (300 condoms) • Social media influencer account (104 followers, 20 posts) • Nicotine Quit Day (26 confirmed cases of quitting at 1-month follow-up)

Research Outcomes

According to the CADCA approach to facilitating community coalitions, highlighting the accomplishments of coalitions and commemorating their triumphs are important processes (CADCA, 2018). In this sense, establishing connections between S-CAP initiatives and the professional expectations for tenure-track faculty is also crucial for the sustainability of the S-CAP. To address this objective, the Delaware County S-CAP has consistently emphasized research procedures through the collection of data in annual process and outputs evaluations and through the dissemination of project findings in academic journals and conference presentations. To date, S-CAP faculty and students have been featured in several newspaper, magazine, and radio stories, and have contributed to nine oral conference presentations. S-CAP members have also engaged in various invited lectures and panel discussions, received awards for student mentoring and course development, and published on S-CAP activities in peer-reviewed journals. These achievements, in conjunction with funding awards related to S-CAP projects, provide associated faculty with strong research portfolios that promote success at the highest levels of academia. Moreover, the emphasis on research outcomes serves to drive S-CAP evaluation processes and ensures that the coalition is routinely assessing its internal processes and external impacts. Specific details regarding S-CAP intellectual outcomes are provided in Table 7.

Limitations

The findings discussed in this article are subject to several limitations. First, although the S-CAP has achieved significant success in its initial 3 years, further evaluation is necessary to ascertain whether the S-CAP model should be recognized as an evidence-based practice for enhancing substance misuse service capacities on campus and in local communities. The utilization of process and output measures must continue to build upon prior research and reinforce the proposed sustainability of the S-CAP model. Outcome measures tracking metrics such as county overdose rates or treatment admissions should also be identified and integrated into evaluations to assess whether the S-CAP can quantifiably impact community outcomes rather than serving solely to enhance local service capacities. Another factor that must be considered is that the S-CAP examined in this article operates in a county with environmental factors conducive to establishing an S-CAP. The presence of high substance misuse rates, limited resource availability, and a manageable population size with access to local leaders undoubtedly influenced the level of success

Table 7. Delaware County S-CAP Organizational Outcomes: Intellectual

Year 1 (2020–2021)	Year 2 (2021–2022)	Year 3 (2022–2023)
• Four oral conference presentations[a] • (University) award for immersive learning • One newspaper article (feature)[a] • One magazine article (feature)[a] • Two podcasts (feature)	• Two conference presentations[a] • Consulted on development of Indiana Certified Prevention Specialist-Associate credential • Invited presentation: Indiana Family & Social Services Administration • Panelist: Meridian Speaker Series • One radio interview (feature)[a,b] • Two blogs (feature)[a,b] • One newspaper article (feature)	• One journal publication • One invited article • Two articles under review[a] • Three conference presentations[a] • Three student conference presentations[a] • Consulted on development of Indiana Department of Health Implementation & Technical Assistance publication • Panhellenic Association Award for Student Development • One newspaper article (feature)[a] • One university prevention credentialing course • Invited presentation: Indiana Family & Social Services Administration[a]

[a] Included student participant or author.
[b] Included community member participant or author.

attained by the S-CAP. Further research on the efficacy and applicability of S-CAPs in less favorable environments is imperative to establish them as evidence-based practices. Finally, the expertise, motivation, and dedication of the community members, students, and faculty involved in S-CAP activities were pivotal in producing t,he outcomes and outputs observed over the past 3 years. The impact of their dedication and commitment cannot be overstated and may not be replicable in other colleges and communities.

Discussion

Overall, the outcomes associated with the S-CAP's activities and progress suggest that this framework should be considered a promising practice for addressing addiction issues in local communities. The ability of the S-CAP to generate substantial amounts of funding while also implementing life-saving environmental interventions provides compelling evidence in support of the model. However, despite the notable results demonstrated by the S-CAP since its inception in 2020, the leadership team has encountered significant challenges related to the community-engaged work. The finding by Drahota et al. (2016) that "time commitment" is a significant limiting factor for many CAPs was confirmed in the leadership team's process evaluations. Each leadership team member reported dedicating a significant amount of time beyond traditional service and/or research expectations that resulted in sacrifices of personal time or other projects. Additionally, one leadership team member was required to transition their full research agenda to S-CAP activities in order to sufficiently address coalition goals.

Another challenge faced by the S-CAP was accurately assessing community readiness for the introduction of certain interventions. Determining whether a community, or even specific community gatekeepers, would react favorably to proposed interventions such as a syringe service program or the distribution of naloxone proved exceptionally difficult. This challenge impeded the creation of solutions to existing problems, as some options for addressing identified problems were not able to be fully explored. Finally, the most significant challenge encountered by the S-CAP was a lack of capacity to pursue all potential projects. Despite being comprised of over 500 members who contributed in various ways, only members of the leadership team could be expected to attend all meetings and to facilitate funding opportunities associated with the S-CAP. Consequently, there were limits on the number of funded projects the S-CAP could undertake. However, the S-CAP aims to address this deficit in the near future through the expansion of the leadership team and the utilization of the newly created research center (SURCI). Despite operating for less than a year, SURCI has already established itself as an influential entity regarding state-level initiatives. The center director currently serves as the vice-chair for the Indiana State Epidemiological Outcomes Workgroup, and SURCI members have been contracted or received requests to consult on various projects. These connections, combined with relationships fostered directly through S-CAP activities, have enabled the coalition to gain recognition among influential figures in Indiana's Department of Mental Health and Addiction, enhanced the S-CAP's organizational capacities and reputation, and translated local coalition experiences into state-level policy recommendations.

Conclusion

The results produced by the S-CAP demonstrate that this intervention warrants future research with new populations, other public health problems, and in different environments and social contexts. The ability of the S-CAP to circumnavigate common limitations associated with traditional CAPs such as lack of role clarity or distal outcomes, and its capacity to bypass the need for continuous funding associated with traditional CADCA coalitions, make it an exceptionally versatile and unique method for enacting community change. The capacity of the S-CAP to increase community and campus service capacities, offer valuable educational opportunities to students and community members, and to fulfill university research requirements for tenured or tenure-track faculty further positions it as a novel and easily sustainable model for community interventions. Given these findings, it is evident that researchers should continue exploring the capabilities of the S-CAP model and its potential for positively impacting campuses and local communities. These evaluations must also include the strategic incorporation of outcome measures such as overdose fatalities and campus binge drinking rates to begin documenting the impact of the coalition on community and campus outcomes in addition to tracking coalition outputs and process data.

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Community Engagement and Dental Care: Early Insights From an Oman–Zanzibar Initiative

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Abstract

Oman Dental College partnered with local health agencies in Zanzibar, Tanzania, for an international dental outreach project. This early-stage engagement aims to address Zanzibar's pressing dental health needs and to provide a transformative educational experience for student volunteers. Informed by the intertwined histories of Oman and Zanzibar, the project delivered preventive and curative dental services, emphasizing the need for sustained oral hygiene education. Initial impact measurements revealed the high prevalence of dental decay, highlighting a need for preventive measures. Volunteers reported educational gains and a deeper understanding of Oman–Zanzibar heritage. Challenges such as electricity, internet connectivity, and sterilization conditions were identified for future improvement. This project provides valuable lessons for community engagement, especially the importance of preparation, adaptability, and long-term community involvement for sustained impact. Future directions include training local health care workers and developing community-based oral hygiene programs.

Keywords: dental outreach, dental health, health promotion, preventive dentistry

Oral health is indispensable to overall health and well-being. However, it remains an overlooked domain, especially in low- to middle-income countries where limited resources, lack of awareness, and insufficient dental infrastructure widen the disparity in dental care access. International dental outreach camps, such as the one spearheaded by Oman Dental College (ODC) in Zanzibar, serve as transformative initiatives, bridging these gaps. These camps provide essential dental services to underserved communities and create a fertile learning ground for dental volunteers (Elkind, 2002; Eriksen et al., 2011).

Zanzibar's oral health situation is similar to that of Tanzania as a whole, with a low prevalence of dental care programs, limited availability of free dental care, and a lack of preventive programs (Petersen & Mzee, 1998). Recent World Health Organization (WHO) reports and additional assessments across African regions consistently highlight Tanzania's relatively low incidence of dental caries. Surprisingly, residents in urban areas have a significantly lower risk of developing dental caries than their rural counterparts (Mbawalla et al., 2023). This situation represents a significant shift from 25 years ago, highlighting the current focus of dental care initiatives primarily in urban areas. This trend has inadvertently increased the gap in dental care access for rural areas, resulting in higher levels of untreated dental caries. In particular, the prevalence of dental caries in primary teeth remains alarmingly high (Petersen & Mzee, 1998). The vast majority of these cases are decayed teeth, which outnumber those that are filled or removed, highlighting a significant gap in available dental treatment.

Delving into the essence of this outreach, we find ourselves at the confluence of health care pragmatism and societal well-being, particularly in the context of dental health. This discourse is not merely about cataloging dental health issues and their prevalence among specific demographics; it is an exploration into how such documenta-

tion can serve as a cornerstone for proactive health care strategies. The underpinning here suggests a deep-seated recognition of oral health not just as an individual concern but as a communal attribute, reflecting broader societal health dynamics and disparities.

The foundation of this outreach initiative lies in recognizing that understanding the prevalence and characteristics of dental health issues among rural populations, such as those on the island of Unguja in Zanzibar, is essential for developing successful prevention and treatment strategies. This approach emphasizes a dedication to addressing and controlling health issues with the now-available resources, thus facilitating the development of more nuanced and efficient health interventions later on.

Such an initiative acknowledges that the landscape of health needs and interventions is ever-evolving, necessitating adaptive strategies informed by both past outcomes and current challenges. Therefore, the endeavor to document and analyze dental health issues becomes an exercise in understanding the dynamic relationship between health services and community needs, aiming to address current health challenges and anticipate and mitigate future ones.

Outline

In charting the course of this project, we embark on a journey that commences with a detailed exploration of the critical importance of oral health to holistic well-being, particularly within the context of Zanzibar's unique challenges and the broader landscape of Tanzania's dental health disparities. Next, we delve into the conceptualization, execution, and outcomes of the Oman Dental College's outreach initiative, framing it within the larger discourse on health care pragmatism, societal well-being, and the dynamic interplay of global health interventions. This narrative unfolds through an examination of the methodologies employed, the critical analysis of clinical and volunteer feedback data, and reflections on the tangible impacts observed. Closing in a discussion that reflects on the findings and contemplates the future trajectory of such initiatives, this article endeavors to provide a comprehensive account that bridges the gap between individual health issues and communal well-being. Through this account, we aim to elucidate the complexities and triumphs of addressing oral health disparities in low-resource settings, offering insights into the potential for sustainable health interventions and the indelible impact of hands-on educational experiences in shaping the next generation of dental professionals.

Setting the Context

In this continuum of exploration and action, ODC emerges as the Sultanate of Oman's premier and sole dental institution, committed to exemplary education, community service, and active engagement. Zanzibar, with its deep historical ties to Oman shaped by centuries of trade and shared cultural narratives, offers a compelling setting for this initiative. As mentioned earlier, the region, like many low- to middle-income nations, contends with the challenge of limited dental care access. Recognizing this unmet need, a partnership between ODC and the regional health authorities was envisioned, rooted in their intrinsic connection and shared history. Their goal was twofold: to address Zanzibar's dental care void while offering ODC students a tangible real-world experience. This collaboration aims to mitigate the dental health disparities in Zanzibar and enriches the educational fabric of ODC, resonating with the comprehensive view that oral health plays a pivotal role in the holistic well-being of a community. This article aims to document and share the insights and outcomes of this unique outreach, setting a precedent for future health interventions and educational collaborations.

Project Overview

This dental outreach initiative, conducted over a period of 2 weeks, targeted communities on the island of Unguja in Zanzibar. While aiming to provide immediate dental care, it also aspired to establish a foundation for sustained oral health practices and offer dental students invaluable hands-on experience in diverse field conditions. Experienced faculty members from ODC, with expertise spanning dental caries assessment, dental trauma, and oral surgery, played a pivotal role in guiding the project's execution. The initiative was designed with core functions that revolved around comprehensive dental health assessments, immediate interventions, and patient-centric oral health education. This hands-on approach reflects ODC's commitment to marrying practical dental health care delivery with deep educational underpinnings.

Building on this foundation, ODC underscores a crucial distinction between "voluntourism," a blend of volunteering and tourism, and responsible global health engagement. This academic differentiation, first prominently discussed in the scientific literature by Seymour et al. (2013), illustrates the college's dedication to making genuine global health contributions. By integrating mentored experiences and public health knowledge, ODC prepares its students for global health experiential learning that extends beyond theoretical knowledge to include real-life volunteering and meaningful contributions to global health. This strategic educational philosophy ensures that the college's outreach initiatives focus on providing immediate care while fostering a long-term impact on global health, guided by responsible engagement and a deep commitment to community well-being.

The College benchmarks itself against the world's leading dental schools in both curricular and extracurricular activities. A testament to its excellence, a news piece published on September 26, 2014, in the prestigious *British Dental Journal* featured Professor Finbarr Allen, former dean and professor of restorative dentistry at Cork University Dental School and Hospital. He commended the quality and standard of education at Oman Dental College, stating it matches those of UK dental schools, an impressive feat for a relatively young institution. "I am sure that the College and its graduates will go from strength to strength," he remarked, highlighting the institution's potential for continued excellence and influence in the field of dental education ("Oman Dental College Goes From Strength to Strength," 2014).

This study unfolds a dual-focused analysis. First, it evaluates the clinical impact of the dental outreach camp on Zanzibar's community. Second, it delves into the experiences of the participating volunteers, elucidating the rewards, challenges, and lessons from their journey. By amalgamating these dimensions, this study paves the way for a holistic understanding of international dental outreach camps' potential, challenges, and avenues for refinement.

Materials and Methods

Ethical approval for this outreach activity was duly obtained from ODC and the Ministry of Health in Zanzibar, ensuring that the project adhered to the necessary ethical guidelines and protocols. This outreach activity was also conducted in strict adherence to the principles of the Declaration of Helsinki and other relevant ethical guidelines for research involving human subjects, ensuring respect for the rights and welfare of the individuals and communities involved. All participants in the outreach camp, including minors who provided assent alongside parental consent, offered informed consent, with confidentiality and privacy upheld throughout the process.

This study implemented a dual-focused methodology, encompassing the collection and analysis of clinical data, and providing the required treatment to patients at the international dental outreach camp, alongside capturing feedback data from the volunteers who participated.

The outreach initiative examined and treated 112 pupils from Bwejuu Charity School, aged 3 to 17 years. Eligibility for participation was extended to all pupils present at the dental camps and willing to engage in the process. To guarantee the consistency and precision of diagnostic and treatment approaches, the team underwent a thorough calibration process prior to the outreach. Dental examinations were conducted using portable dental chairs with integrated lighting, facilitated by comprehensive dental examination kits containing all essential instruments. To uphold the highest hygiene and patient safety standards, all instruments were sterilized through autoclaving prior to use on each patient. Moreover, rigorous cross-infection control measures were in place, with team members wearing new disposable gloves, gowns, and masks for each patient examination, ensuring meticulous prevention of cross-contamination.

The clinical data was collected from each patient who attended the outreach camp. These records included patient demographics (age, gender), tooth numbers, procedure codes, and treatment provided. Special attention was paid to instances of tooth decay (caries) as a key indicator of oral health in the population served by the outreach camp. This data was compiled and analyzed to provide a quantitative understanding of the dental health situation in the community and the extent of the services provided during the dental outreach camp. Statistical analysis was performed using GraphPad Prism, Version 9.

Similarly, feedback was diligently collected from a total of 19 volunteers, comprising students, new graduates, and faculty (Appendix). This process was guided by a validated model for local empowerment and sustainable development for dental outreach programs, as described by Arefi et al. (2020). This qualitative data serves as a window into participants' experiences, insights, and recommendations, offering a blueprint for future outreach endeavors.

The feedback data was obtained via a comprehensive two-part questionnaire given to the volunteers after the dental outreach camp. The first part of the questionnaire consisted of 30 Likert scale questions with responses ranging from *strongly agree* (5) to *strongly disagree* (1), covering areas such as preparation, organization, support, facilities, and satisfaction with the outreach camp. The second part of the survey had eight open-ended questions aimed at gathering more nuanced insights into the volunteers' experiences, challenges, highlights, and suggestions for improvements.

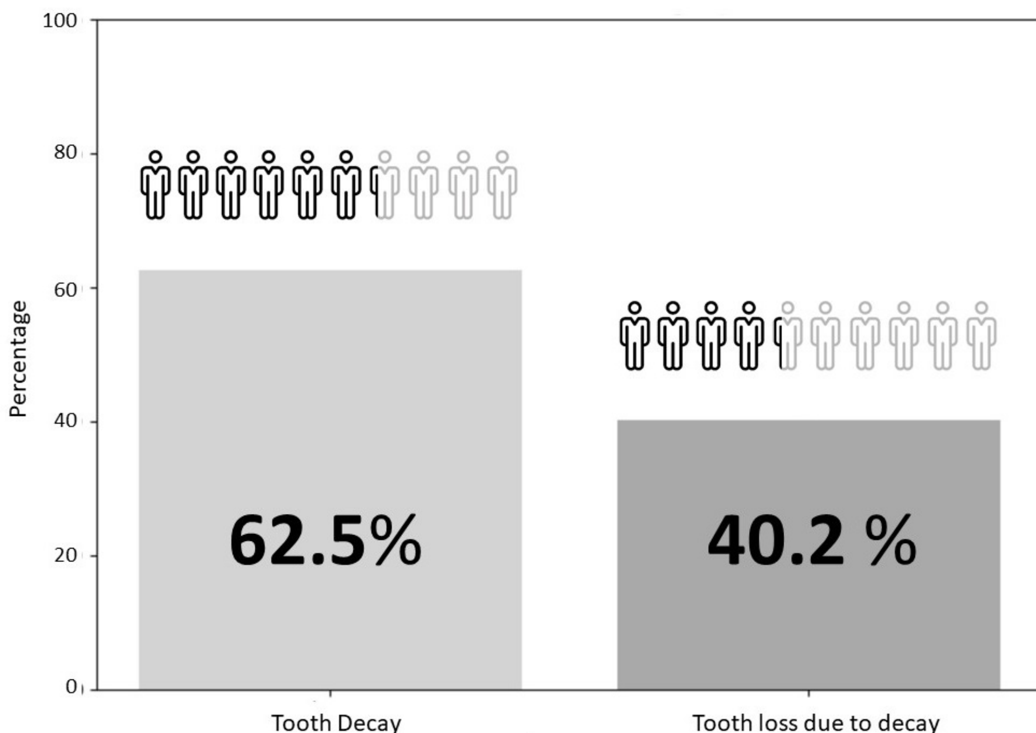
Both the clinical and feedback data were analyzed separately to produce a quantitative and qualitative understanding of the dental outreach camp. The clinical data provided an objective measure of the dental health in the community and the services provided, and the feedback data gave a subjective view of the volunteers' experiences, highlighting areas of success and opportunities for improvement. Together, these data sources provided a comprehensive view of the dental outreach camp's impact on the community and the volunteers.

Results

Patient Data Analysis

In analyzing the clinical data of 112 pupils, a slight male predominance was observed, with a male-to-female patient ratio of 1.2:1. Dental health assessment revealed that 62.5% of the pupils showed signs of tooth decay, either current or past, underscoring the prevalence of this condition within the community. Furthermore, 40.2% had undergone tooth extraction due to decay, highlighting the prevalence of advanced dental issues (Figure 1).

Figure 1. Bar Chart Illustrating the Prevalence of Tooth Decay and Tooth Extractions Due to Decay Among Pupils in Zanzibar



Regarding dental trauma, a significant majority, 90.2%, exhibited no signs of trauma. Enamel fractures were the second most common finding, affecting 8.0%, with only a single case (0.9%) of treated injury recorded. Soft tissue lesion examination revealed that the most frequent locations were the inner cheek (10.7%) and the tongue (5.4%).

When assessing the urgency of dental interventions among the pupils, it was found that over half (50.9%) required immediate treatment. Examples of such prompt treatments included the filling of cavities to address tooth decay, emergency root canal treatments to save severely infected teeth, and the extraction of teeth that were beyond salvageable condition due to severe decay or trauma. Additionally, some cases necessitated immediate therapeutic interventions to manage acute infections or abscesses, aimed at relieving pain and preventing further spread of infection.

A third of the patients (33.9%) needed preventive or routine treatments, which could involve professional dental cleanings to remove plaque and tartar buildup, the application of fluoride treatments to strengthen tooth enamel and prevent decay, and the placement of dental sealants on the molars of younger patients to protect against cavities. Only a smaller segment of the population (15.2%) was assessed as not requiring urgent dental interventions. For these patients, regular monitoring and follow-up visits were recommended to maintain their oral health status and prevent the development of future dental issues.

A chi-square test was performed to explore the potential association between gender and dental issues, revealing no statistically significant difference ($p > 0.05$), indicating that dental health problems were uniformly distributed across genders.

Volunteers Data Analysis

The majority of the participants in the study were students, comprising 42.11% of the sample, and graduates, comprising 36.84%. Clinical supervisors comprised a smaller part of the participant pool at 15.79%, with administrators comprising the remaining 5.26%. In terms of the duration of the camp, over half of the participants thought that the camp should last for longer than 2 weeks, with most of the responses indicating 3–4 weeks at least (52.63%), although a significant number felt that 2 weeks was adequate (42.11%).

The majority of participants found the online platform utilized for recording patient information to be user-friendly, with 73.68% affirming this view. However, within this group, 68.42% believed that a paper-based system might have been more reliable, given the region's suboptimal internet connectivity.

When asked about their outreach experience at the camp, most participants rated their outreach involvement as either very good (42.11%) or excellent (31.58%). Those who were neutral about their outreach experience (26.31%, with none expressing dissatisfaction) predominantly cited reasons related to not being able to fully meet the needs or achieve the main objectives of the camp, particularly given the camp's short time frame. A significant portion of the participants (63.16%) had not previously participated in an international dental outreach camp, whereas a smaller group (31.58%) had previous experience in similar endeavors elsewhere. Regarding the adequacy of the number of pupils treated, opinions were divided: 52.63% felt the number was sufficient, but 47.37% believed more pupils should have been seen, given the evident need for intervention and/or treatment.

A substantial majority of participants (over 75%) expressed satisfaction or high satisfaction with various facets of the experience, such as cross-infection measures, dental equipment and materials, pretravel arrangements, accommodations, meal quality, and touristic excursions. However, nearly half of the participants expressed significant dissatisfaction with the internet connectivity and the reliability of the electrical supply.

In terms of cultural exchange, a significant 78.95% of participants deemed it very meaningful. The depth of local community interaction was well-received, with 89.47% of participants reporting satisfaction or high satisfaction. Likewise, the perceived impact of these interactions was positively rated, with 84.21% expressing satisfaction or high satisfaction. Despite these positive responses, some participants highlighted a desire for more immersive cultural exchanges, suggesting that deeper engagement with the local community could further enrich the outreach experience.

Regarding language barriers, 36.84% of participants identified lack of familiarity with Kiswahili as a hindrance, yet all within this group were eager to learn the language for future camps to provide better service and foster more meaningful cultural connections.

An overwhelming 94.74% of participants showed interest in future involvement in similar events. Additionally, the camp met or exceeded the expectations of 84.21% of participants.

Discussion

Clinical Data

The review of clinical data from the dental outreach camp provides critical insights into the oral health challenges within the served community, particularly highlighting the pervasive issue of tooth decay. This observation aligns with the broader global trend, particularly in low- and middle-income countries, where access to preventive dental care is limited, and dental diseases, especially tooth decay, are prevalent (Kandelman et al., 2012; Northridge et al., 2020; Watt et al., 2019; Yee & Sheiham, 2002).

The number of teeth lost due to decay is another significant finding. Tooth loss due to decay could suggest a lack of early dental intervention in this community, leading to advanced dental issues that necessitate the surgical removal of affected teeth. The ratio of fillings to tooth removals could serve as an indicator of the state of oral health in the community, reflecting both the prevalence of dental disease and the availability (or lack thereof) of early, preventive dental care.

Encouragingly, the considerable proportion of preventive treatments performed, such as fluoride applications, fissure sealants, and scaling, underscores the camp's pivotal role in not merely addressing existing dental issues but also in laying the groundwork for preventing future occurrences. Such a preventive strategy is particularly vital in settings where routine dental care access is sporadic or nonexistent, emphasizing the camp's immediate and prophylactic impact on community oral health (Breda et al., 2019).

The critical need highlighted by the extensive treatments provided during the camp underscores the imperative for sustained, accessible dental care services within the community. The substantial short-term impact of the camp, in terms of both remedial treatment and preventive care, illustrates the potential of outreach initiatives in bridging the immediate care gap. However, it also accentuates the need for systemic changes to establish regular, locally accessible dental services that can offer continuous care and effectively prevent dental diseases (Peres et al., 2019).

Although the outreach camp has demonstrated its capacity to provide immediate care and preventive interventions, it is imperative to recognize these efforts as complementary to the broader necessity for accessible, ongoing dental health care infrastructure. The outreach's contributions toward alleviating immediate dental health issues and setting a preventive care precedent are commendable. Still, they highlight the critical need for establishing permanent and accessible dental health care solutions that can address the root causes of dental health disparities and ensure the sustainability of oral health improvements in underserved communities.

Feedback Data

In this international dental outreach camp, the overarching goal was to provide dental services to underserved communities while providing an enriching and rewarding experience for volunteers. The study analyzed the qualitative responses of the volunteers to evaluate their experiences, assess the impact on their learning and professional development, and identify potential areas of improvement for future outreach camps.

Volunteers' Experience

The overwhelming sentiment among volunteers was that the outreach camp offered a deeply rewarding and meaningful experience. Volunteers were particularly touched by their interactions with the local population, especially children, fostering a sense of camaraderie akin to a family within the team. The opportunity to either assist with or directly perform dental procedures in an outreach context was immensely valued, highlighting the camp's dual benefits: providing critical services to communities in need while offering invaluable hands-on learning experiences for volunteers. This symbiosis of service and education underscores the significant, multifaceted impact of outreach camps, aligning with insights from Bingham et al. (2022) on the enrichment of professional and personal growth through service-learning.

A segment of participants who expressed neutrality toward their outreach experience, without venturing into dissatisfaction, navigated a philosophical introspection about the ephemeral nature of such outreach efforts. Despite recognizing the commendable efforts of the team, they contemplated the camp's limited capacity for delving into the nuanced, entrenched issues of dental health within the community. This acknowledgment of the disparity between the provision of immediate care and the need for systemic transformations to secure enduring improvements in oral health serves as a poignant meditation on the constraints of short-term interventions in remedying long-standing health inequities.

Interestingly, the decision of one participant to abstain from future camps stemmed from an overwhelmingly positive shift, catalyzing a reorientation toward pursuing more sustained solutions in global health. This unique outcome, rather than reflecting a shortfall of the camp, highlights its profound capacity to inspire and reshape career trajectories, emphasizing the program's transformative potential on participants' professional paths and philosophical outlooks.

Challenges encountered during the camp primarily revolved around environmental and logistical hurdles, including electricity and Wi-Fi connectivity issues and sterilization processes. Specific to the dental aspect, volunteers faced a learning curve with portable autoclaves, leading to some operational confusion. Additional logistical concerns involved scheduling discrepancies and health or safety incidents among team members, alongside some noted friction in team dynamics. Proactively addressing these operational and interpersonal challenges could substantially enhance the efficacy and enjoyment of future camps, ensuring a smoother, more cohesive outreach experience for all involved.

Learning Outcomes and Changes in Views

Volunteers reported significant learning outcomes, varying from practical skills, including sterilization in an outreach setup, to interpersonal skills like communication with patients and teamwork. The outreach camp appears to have broadened volunteers' understanding of global health inequalities, particularly around basic dental care needs, and deepened their appreciation for teamwork and community service.

Most volunteers expressed a keen interest in participating again in a similar camp in Zanzibar, and should there be a need for change, they are open to considering other locations, such as remote areas in Nepal, Bhutan, and Kenya. This readiness to engage in outreach camps across various locations underscores the volunteers' dedication to delivering dental care to underserved communities worldwide.

Suggestions for Improvement

Volunteers proposed a number of improvements for future outreach camps, such as providing more dental chairs, organizing the clinical settings into zones, seeking ethical approval for surveys in advance, and ensuring thorough checks of equipment before transport. More nuanced suggestions included offering a language course in Kiswahili before the outreach camp and creating videos and printed materials for oral hygiene education. Several responses also emphasized the importance of improved team organization and communication, underscoring the importance of a well-structured, cooperative environment for the success of such outreach camps.

The open-ended responses provide invaluable insights into the personal and professional experiences of the volunteers and offer clear direction for improvement of future outreach camps. Through addressing these logistical and environmental challenges, the impact of these outreach camps can be maximized for both the volunteers and the communities they intend to serve. By establishing a strong foundation of equal partnership between the volunteers and the local community, we set the stage for sustained, long-term engagement. This approach enables community dialogue to identify key issues and allows us to deploy volunteer expertise in crafting innovative, efficient solutions. This collaborative model maximizes the impact of the outreach camps, benefiting both the communities served and the volunteers involved (Garber et al., 2010).

The feedback data and the clinical data together provide a comprehensive understanding of the dental outreach camp's impacts. The high levels of satisfaction and positive experiences reported by the volunteers suggest that the outreach camp was successful in its execution and organization. However, the challenges and suggestions highlighted by the volunteers, such as

the need for improved communication and planning, present opportunities for improving future outreach camps. These improvements could potentially lead to more efficient delivery of services, enhancing the overall impact of the outreach camp.

Reflections

In reflecting on the feedback from volunteers, a tapestry of insights on sustainability, impact, and personal growth emerges, woven with their firsthand experiences. One volunteer reflected on the complexity and fulfillment of their role, stating, “The mix of cultural immersion and the hands-on provision of essential dental care was both challenging and rewarding.” This comment underscores the enriching experience of blending service with deep cultural engagement, highlighting the dual nature of challenges and rewards in such missions.

Another volunteer captured the essence of the outreach’s immediate impact, remarking, “Despite the limited resources, the gratitude of the locals and seeing the tangible difference we made were the primary rewards of this trip.” Another added, “Seeing the happiness in the eyes of children was the best experience.” These reflections emphasize the profound joy and satisfaction derived from making a visible difference in the lives of those served, even in the face of resource constraints.

Addressing the practical aspects of cross-cultural interaction, a volunteer suggested, “I believe that some basic language training before the outreach camp would help us communicate more effectively.” This insight points to the importance of overcoming language barriers to enhance the effectiveness of volunteer work and deepen connections with the community.

Furthermore, acknowledging the value of well-rounded experiences, a participant shared, “The touristic excursions were refreshing breaks that allowed us to explore and appreciate the local culture.” This observation highlights how integrating leisure and cultural exploration can enrich the volunteer experience, providing balance and deeper cultural understanding.

These reflections from volunteers illuminate the multifaceted impact of the outreach program, from the immediate joy of serving communities and witnessing tangible results to the broader implications of cultural exchange and sustainable health improvements. Each quote, with its unique perspective, contributes to a fuller understanding of the outreach’s significance, in terms not only of dental care provided but also of fostering personal growth, cultural appreciation, and a vision for sustained community health advancements.

Next Steps and Utilization of Early Findings

The future trajectory of this dental outreach project warrants a detailed exploration to ensure its sustainability and the effective utilization of its early findings. The immediate success and insights gained from the camp provide a foundational understanding of the community’s dental health needs, laying the groundwork for strategic planning and enhancement of future outreach efforts.

The project’s future involves a strategic approach to leveraging the initial findings to refine and expand the outreach model. The high incidence of tooth decay and the necessity for extractions highlighted by the camp’s data underscore the critical need for early intervention and education. Consequently, future iterations of the project will prioritize educational programs on oral hygiene and preventive care, aiming to reduce the prevalence of tooth decay and other preventable dental conditions. Additionally, the feedback on the limitations encountered, such as the barrier posed by language and the need for deeper cultural exchanges, suggests a pivot toward more community-centric approaches, incorporating local health workers and translating materials into Kiswahili to enhance communication and engagement.

Sustainability of the Project

For the project to be sustainable, it must transcend episodic interventions to foster a long-term impact on the community’s oral health landscape. Doing so entails establishing partnerships with local health care providers and organizations to ensure continuity of care and the integration of oral health services into existing health care frameworks. The project’s sustainability will also rely on continuous funding and resource allocation, which could be achieved through a combination of government support, private donations, and international aid. Furthermore, training local health care workers in dental care and preventive practices will empower the community to take

ownership of its oral health, making the project's impacts more enduring.

Future Improvements Based on Early Findings

The learnings from this outreach are instrumental in shaping its future direction. The project team plans to implement a more robust data collection and analysis framework to continuously monitor and evaluate the effectiveness of its interventions. This iterative process will enable real-time adjustments and enhancements, ensuring that the outreach remains responsive to the community's evolving needs. Moreover, exploring innovative solutions to overcome infrastructural challenges, such as unreliable internet and electricity, will be crucial. Such solutions might include the deployment of mobile dental units equipped with solar power and offline digital record-keeping systems to ensure uninterrupted care delivery and data management.

The project's future hinges on its ability to evolve based on the lessons learned from its initial phase, with a clear emphasis on sustainability, community engagement, and the integration of preventive measures. By addressing these aspects, the project aims to mitigate current oral health challenges and lay a solid foundation for a healthier future for the community it serves.

In reflecting upon the limitations of our study, it is important to mention that the outreach was conducted exclusively in schools, which, while providing a substantial sample, may not entirely represent the broader pediatric population of Zanzibar, including those children not enrolled in or not regularly attending school. Additionally, our study is limited by its cross-sectional design, which captures the dental health status of participants at a single point in time, making it challenging to establish causality or track changes in individual health over time. The reliance on self-reported data for some aspects of the study could also introduce bias. Furthermore, the scope of our dental assessments, although comprehensive, did not include some specialized tests that might offer deeper insights into certain conditions. We also acknowledge that the cultural and logistical constraints inherent in conducting outreach in a low-resource setting may have influenced both our approach to data collection and the range of interventions we could offer. Finally, although we endeavored to maintain high standards of diagnostic consistency, variations in clinical judgment among the diverse team of dental professionals and students could contribute to diagnostic variability.

Conclusions

At the core of the international dental outreach in Zanzibar, was the ambition to mitigate immediate dental health challenges while also offering a profound transformative experience for volunteers. Set against the rich historical backdrop of Oman and Zanzibar, this venture stood out for its depth of collaboration.

The project's commitment to evolving based on initial learnings, with an emphasis on sustainability, community engagement, and preventive care, sets a trajectory toward not just addressing immediate dental health issues but establishing a foundation for long-term community health betterment. This project sexemplifies the potential of international outreach to forge sustainable solutions, reflecting a comprehensive approach that transcends temporary interventions.

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This outreach initiative was principally financed by Oman Dental College (ODC), to whom we extend our heartfelt gratitude. Additionally, support for the project was augmented by generous donations of supplies and equipment from various dental suppliers, including specialized portable dental equipment from BPR Swiss. These contributions covered the entirety of operational costs such as transport, accommodation, meals, and essential FDA- and CE-approved dental supplies for the volunteers participating in the project. During our oral health education and oral health instruction sessions, 1,000 toothbrushes and units of toothpaste were distributed to students, further amplifying the impact of the camp. It is important to note, however, that the content presented in this report is the sole responsibility of the authors and does not necessarily reflect the official stance of the funding organizations.

Declaration of Interest

The authors declare no conflicts of interest related to this study. No member of the research team has any financial, consultant, institutional, or other relationships that might lead to bias or a conflict of interest.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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All three authors contributed to the conception and design, analysis, and interpretation of data, drafting and revising the article, and gave final approval for the version to be submitted.

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Appendix. Volunteers' Experience Questionnaire

Demographic Information

- Role (Student, Graduate, Clinical Supervisor)
- Previous participation in international dental outreach camps

Camp Duration

- Satisfaction with the camp's duration
- Preferred duration for future camps

Technology and Record Keeping

- User-friendliness of the online platform for patient information
- Preference for record-keeping method

Outreach Experience Rating

- Overall rating of outreach involvement
- Reasons for neutral or negative experiences, if any

Impact and Adequacy

- Perceived adequacy of the number of pupils treated
- Satisfaction with the scope and impact of dental services provided

Facilities and Logistics

- Satisfaction with cross-infection measures, dental equipment, and materials
- Satisfaction with pre-travel arrangements, accommodations, meal quality, and touristic excursions
- Challenges faced regarding internet connectivity and electrical supply

Cultural Exchange and Community Interaction

- Perception of cultural exchange meaningfulness
- Satisfaction with depth and impact of local community interaction

Language and Communication

- Impact of language barriers on service delivery
- Interest in language learning for future outreach activities

Future Participation and Expectations

- Interest in participating in future outreach events
- Whether the camp met or exceeded expectations

Suggestions for Improvement

- Suggestions for logistical improvements
- Recommendations for enhancing cultural exchanges and team communication

Each section would have a mix of multiple-choice questions, Likert scale ratings, and open-ended questions.

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Relational Principles for Enacting Social Justice Values in Educational Partnerships

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Abstract

Drawing upon a long-term partnership between a university and a Title I middle school, we outline relational principles that guided our justice-oriented approach to collaborative research. We conceptualize relational principles as intentional strategies for equitable relationship cultivation and infrastructure development, grounded in the values and sociocultural backgrounds that each stakeholder brings to the partnership. Five principles emerged from our reflections, represented by the following adages: "don't assume neutrality," "recognize the means create the ends," "move at the speed of trust," "broaden ideas of benefit," and "strive for responsiveness, not perfection." Each principle is presented and described using examples that illustrate how these principles can be enacted within educational research partnerships. We conclude with a discussion of potential implications for fostering coherency among community-engaged research perspectives, with relational principles acting as a potential bridge between value-driven community-based participatory research (CBPR) approaches and practice-oriented tools from the research-practice partnership (RPP) field.

Keywords: community-university partnerships, social justice, community based participatory research, research and practice projects, community engaged research

Between 2018 and 2022, a collaborative group of researchers, administrators, and teachers built a partnership with a local middle school that sought to intentionally center social justice and equitably distribute decision-making power. Each participating stakeholder implicitly or explicitly brought their own values and beliefs to the work, which manifested in discussions during the early days of the partnership that had lasting effects on our relationships with each other. Our interpersonal practices fundamentally shaped the characteristics and processes of the collaboration, as well as its long-term research directions and outcomes. Through reflective analysis on our joint work, we generated five relational principles that connected our values to partnership processes, combining insights from both community-based participatory research (CBPR) and research-practice partnership (RPP) fields to advance social justice approaches to community partnerships.

Jennifer (first author) and Stephanie (third author) built a partnership with a Title I middle school in California (approximately 1,300 students in Grades 6–8, 69% Latine, 66% low-income, 31% English language learners) as part of a larger community-based initiative created by our university to better serve schools in the surrounding geographic area. In summer 2018, a philanthropic donation provided financial support for the partnership by funding a graduate student researcher until summer 2022. The research foci of this RPP emerged organically from the priorities of the school, including topics such as perceptions of school climate (Renick & Reich, 2020) and experiences of online learning during the COVID-19 pandemic (Renick & Reich, 2023b). Participating school stakeholders included administrators, counselors, students, and

teachers, with occasional involvement from district staff, based on the particular needs of the specific project.

When facilitating our partnership, we drew from CBPR approaches that seek to embody a "commitment to critical consciousness, emancipation, and social justice" (Wallerstein & Duran, 2008, p. 28), aligned with Freirean traditions. CBPR literature tends to focus on social justice values (e.g., power sharing, resource building) grounded in core beliefs of human dignity and empowerment (Fawcett, 1991; Israel et al., 2005), but the ways in which these values shape educational partnerships are underexplored. Through reflecting on how we worked to build an RPP guided by social justice values and congruent with CBPR approaches, we established a set of justice-oriented *relational principles*, showcasing how we cultivated relationships and established equitable processes within our work together.

Consistent with recent work to advance *community-based professional norms* (Campano et al., 2015) and *everyday ethics* (Banks et al., 2013), we aim to provide a pragmatic model of how community-engaged researchers can connect values with partnership strategies by merging CBPR and RPP veins of scholarship. The values prioritized by CBPR scholars (e.g., Fawcett, 1991; Israel et al., 2005) can be abstract and challenging to enact into practice. Although these values of authentic collaboration and prioritization of community needs are present across much CBPR literature (Fawcett, 1991; Israel et al., 2005), they cannot necessarily be applied consistently, due to the highly contextual nature of engaged research (Silka & Renault-Caragianes, 2007). Broad values of diversity and inclusion will manifest differently depending on the community with which one collaborates, as well as the academic partners involved (Tryon & Madden, 2019). In contrast, RPP scholars tend to foreground the systematic use of tools, and design instruments to evaluate and guide the development of partnerships (Henrick et al., 2017). For example, conjecture mapping can be instrumental in shaping educational improvement efforts in partnerships (Sandoval, 2014), but it does not inherently invoke social justice values. Grounded in a rich tradition of tool-based partnership strategies (e.g., Coburn & Stein, 2010), RPP scholars have increasingly turned their attention toward value-based applications of tools for educational equity (Farrell et al., 2023).

In our partnership, we drew from both CBPR and RPP scholarship to guide our approach, as both fields' respective emphases on social justice values and tools foster a productive cross-pollination useful for advancing knowledge and practice of educational partnerships. With relationships centered as the common core of both CBPR and RPP models, our relational principles functioned as a bridge between theoretical values and practical tools. In this sense, relational principles may be broadly salient across CBPR and RPP initiatives where interpersonal interactions are central, especially at the initial stages of relationship development.

A wealth of research has validated the importance of early work in the beginning of a partnership (Christopher et al., 2008; Penuel & Gallagher, 2017; Silka & Renault-Caragianes, 2007). For instance, initial actions and discussions are important for developing trust between stakeholders and setting routines that provide a foundation for continued collaboration (Brown & Allen, 2021; Tseng et al., 2017). Similarly, we found that early work in our partnership was essential for establishing equitable relational processes and mutual commitment to social justice values. The development of an equitable partnership required reflection and action before even our first interactions with our partners. Our experiences highlight the necessity of researchers' work up front to cultivate awareness of assumptions, epistemologies, and values, as well as how these may affect collaborative interactions and partnership formation. The early work of our partnership had lasting effects and provided unique opportunities to enact relational principles.

Through reflecting on our partnership and reviewing documents created throughout its duration (meeting notes and agendas, facilitator reflection memos, etc.), we generated five justice-oriented relational principles for researchers that were crucial to the formation of our partnership, represented by the following adages: "don't assume neutrality," "recognize the means create the ends," "move at the speed of trust," "broaden ideas of benefit," and "strive for responsiveness, not perfection." The process of creating these principles, as well as identifying key examples of them in practice, was performed through iterative rounds of examining our

partnership materials, drafting and sharing initial ideas, and discussing emerging themes. This process was completed over 29 different work sessions and informed by approaches of ethical reflective practice (Fernández, 2018). Below, we describe each principle, situating them within previous research and providing illustrations of their application to our partnership. These principles are discussed in roughly chronological order, corresponding to particular phases in the partnership during which they were most central, though all remained relevant throughout the partnership. We conclude by further connecting our five relational principles with existing literature and discussing broader implications for community-engaged research.

Relational Principles for Social Justice Research Partnerships

Don't Assume Neutrality

Positivist approaches typically consider research to be a neutral activity in which researchers are framed as objective outsiders whose identities do not influence the scientific process (Campano et al., 2015; Tuck & Guishard, 2013; Wallerstein & Duran, 2008). Rather than framing our partnership as a blank slate, our social justice values required an epistemological perspective that attended to the histories of harm that many communities have suffered at the hands of "neutral" researchers (Chávez et al., 2008; Denner et al., 2019; Minkler, 2004; Tuck, 2009). As an alternative to assuming neutrality and adopting its accompanying ahistorical objectivity, we sought to recognize and reckon with power dynamics inherent in community work. Prior to initiating our partnership, we anticipated that we might hold power (or could be perceived as holding power) conferred by our education level and professional status (Riemer et al., 2020), in addition to other features of our identity (e.g., ethnicity and gender) that may contribute to our privileged status within systems of oppression (Chávez et al., 2008; Denner et al., 2019).

Relational work with our partners began well before our initial meeting through two internal tasks: educating ourselves on the community context and interrogating our own identities. Specifically, we spent time learning about the participating site and its sociohistorical context, rejecting an ahistorical approach. First, we reviewed the school's website to learn about existing initiatives and conducted general internet searches to identify any newsworthy events concerning the school in recent years. We also accessed government data about the school to familiarize ourselves with student demographics and characteristics of the local area. Among the findings from our background research, we learned that the school was one of few Title I school sites in an otherwise affluent district.

Second, we engaged in reflective work to understand our privilege, contextualize our positionality, and contemplate potential power imbalances related to our role as researchers. This task was oriented toward potential relationships with the specific partners that we sought to cultivate, but the foundation for this intensely personal work was laid over the course of many years earlier in our careers. For example, the first author, a White woman, had spent substantial time involved in grassroots organizations that focus on helping White people develop antiracist identities. She also had received training in ethical community engagement through involvement in both academic and practice-oriented organizations.

In contrast to partnerships built from preexisting relationships, ours was sparked by a philanthropic donation and an introduction to a school with which we had no prior interaction or preexisting relationships. Additionally, this partnership had no predetermined focus or content area as specified by the funder, meaning we could be open to any interests of the school and prioritize their desires. These factors, as well as our preliminary work, informed our behavior and expectations at initial meetings with the school site, helping us to anticipate our potential partners' concerns.

When we initially met with the school's principal, she started the conversation by asking what *we* wanted to do. Because of our prior training and awareness that our role as researchers was not neutral, we were cognizant of the relational power that was implicated in her statement (Riemer et al., 2020). Adopting a neutral, "objective" stance would have ignored the power dynamics present in the interaction. Similarly, in early meetings with school staff, we noticed they used language describing us as "experts," an assignment of status based on our education level. During such moments, we uplifted the expertise of the staff in an

effort to distribute power and position the community members as mutual participants, again rejecting a neutral approach that would divorce such interactions from a broader sociohistorical context. If we had not interrogated our own identities and power as researchers, we might not have been conscious of the nuances present in our conversations and our partnership would have started on an unequal footing (Denner et al., 2019). Through critically reflecting on our privilege and positionality, we approached our new collaborators without assuming that our partnership would be a priority to the school or that the community partner sites would serve our needs.

As the partnership went on, we continued to prioritize not assuming neutrality by developing relational routines and norms that were imbued with the social justice values we had considered prior to initiating the partnership, such as focusing on empowerment rather than evaluation and building community capacity. For instance, when the first author was invited to share survey results at a school staff meeting, she recognized that such meetings are not neutral spaces and her role in that setting was also not neutral, due to her close collaboration with school administration. Administrators typically set the agenda for the faculty meetings, which directly impacted teachers. As a university-based scholar sharing data about the school, the first author could be positioned as an evaluator of teachers' performance, with the power to shift school policies based on her perspectives. Awareness of this power led to intentionally designing the presentation to be very clear in how data were collected and why, as well as potential interpretations and limitations. By keeping close to the data and staying humble, she attended to potential risks and inequities implicated by the power dynamics present in that meeting. More generally, and consistent with critical scholarship on community-engaged research (e.g., Tuck & Guishard, 2013), we recognized that our status as researchers could never be neutral because of the inherent power imbalances in the work, but our set of relational principles could help us proactively navigate these imbalances.

As our partnership expanded and we began to conduct larger research projects, we maintained our nonneutral orientation toward research by intentionally engaging in power sharing and addressing power imbalances through explicit conversations about goals. Our social justice values of prioritizing community interests and needs not only shaped the broader structure and foci of the research, but also the interpersonal interactions and relationships with school partners. For example, a few years into the partnership, we undertook a study that was codeveloped with a core group of school staff, many of whom were administrators who held power on campus. A staff member outside the team contacted the first author with concerns about the accessibility of the research methods being utilized in regard to including families on campus who did not speak English, a concern that was possibly informed by previous negative experiences with researchers and the broader sociohistorical context. The first author's response was informed by her understanding of histories of harm caused by researchers and her interrogation of her privilege as someone who spoke English as her first language. She took the staff member's concern seriously, clarifying with whom the project was intending to collaborate (students, not parents like the staff member initially thought), confirming the team's plan to offer materials in multiple languages, and affirming that her worries were valid. Jennifer concluded her response with an expression of gratitude that the school staff member was willing to come to her with these critiques; through her ongoing work in activist groups focused on antiracism, she recognized the generosity and bravery required to "call out" others for causing harm.

Throughout our partnership, our social justice values highlighted that assumptions of researcher neutrality fail to consider oppressive systems we inherit and the ways in which contextual factors can influence relationships (Tuck & Guishard, 2013). Not assuming neutrality as researchers means making an intentional choice to consistently interrogate the ways in which power manifests within our community-based work, particularly related to our own identities, in contrast to a power-blind approach (Minkler, 2004; Tuck & Guishard, 2013). From framing early conversations to structuring the dissemination of results to responding to staff concerns, we relied on perspectives that were developed during our prework to center the implications of power and historical inequities in relationships with our partners. In our reflective conversations with our community partners, we found that these strategies help to create

more balanced partnership norms and allow them to have more agency in our collaboration. Overall, this approach provided a foundation to employ other relational principles and further cultivate a partnership centered on values of justice and equity.

Recognize the Means Create the Ends

In recent years, many research-practice partnerships have focused on using research to address pressing issues of educational equity (e.g., Penuel, 2017; Potter et al., 2021). Although our partnership similarly aimed to advance equity through our research *outcomes*, we also sought to embed equity in our research *processes* (Denner et al., 2019). Relegating equity to our desired research outcomes or our choice of research topics would not accomplish our goal of supporting the capacity-building of community members; rather, it would risk reproducing inequities within the partnership. Scholars of participatory action research have noted the tendency for researchers to exclude community members from certain aspects of the research process (even in community-based research), such as defining the questions or designing the methods. The exclusion of community members from such tasks can reinforce existing power hierarchies that limit knowledge production to academia, fail to build communities' capacity to conduct their own studies, and limit the utility of research (Stoecker, 2003). Accordingly, we chose to integrate a participatory approach into our RPP and sought to infuse equity into not just *what* we researched but *how* we researched (Denner et al., 2019). Specifically, we fostered relational equity and laid groundwork for justice-oriented research, first by establishing shared values in our partnership relationships, then by developing inclusive and flexible participation norms, and finally by framing relational equity as an outcome itself.

As previously referenced, during our first meeting with the school's principal, she expected us to pursue our own preexisting research agenda rather than seek her direction and guidance on what we should study. Our participatory approach entailed a shift in her expectations toward working with researchers; thus, we first had to collaboratively redefine and clarify what could be accomplished through community-based research. Articulating this difference helped us identify shared values and explore potential differences in beliefs. We intentionally held our first meeting at a coffee shop near the middle school, outside either of our workspaces, to establish equal footing and balance in our meeting context. We spent our first hour together discussing potential alignment between her goals for the school and the opportunities a partnership might offer (Suarez-Balcazar et al., 2015), concluding that we were a compatible match for collaborating on participatory research projects. We agreed to prioritize power sharing and inclusivity with school stakeholders, which facilitated the involvement of other school staff in following conversations. Although we were not aware at the time, this initial interaction established our shared social justice values as the foundation for all other relationships in the partnership, an experience the principal affirmed.

With the help of school administrators and teachers, we sought as much stakeholder engagement as possible in all of our partnership projects, aligned with the participatory ideal that "if community participation is seen on a continuum, then CBPR can be understood as an orientation to research that aims at maximum feasible community participation in all phases of the research" (Buchanan et al., 2007, p. 153). For example, each of our partnership projects began with suggestions from school staff and community members. With researcher support, school staff created data collection tools, which the researchers used to investigate topics that informed practices. In our youth-participatory action research (YPAR) project, students were coresearchers in all tasks, including data analysis and dissemination of results (see Renick & Reich, 2023a for more information). Our research processes prioritized equity through broad inclusion of stakeholders and power sharing in partnership decision-making. Importantly, this process required that we actively limit our own power as researchers to create space for other voices to be heard in knowledge generation tasks.

We found that flexibility was equally as important as inclusivity. Our partnership was designed to allow stakeholders to participate in ways that accommodated their needs and constraints. Administrators and teachers were involved to varying degrees and often opted to participate based on their availability or interest. This flexibility served multiple purposes related to equitable relationship building and collaboration on projects. Importantly, flexibility and fluidity in participation levels

helped minimize impositions on practitioners' time or resources, which enabled the partnership to be responsive to the diverse experiences and circumstances of school community members. Some of our university colleagues commented that our focus on inclusivity and flexibility made our work more time consuming and challenging than other partnership models, but we found our approach essential for fostering equitable environments that could provide a template for other initiatives at the school.

The relational processes we employed in our partnership helped support the capacity building of stakeholders and, accordingly, equitable outcomes in our partnership extended beyond just research goals—our collective commitment to justice-oriented "means" created expanded opportunities for equitable "ends." For instance, when working on our YPAR project, students reported that they enjoyed getting to share their data with teachers and felt like their voices were heard on campus. Prioritizing both equitable processes and outcomes is consistent with tiered layers of benefits conceptualized in the YPAR field, capable of not only impacting youth positively, but also improving entire settings and generating better research (Ozer, 2017). Similarly, we heard from school stakeholders over the years how our partnership supported a range of benefits to students and teachers through processes guided by equity and inclusion. Examples include improving students' sense of belonging and increasing teachers' capacity for knowledge production, which in turn supported research that informed school practices. Our research aims, grounded in broader social justice values, required that our relational processes prioritize equity, which supported benefits for students and teachers. Over the course of our partnership, we recognized that our intertwined goals of research and impact were dependent on the quality of our relational processes, and consequently, the equitable *means* we utilized were as important as the equitable *ends* we sought to achieve.

Move at the Speed of Trust

In order to build a partnership where school stakeholders felt comfortable engaging in collective research efforts, we found it necessary to "move at the speed of trust" (brown, 2017). This relational principle acknowledges that equity-oriented research entails cultivating trust between researchers and community members, which is often a slow process. We sometimes felt pressure to expedite research in order to meet normative expectations of our academic institution, but we recognized that authentic relationships with our school partners (who were often busy with the demands of working in a school) could not be rushed without compromising our core values. Conducting ethical research grounded in equity and justice required that we create opportunities to cultivate trust while resisting the impulse to advance our projects at a pace that might strain our relationships or erode our commitment to collaborative work.

For example, our partnership was in its second year when the COVID-19 pandemic began. The subsequent lockdown brought dramatic shifts to our routines and relationships. We adapted by attending to our partners' circumstances to ensure we were not placing an undue burden on them or overlooking their perspectives. By fall 2020, there had been substantial turnover among staff at the school, and we began the cycle of relationship development with new community members. Rather than allow our agenda to be driven by publishing pressures or research timelines, we moved forward only when there was sufficient trust in our relationships with our collaborators. We also identified immediate needs of the school with which we could assist, such as examining students' experiences with emergency distance learning. Although the pandemic is an extreme case, we sought to be "light on our feet" throughout the entirety of our partnership.

Earlier in our collaboration, we began cultivating trust by clarifying our intentions for collaboration and establishing shared values with the school stakeholders. We followed these conversations with actions that embodied our values and our commitment to equitable partnership work. Rather than simply *say* we weren't at the school to push our own agenda, we needed to *show* our partners with our actions. Consistent with our relational principles described previously, building mutual trust was not a means to accomplishing our research goals, but necessary to authentically position community members as holders of knowledge and power. In this way, our relational process of moving at the speed of trust was focused "not on establishing trust, but on being trustworthy" (Tuck & Guishard, 2013, p. 21).

We primarily demonstrated that we were trustworthy by embedding ourselves

within the school community, which entailed taking the initiative to learn about the school, getting to know the staff, and providing support in tangible ways. For example, any time a staff member invited us to join or observe a school activity, we attended. This practice communicated that we would prioritize their suggestions and participate in tasks that were not essential to our own interests. Similarly, while on campus, we went out of our way to get acquainted with stakeholders (e.g., accompanying teachers on lunch runs or bringing homemade baked goods to meetings as a way to break the ice); they later shared that such gestures helped them feel more comfortable collaborating with us. We also anticipated community members' needs and helped whenever possible, including tasks like stacking chairs after assemblies or taking notes during meetings. Throughout these activities, we expressed our sincere interest in being members of the community and did not advertise or push our research projects, showing our partners that our commitment to equitable partnership values was authentic. We continued these routines for the duration of our partnership, even after school stakeholders demonstrated that they trusted us (e.g., indicated by referring to us as colleagues, excitedly connecting us with a staff member they thought we could assist, or readily giving us more sensitive tasks to undertake on projects). For each stakeholder, trust came at different points in time. We had no preset timeline for advancing the partnership, as our work was dependent on whether our partners found us to be trustworthy enough to deepen our relationships and collaboration.

In addition to building trust with our initial staff partners, embedding ourselves at the school also helped expand our network of school relationships. The partnership began with meeting the principal, then involved the school's Positive Behavior Interventions and Support (PBIS) team, and finally expanded to include teachers, assistant principals, counselors, district staff, and students. The equitable values we brought to school activities helped establish a practice of power-sharing in both our partnership and the school at large (Wallerstein et al., 2019). For example, the activities that we joined were led by school stakeholders, and in participating we deferred to their decision-making and expertise. After regularly participating in activities with the PBIS team, we became visibly in community with a larger group of staff, attending (and eventually presenting) at full staff meetings. Our partnership was supported not only by deepening trust with our core group of collaborators, but also by broadly developing trust with a more extensive team of staff through our presence at schoolwide events. Once we earned trust with a wide range of school stakeholders, we expanded our core group of staff partners and began our YPAR project, which involved direct interactions with students and district staff. The school stakeholders demonstrated that they considered us to be trustworthy by encouraging our engagement with both students and high-level district officials.

During the first months of our partnership, we dedicated a substantial amount of time to the school. Faculty and administrators noticed this, and they reciprocated by increasing their willingness to dedicate time to the partnership. Rather than a formal agreement or exchange, we sought buy-in from school stakeholders through our development of trusting relationships. By initially focusing solely on building relationships, we felt we could build a better foundation for future research, especially when it required school stakeholders to cede some time or resources. Firmer and more trusting relationships would support a greater belief that the research was worthwhile and would benefit the school. Consistent with our efforts to center the needs of our partners, we sought to limit impositions on staff members' time, which further developed trust. Throughout our partnership, we ensured that all our requests for time or resources were proportionate to the amount of trust present. We conceptualized this as a *relationship bank*, aligned with Gottman & Gottman's (2008) theorization of a relationship bank account (Gottman & Gottman, 2008). Every time we offered direct assistance to the school, spent time on site, or deepened our personal connections with stakeholders, we were putting a "deposit" into our relationship bank—building their trust in us and the partnership as a whole. Any time we asked for their assistance, time, or resources for a project, we were making a "withdrawal" from the relationship bank.

This model helped ground our work in mutual respect and kept us from advancing our projects faster than the trust-building of our partnership could sustain. Specifically, we could not "overdraft" from the relationship bank; if we did so, our research would be moving too quickly and inconsistent with

our commitment to equitable processes. Though this banking metaphor can imply that relationships are transactional, that is not how we sought to apply this framework. As described earlier, we sought to develop trusting relationships centered on values of care and respect. Rather than utilizing our relationship bank as a way to tally and track interpersonal dynamics, we instead adopted it as a way to apply our potentially abstract value of moving at the speed of trust tangibly to our actions. Academic norms tend to prioritize researchers' goals over those of the community (Tuck & Guishard, 2013), meaning the "status quo" of research can often be burdensome to communities. This framework helped us to be consciously aware of and reflective on the burden we might be causing to our community partners, by mentally monitoring our "bank account" and ensuring we were always considering impact on the community when pursuing research projects.

The process of building trust, growing our network of relationships, and increasing buy-in from stakeholders required gradual scaling of our projects. For example, the first notable research task we undertook was a schoolwide survey, which occurred about three months into our partnership. Because we had only a small balance in our relationship bank at the time, we kept the survey under 10 minutes to avoid imposing on stakeholders' time. We illustrated that their investment of time was worthwhile by quickly processing and sharing the results in a format that was useful and informative, less than 6 months after data were collected. This process resulted in another "deposit" into our relationship bank. Only after we shared results with the school staff did we begin turning the study into a publication. The survey was one of many research tasks that we conducted over the course of our partnership, and as our relationships continued to build over several years, we were able to make bigger "withdrawals." In the third year of our partnership, we undertook a YPAR project that required substantial time, resources, and increased interaction between the research team and students. This was possible only due to the foundation of trusting relationships and the hefty relationship balance that we had accumulated. The YPAR project was successful and the school stakeholders were pleased with its outcomes, which further sustained our partnership. Ultimately, trusting relationships provided the foundation for the expansion of our collaborative research, but required patience and long-term commitment from us. Spending time at the start of the partnership to learn about the school and build relationships with a wide variety of community members was crucial for the long-term health of the partnership.

We found that "moving at the speed of trust" was necessary to actualize our values of inclusivity and power-sharing in our partnership (Wallerstein et al., 2019). If we had instead prioritized academic productivity over authentically demonstrating trustworthiness, our partnership would not have been aligned with our social justice values that required attending to stakeholders first. Trust entailed foregrounding the needs and desires of our partners throughout the duration of our partnership, above other pressures to publish or produce more research, in order to ensure we were building equitable and reciprocal relationships. We are cognizant that this principle may be challenging to apply in less hospitable academic circumstances than the ones in which we were placed. For instance, grant-funded projects with highly specific deliverables and short timelines may lead to pressure that undermines the capacity to build relational trust (see Renick & Turchi, 2024 for more information). This contrast highlights the importance of those with institutional power (e.g., funders, promotion and tenure committees) supporting partnership-based research (Ozer et al., 2023). Fortunately, in this collaboration, we were able to pursue research tasks commensurate with the concurrent depth of our relationships and solely when our partnership members found that a particular research project would be mutually beneficial.

Broaden Ideas of Benefit

Generally, research-practice partnerships seek to offer mutual benefits to both researchers and practitioners (Coburn & Penuel, 2016), but the particular conceptualization of benefits enacted depends on the values that underlie each collaboration. The social justice values that motivated our partnership led us to broadly conceptualize the benefits we received as researchers. We centered the needs and goals of our school partners throughout our research processes, consistent with social justice values and community-based research approaches that provided the foundation of our work together (Campano et al., 2015). We pursued ideas for new projects that were surfaced by

our partners—not by us—to ensure that all research was relevant and valuable to the school stakeholders.

For example, early in our partnership, the principal asked if we would support the school's PBIS team by conducting analyses of data that the team had previously collected. The analyses would inform the school's future PBIS initiatives, but the data were too limited to be useful for an academic study. Although the project did not have the potential to produce peer-reviewed publications, which are valued within academic norms, we felt it was important to take on this task, not only because it helped the school, but because our social justice framework shaped our perceptions of benefits that we would receive from it. The project afforded us the opportunity to learn about PBIS practices at the site, and as a result, we gained valuable insight that we would not have otherwise obtained. Our experience is aligned with CBPR literature asserting that community members have expertise that researchers often lack, and further, such expertise should be acknowledged in collaborative research (Wallerstein & Duran, 2008). In addition to these learning benefits, our PBIS project also facilitated the development of relationships early in the formation of the partnership.

The studies we took on became more formal and involved as we established trusting relationships and robust routines in our partnership. After we completed several smaller projects, we began our first major research initiative at the school site: a campuswide school climate study. During conversations with school partners early in the codevelopment of the study, we explicitly communicated our desire to publish the results and explained that a publication would benefit our academic careers. At this point in our collaboration, we had developed strong relationships with school administrators and teachers, who trusted that we would not leave after completing our project ("parachute research"; see Heymann et al., 2016). Although we undertook the climate study with the intention to conduct publishable research, the purpose of the work was not only to advance knowledge, but also to be useful to the community involved in producing the knowledge. Before we focused on our manuscript, we presented the results to school stakeholders and created infographics in English and Spanish that the school could disseminate, then shifted to sharing findings with the broader academic community through a peer-reviewed journal, a process for which community members expressed appreciation.

As we moved toward more substantial research projects within our partnership, we sought to allocate our time congruent with our social justice values. Specifically, we prioritized benefits to school practitioners, and the benefits that practitioners received from projects were generally proportional to the amount of time invested. For example, our initial PBIS project did not require a substantial investment of time from us or practitioners and was intended to provide more benefit to our school partners. In contrast, the school climate study involved analyzing rich qualitative data and was very time-intensive for the research team, but both we and the practitioners benefited substantially from the project. Across the two studies, we and the practitioners benefited in different ways, and both parties were aware of (and acknowledged) their respective benefits. This dynamic balance of investments and benefits was maintained through transparent conversations about needs, desires, and tradeoffs. It took significant time for our partnership to develop a mutual understanding of benefits, but due to each stakeholder's commitment to long-term collaboration, the partnership was able to endure unexpected events that otherwise might have disrupted the balance. As researchers, we always remembered that the primary functions of the school would take precedence over research projects, and we had to approach this work with humility, understanding that we were effectively guests in someone else's home.

During the third year of our partnership, the principal with whom we originally collaborated retired and a new principal was hired. At this stage, our partnership had substantial organizational momentum and was resilient to change. We built relationships with many staff members at the school, and through centering social justice values of reciprocity in our content, process, and goals, we sought to retain a balance of partnership benefits. However, the change in school leadership presented an opportunity to revisit our practices to cultivate trust, as outlined in the previous sections, while also building upon our partnership history and progress thus far. Changes in school staff are not uncommon in RPPs (Farrell et al., 2019), and for partnerships focused on social

justice, these changes can be an opportunity to review the routines and values embedded in relationships. In our partnership, the new principal brought fresh perspectives to our research and offered an opportunity to build a relationship with her and explore new projects. For instance, she was interested in analyzing students' grades to learn about academic disparities, an area we had not explored. Conducting this research with her and sharing findings that were relevant to her interests allowed us to foster trust and demonstrate the value of the collaboration to this new team member. Onboarding the principal into this partnership when it was already in motion required the integration of all five of our relational principles. By attending to her needs and interests, we began to build her trust in us and the partnership, which allowed existing research to continue and set a foundation for new projects.

By maintaining a broad perspective of the benefits that we could gain from partnership projects, we enhanced our capacity to conduct equitable and impactful research. Our work was driven by an imperative to put the needs of practitioners before those of researchers; ensuring that the school community would benefit was a precondition to conducting research, and having consistent, open dialogues allowed us to regularly assess whether our work was, or was not, serving the school. However, even when centering our community partners, it was still possible that we might make mistakes and inadvertently cause harm. This reality was crucial to embrace as our partnership continued to grow.

Strive for Responsiveness, Not Perfection

Amid the changes and challenges that occur in the everyday practices of partnership work, even with the best of intentions and principles to guide our decisions, we found that it was unreasonable to assume that we could avoid all mistakes and that harm would never occur (Denner et al., 2019). Power is complex and dynamic (Gaventa, 2019; Riemer et al., 2020), and our approaches to promoting equity in one specific setting at a particular moment might be ineffective in another (Tryon & Madden, 2019). Accordingly, we sought to employ Prilleltensky's (2003) *psychopolitical validity*, which both includes "the incorporation of knowledge on oppression into all research and action" (p. 199) and "demands changes toward liberation at personal, interpersonal, and structural domains" (p. 200). Rather than relying on our relational principles as a checklist to prevent harm, we found that the principles of psychopolitical validity helped us (1) minimize harm, by creating a partnership that centered social justice and equity; (2) be more responsive to feedback when we unintentionally caused harm, by encouraging prework and personal reflection to understand systems of oppression; (3) build relationships with partners wherein they felt empowered and supported to say if harm occurred, rather than feeling silenced, letting resentment build, and having more harm occur; and (4) design partnerships to ensure that our relationships were strong enough to withstand some degree of harm, if it did transpire.

For example, when conducting the first round of our YPAR project, we developed a recruitment plan with a team of school stakeholders to ensure that information would be shared with a wide range of students. The plan included outreach to students participating in classes focused on learning English, but no teachers of these classes were included in designing the recruitment plan. When information about the project was given to teachers of English language classes, a staff member shared that they felt our recruitment plan would be ineffective at reaching the parents of their students (as described in the Don't Assume Neutrality section). This omission was a clear oversight on the part of the research team; our partnership group was not as inclusive as it should have been, which had caused psychological and relational harm to some staff. We failed to include their expertise in a project that sought to include their students and implicitly expected them to support the effort (by passing along project information) without being a part of conversations about the particular partnership initiative.

In that moment, it was important for us, as researchers, to pause and reflect on the mistakes we made, rather than pushing the project forward. The first author retraced all the decisions that led to the situation, taking notes and reflective memos on her mistakes in this process, in order to ensure it would not happen again. She engaged in conversations with aggrieved staff members, listening to their criticisms and apologizing sincerely, as well as integrating their feedback into the recruitment strategy. Lastly, she also reached out to other members of the partnership team about this incident,

to foster transparency and openness about the mistakes that occurred, and share why our approach needed to be adapted before the project continued. The interaction highlighted the complexity of power's various levels, spaces, and forms (Gaventa, 2019), not only from personal identities and systems of oppression, but also from the hierarchies that exist in schools.

Because we had established deep relationships with our partners and made many investments in our relationship bank (Gottman & Gottman, 2008), our partnership was able to withstand this error and our principles helped us to responsively repair harm. Rather than admonishing ourselves for our imperfections, we reflected on how they provided valuable lessons about attending to equity in all processes. More broadly, we likened responsiveness to a muscle that required consistent practice and attention to strengthen over time. To this end, throughout the duration of our partnership, the first author collected all of the lessons she learned from efforts that didn't go as planned into a running document that she could regularly reference and reflect upon.

Focusing on responsiveness—attending to the realities of our context and developing consistent practices for addressing changing needs and integrating lessons learned—was an important orientation for centering equity in our partnership. Striving for perfection in partnerships can erase the messiness inherent in community-engaged work, especially in spaces with complex power dynamics. Educational contexts include diverse individuals with varied needs, which necessitates a continuous process of reflection in order to build equitable relationships. Perfection suggests an end point to this work, rather than ongoing evaluation and adaptation. Adopting a position of humility and reflection, especially in regard to nuanced power dynamics, can provide an antidote, and our school partners shared that they were grateful for our humble approach. Further, perfectionism can be a barrier to equitable partnerships, excusing researchers from trying to improve relationships if they feel unable to do so *perfectly*, rather than engaging in the complex work of trying to collaborate with communities.

Our emphasis on responsiveness rather than perfection included both sides of the partnership—the researchers' and the practitioners'. When we entered our partnership site, we acknowledged that school practitioners might have their own challenges and issues regarding equity (Wallerstein & Duran, 2008). Our partnership approach was not completely deferent to our school partners and did not assume their perfection on issues of social justice or ignore the power they held in certain settings (Gaventa, 2019). Rather, we focused on building relationships that prioritized equity, which in turn laid a foundation for us to name concerns about inequities and act as critical friends when needed. Challenging conversations were more likely to be productive and well-received because of the rapport we had developed through successful projects, service to the school, and meaningful personal connections. For example, the YPAR project we undertook did not develop in a straightforward manner. From the beginning of our partnership, school staff consistently expressed a desire for greater student voice on campus, but after a couple of years, no action had been taken toward this goal. After significant relationship building and accumulating a healthy balance in our relationship bank, we gently brought up our observation and offered a possible solution that we could execute. Our suggestion was positively received and led to a new project that brought students' input to decision-making. We did not critique our partners for being imperfect; instead, we were responsive to their current contextual reality, which they said they appreciated.

We also did our best to be mindful of existing power dynamics at the school in order to prevent reproduction of inequities. For instance, when we worked with the school's academic counselors to analyze their data, we qualified and framed our research work to avoid devaluing their work or suggesting that the administration raise expectations for school staff. Specifically, we advocated for the counselors, clarified to the administration that such data analysis was not a responsibility of staff in their position, and circumvented the addition of more responsibilities for staff. We aimed to avoid negative effects on stakeholders' prospects for employment or promotion; we were aware that the free labor we contributed to the school could shift budgets, make some staff positions redundant, or result in the school's reliance on a temporary partnership, which we accounted for whenever we made decisions about the tasks we engaged in at the school. Consistent with justice-oriented partnership practices (e.g., Denner et al., 2019), we explicitly framed our roles and

responsibilities at the outset of the partnership, which helped to facilitate equitable outcomes in the long run. Our partnership impacted the structures and hierarchies of the school, but our attention to potential risks helped to reduce unforeseen consequences. By being deeply and consistently embedded in the school community, we felt prepared to endure mistakes and navigate politics of interpersonal relationships. In sum, creating and utilizing relational principles derived from social justice values guided us away from idealizing perfection and toward prioritizing responsiveness to potential harm and partnership challenges.

Conclusion

Using examples from our partnership experiences, we illustrated five relational principles that helped us build equitable, productive, and meaningful relationships with school stakeholders. Our work responds to recent calls for advancing pragmatic and socially conscious approaches to working with communities to which researchers do not initially belong (e.g., Campano et al., 2015). We conceptualized relational principles as imperatives for equitable relationships in our partnership (which necessitate infrastructure to support equitable interactions) that emerged at the intersection of our particular social justice values, critical epistemology, and partnership approach. In this sense, our relational principles could be considered an "axiological innovation" (Bang et al., 2016) that may have utility for both CBPR and RPP fields.

Despite overlap between scholarship on CBPR and RPPs (and their shared goals of partnership and mutuality), the respective fields may benefit from greater coherence. Potentially complementing CBPR's focus on values, RPP literature often centers tools (e.g., tools for improvement, Bryk et al., 2015; codesign facilitation, Fishman et al., 2013; and assessing partnership quality, Henrick et al., 2017), in addition to extensive attention to routines through which collaboration occurs (Coburn & Penuel, 2016). Merging applied tools with theoretical values to develop systematic approaches for cultivating relationships with community members may yield innovations that advance both literatures. In our partnership, a singular focus on either values or tools would have led to different decisions about relationships with our partners and, ultimately, diverging outcomes. For example, Principle 5 ("strive for responsiveness, not perfection") helped us connect our values of prioritizing community needs with practices of reflection and adaptation. If we focused only on the values, we might have been ineffective at translating them into action, whereas a focus only on the practices of reflection and adaptation might have divorced the activity from the ethical imperative behind it.

Our effort to conceptualize and enact relational principles was partially motivated by a perceived need for a value-driven strategy to guide our relationship decisions and tool implementation. Social justice values typically invoked in literature on CBPR (e.g., Israel et al., 1998) include core beliefs of human dignity and democratized knowledge (Strand & College, 2003), as well as power sharing, strength and resource building, and equity in all aspects of the partnership's research activities (Israel et al., 2005). Although such values have been operationalized into ethical principles for participation, colearning, and cooperation (Minkler, 2004), much work remains to develop frameworks that pragmatically connect values to practices with community members. In our partnership, we found that a framework of relational principles was useful (and at some points necessary) for actualizing our values interpersonally. Establishing a theoretical and empirical foundation for principles that center relationships in partnerships offers a potent direction for research. Future work could formalize relational principles as a theoretical bridge between existing scholarship on CBPR and RPPs.

Taken together, our relational principles represent a loose progression that highlights the significance of intentional reflexive work early in the partnership formation process (Christopher et al., 2008; Penuel & Gallagher, 2017). We found that each of the principles was particularly salient at different points in our partnership. Our preparatory work prior to the start of our partnership was guided by the first principle ("don't assume neutrality"), which provided a foundation for our social justice goals and routines. Next, we committed ourselves to "recognize the means create the ends" and "move at the speed of trust," which facilitated the establishment of equitable norms early in the partnership. After we began designing research projects with our partners, we embraced our obliga-

tion to "broaden ideas of benefit" to ensure that our work was continuously meeting our partners' needs. Lastly, as our partnership matured, we aimed to "strive for responsiveness, not perfection" in order to sustain reflexive practices and equitable outcomes. Overall, consideration of relational principles and their potential implications prior to engaging in a partnership may be a valuable form of prework that could help researchers ground themselves in their social justice values, while also offering utility throughout partnership work.

Our relational principles were also relevant when our partnership ended after 4 years, due in part to Jennifer graduating and moving out of state, as well as the cessation of philanthropic funding. Although some strong routines and relationships had been established over this first cycle of the partnership, there had not been stability in involvement of certain school stakeholders, due to significant administrative turnover. This lack of consistency in involvement meant that a continuation of the partnership with a new research team would have required returning to the preliminary stages of relationship building to establish new norms. This evaluation of the context of the partnership highlights the sometimes cyclical nature of relational work and the need to view such work as ongoing, rather than stable and static.

A nuanced examination of our partnership surfaces the dynamic nature of such collaborations rather than a linear evolution. To some degree, all of our relational principles were relevant at any point in our partnership. We practiced an iterative consideration of the relational principles depending on the changing sociocultural and contextual features of our partnership. Our relational principles were mutually reinforcing and complementary to each other. For example, "don't assume neutrality" provided bounds for "strive for responsiveness, not perfection." If we did not consider our power and privilege relative to the community's sociohistorical context, or if we did not consider the potential harm of research activities, then our "responsiveness" might not have been conducive to social justice. Our principles were conceptually and pragmatically linked because they were a product of our underlying ideology aimed at promoting the enactment of social justice values in our partnership practices (Fawcett, 1991). Although our relational principles were nested within our particular style of CBPR and approach to RPPs, we expect that our conceptualization may be applicable to educational partnerships more broadly, as interpersonal relationships form the basis for all community-engaged work.

Our relational principles allowed us to structure a collaboration that built stakeholder capacity, fostered an environment of community empowerment, created a rich learning experience for graduate students, produced valuable scholarship, and improved educational outcomes at a local school. Further, we found that the relational principles helped us adopt practices informed by the school community, navigate the complexities of the social environment, and maintain an awareness of the complex web of relationships between people, cultures, and histories in which our partnership was situated. Building from work on ethical and professional norms in educational research (Campano et al., 2015) and everyday ethics (Banks et al., 2013), we utilized the concept of relational principles to generate guidelines for cultivating justice-oriented research partnerships in educational contexts that are both value-driven and amenable to systemization. This work is ongoing, and we will continue to refine our partnership approach, revisiting and revising our relational principles as necessary in future endeavors. We aim to be nimble enough to adapt to changes and humble enough to understand the need for constant reevaluation of our assertions. Though this work can be challenging and time-consuming, the years that we have invested in our partnership have shown us that the outcomes are well worth the effort. Ultimately, intentional focus on relationships with community members is essential to attend to the complex experiential and contextual factors necessary to support equity and justice.

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Lessons Learned: Researchers' Experiences Conducting Community-Engaged Research During the COVID-19 Pandemic

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Abstract

During the COVID-19 pandemic, conventional research methods for engaging communities, such as in-person focus groups, were impeded by pandemic-related public health measures, including physical distancing and self-isolation mandates. Researchers were forced to adapt their plans and align with measures to protect themselves and their community partners. To learn about their experiences conducting community-engaged research amid the pandemic, we hosted a roundtable with 10 researchers in British Columbia, Canada. We explored their successes, challenges, and ethical considerations to identify lessons learned. From the roundtable, we found that community-engaged researchers faced several barriers to conducting research in partnership with community, including challenges in building sustainable relationships. However, the pandemic required researchers to find innovative ways to engage with community partners, enhance the reach of their partnership, and center the lived and living experiences of priority populations. We conclude with recommendations to support community-engaged research in future health crises.

Keywords: community-engaged research, COVID-19, roundtable discussion, community collaboration, relationship building

The term "community-engaged research" refers to the active and meaningful involvement of communities affected by a problem of interest throughout the entire research process (Brett et al., 2014). This approach centers on authentic relationship building with communities and equitable engagement (Barkin et al., 2013; Mahoney et al., 2021). In practice, the degree of engagement can be viewed along a continuum, aligning with the nature of the research and community members' interest and capacity to engage as partners (Key et al., 2019).

Although the term "community" can be defined as a group of people with common views, interests, or experiences, communities are heterogeneous and incredibly diverse (Barkin et al., 2013). The wide scope of partners involved in community-engaged research can present challenges, particularly as research team members attempt to capture their full range of experiences. These challenges are further complicated by public health emergencies, like the COVID-19 pandemic, in which communities are often bound by remote connections. In fact, the pandemic caused many community-engaged research partnerships to cease (Carson et al., 2020), placing community health projects in a state of vulnerability.

Background

Principles of community-engaged research include community benefit, a commitment to collaboration, and shared ownership and decision-making by all members of the research team, including community partners

(Clinical and Translational Science Awards Consortium, 2011). Methods undertaken in community-engaged research are wide-ranging and are informed by the needs of the community (Mahoney et al., 2021). Community perspectives can enhance the relevance of research and ultimately the impactfulness of its findings (Edwards et al., 2020). Over the past 25 years, there has been an increase in community-engaged research in various health and social science disciplines, given its inherent focus on reducing inequities (Duran et al., 2019). On a global scale, community–academic partnerships, primarily through community-engaged research projects, have garnered widespread attention (Janke et al., 2022; Key et al., 2019). Higher education institutions increasingly recognize the importance of building partnerships with communities (McNall et al., 2009). Such partnerships are often supported by community-engaged research institutes located within postsecondary institutions, aimed at fostering community involvement in research, providing funding, and mobilizing findings. The proliferation of these institutes can aid community–university partnerships in handling disparate systems and processes for conducting research and identifying shared priorities with community organizations (Suarez-Balcazar et al., 2005).

The capacity to conduct community-engaged research was severely challenged by the COVID-19 pandemic because several public health measures implemented to contain the spread of SARS-CoV-2 were focused on reducing social gatherings and physical proximity. These public health measures included but were not limited to travel restrictions, self-isolation requirements, physical distancing, and in-person service closures (Ayouni et al., 2021). Concurrently, higher education institutions across the world initiated shutdowns, promptly followed by transitions to remote teaching and work (Haeck & Larose, 2022; Purewal et al., 2022). Research scholars, teaching faculty, and students thus had to rapidly accommodate online learning and working platforms (Sahu, 2020).

Although many public health measures were effective in reducing transmission of SARS-CoV-2 at a population level, the rapid implementation and removal of measures had secondary consequences on society, including university research (Polisena et al., 2021). For example, self-isolation requirements due to suspected or actual COVID-19 exposure meant traditional forms of research—such as in-person focus groups or participant observation, which provide rich data on participants' experiences—could not safely take place. Particularly in the first year of the pandemic, researchers' abilities to collect data, recruit participants, and ethically engage with communities were impacted by pandemic-related measures (Morin et al., 2022). Community-engaged researchers were forced to swiftly adapt their methods of research engagement to protect their health and safety, as well as the safety of their community partners.

Academic researchers and community research partners navigated additional ethical considerations in conducting research amid the crisis context imposed by COVID-19. Civil society organizations (CSOs), not-for-profit agencies operating separately from government and business (United Nations, n.d.), are often sought as community partners by academic institutions. Given their positions as service providers and advocates embedded within the communities they serve, CSOs played a crucial role in COVID-19 response efforts, especially for priority populations (i.e., communities at risk of a disproportionate amount of harm; Ontario Agency for Health Protection and Promotion et al., 2015; Suva et al., 2022). Thus, partnering with academic researchers may have had the potential to detract from their frontline support efforts.

The extant literature on community-engaged research highlights methods for fostering engagement in crises. Difficulties encountered in conducting community-engaged research during the pandemic underscore the need to codevelop research plans, maintain transparency, and foster intersectoral collaboration (Du Mont et al., 2022; Edwards et al., 2020). However, researchers' direct perspectives and experiences are largely missing. On July 6, 2023, the Pacific Institute on Pathogens, Pandemics, and Society (PIPPS), based at Simon Fraser University (SFU), convened 10 interdisciplinary researchers for the Community-Engaged Research During the COVID-19 Pandemic Roundtable. This reflective essay summarizes key themes from the discussion, particularly researchers' experiences, challenges, and successes in conducting community-engaged research against the backdrop of the pandemic.

Methods

Community-Engaged Research Roundtable

In July 2023, PIPPS hosted an in-person roundtable discussion with community-engaged researchers affiliated with SFU. The objective of this roundtable was to understand their experiences conducting community-engaged research during the COVID-19 pandemic, including their successes, barriers, and ethical considerations.

Roundtable attendees were invited to participate via email based on their experiences leading community-engaged research projects with CSOs and community members from March 2020 to December 2022. We purposefully invited community-engaged researchers who initiated projects during the pandemic, encouraging them to suggest colleagues or others who might also be interested in attending. Written consent to record the workshop and take notes was obtained from all participants prior to the roundtable. Approval from the SFU Internal Review Board was not required for this roundtable, as we hosted a collaborative discussion with fellow researchers. Participants' contributions are acknowledged as authorship credit in this article.

The discussion was cofacilitated by PIPPS community-engaged researchers (first and second authors of this article). At the outset of the discussion, we asked participants to reflect on prompts related to conducting research during health crises, such as the barriers they encountered, helpful resources and tools, and lessons learned. Participants were prompted to add their preliminary reflections on paper and refer to them throughout the roundtable. Attendees then engaged in a 45-minute in-depth discussion about their experiences conducting community-engaged research amid the COVID-19 pandemic (see Table 1 for discussion prompts). Notetakers were present to capture high-level themes emerging from the conversation.

The roundtable discussion was recorded using Otter AI, a speech-to-text transcription application, which automatically produced a transcript. Members of the project team reviewed the transcript to ensure accuracy. Qualitative analysis software NVivo 12 was used to code the transcript. The research team began by reading through the transcript to identify and assign preliminary codes. Subsequently, we conducted inductive thematic analysis to explore researchers' successes, challenges, and reflections (Braun & Clarke, 2006). Two authors completed an initial open coding process, which was further categorized to explore the codes in depth and identify additional themes. The coding book was compared against notes captured during the discussion. To enhance equitable engagements with community partners for future health crises, particular attention was paid to lessons learned and recommendations raised by attendees. The drafted output was shared with all roundtable participants for review, and participants were offered the opportunity to comment and revise the analyses.

Lessons Learned: Key Findings From the Roundtable Discussion

The roundtable provided researchers with an opportunity to reflect on their experiences conducting community-engaged research during the COVID-19 pandemic, as well as connect to others with shared experiences. Four key themes emerged from the discussion: (1) barriers to conducting community-engaged research during the pandemic, (2) relationship building during the crisis, (3) opportunities emerging from the pandemic,

Table 1. Community-Engaged Research Roundtable Discussion Prompts

1. What were some of the barriers you experienced to conducting community-engaged research during the pandemic? Were there any specific issues related to COVID-19 that made community-engaged research more difficult? How did you attempt to overcome these challenges and barriers?
2. Can you share some of your successes in conducting community-engaged research during the COVID-19 pandemic?
3. Imagine there is another public health crisis and you are conducting community-engaged research; what would you do differently this time? Are there any resources or supports that you would find helpful?
4. How can we conduct more equitable community-engaged research during health crises? Do you have any lessons learned, insights, or recommendations you would like to share?

and (4) lessons learned for conducting community-engaged research in future crises.

Barriers to Conducting Community-Engaged Research During the COVID-19 Pandemic

Conducting Research Remotely

At the outset, attendees called attention to the difficulties of conducting community-engaged research remotely, describing the experience as "[having to] turn everything upside down" (Participant 1); see Table 2 for a list of barriers identified when conducting community-engaged work during COVID-19 and the corresponding strategies suggested to overcome each barrier. Attendees noted disruptions caused by shifting to and "managing multiple forms of online communication" (Participant 3), which made it tough to delineate between their work and their private life. The need to abruptly switch to virtual platforms added a layer of complexity; for instance, one participant recounted that their community-engaged research project was "delayed for more than three months" (Participant 1), as they could not meet with participants in person. Several research studies experienced similar challenges during the pandemic, compelling teams to pivot from in-person data collection to online outreach (Daniel et al., 2022; Rodríguez-Larrad et al., 2021). Researchers also could not rely on networks of community organizations to assist with recruitment. Indeed, given their significant role in the COVID-19 response, community-based organizations had less time, capacity, and resources to support research recruitment (Karasik, 2022).

Facing the Digital Divide

Other attendees described the "performativity of virtual interviews" (Participant 4) and the overreliance on rigid interview scripts that limited interpersonal connection with participants. Roundtable attendees discussed notable differences between in-person and remote interviews. They expressed concerns about guaranteeing participants' safety and privacy, especially when participants lacked a separate, physical space to conduct interviews. Eliciting meaningful responses behind screens and establishing rapport to safely discuss sensitive topics

Table 2. Barriers and Strategies for Conducting Community-Engaged Research During the COVID-19 Pandemic

Barriers	Strategies for overcoming barriers
Unable to conduct in-person recruitment and outreach due to public health measures and protections	Initiated online recruitment campaigns and leveraged social media advertisements to tailor efforts to their intended audience
Trying to reach civil society organizations as research partners, while their resources were stretched thin	Centered projects that emerged from community needs, and aligned research objectives to meet their needs
Creating psychological safety for all members of the research team	Held informal check-ins for members to touch base about mental health and well-being
Changing circumstances and priorities of community members	Remained responsive and flexible to emerging needs
Unanticipated changes to data collection methods arising from the pandemic	Paused, or pivoted, research plans to adapt to new and emerging needs
Limited opportunities for personal connection through virtual interviews	Opted for online platforms that community partners and members were familiar with and comfortable using
Dealing with immense emotional labor involved in working during a global health crisis	Offered space to process feelings, grief, and emotions among the research team through the support of a clinical counselor

was also challenging. Additionally, several people spoke about the barriers to "overcoming the digital divide" (Participant 8), referring to the gap between communities that can and cannot access information and communication technologies (Li, 2022). Attendees noted that this gap was more pronounced among community partners in rural and remote communities with infrastructure constraints, thereby limiting the inclusivity of their projects. Some of the priority populations they engaged with, namely people in rural and northern areas and resource-constrained settings in the Global South (Statistics Canada, 2020), had restricted access to high-speed internet and, in turn, less confidence in using virtual communication tools necessary for research (Freeman et al., 2022).

Challenges With Ethics Applications

Many participants identified challenges concerning ethics applications as institutional review boards attempted to balance the urgency of COVID-19 with the full range of risks and benefits associated with projects (Burgess et al., 2023). A number of roundtable participants were forced to frequently revise their applications to fit the rapidly evolving health crisis context, causing setbacks to their research processes. Others identified challenges with review committees; although formal ethics committees expedited reviews, they did not anticipate the unique considerations and vulnerabilities of engaging communities during a public health crisis. Similarly, postsecondary institutions did not provide guidance or protocols specific to community-engaged research amid the pandemic, meaning the onus for protecting community partners often fell onto the researchers. Many participants also worked with priority populations that have experienced distrust of both the health care system and health research more broadly (Hermesh et al., 2020), circumstances that researchers felt were not appropriately considered by ethics governance boards.

Funding Challenges

In addition to ethical challenges, participants found it difficult to obtain grants to support community-engaged research on topics not directly related to COVID-19. They discussed their "desire to centre community-identified needs" (Participant 5), but could not conduct research or compensate communities due to the prioritization of COVID-19 funding at institutional, provincial, and national levels. Research unrelated to the pandemic slowed down significantly, with potential consequences for projects prioritizing other pressing community health needs (Omary et al., 2021).

Psychologically Unsafe Environments

Throughout the pandemic, researchers felt immense "pressure to perform" (Participant 6). They were expected to continue publishing, teaching, and researching while suppressing personal challenges. The unanticipated shift to remote learning and research caused stress among many academics (Rashid & Yadav, 2020). Participants disclosed the "emotional labour involved in helping students complete research projects, as well as [their] community partners" (Participant 8). They also discussed the emotional toll of conducting COVID-19 research during the pandemic, alluding to difficulties of separating themselves from the crisis. Attendees highlighted a lack of psychological safety, referring to the degree to which people perceive a work environment as supportive of interpersonally risky behaviours like speaking up, asking for help, and raising concerns (Edmondson, 1999). Amid the crisis context, community-engaged researchers and partners "collectively dealt with grief, hardship, and loss" (Participant 3). They struggled to create psychologically safe environments within their research teams, contending with a "lack of transparency" and inadequate protection against "harmful communication from outsiders" (Participant 6). For example, many researchers were on the frontline of COVID-19 communications, as media personnel often relied on their expertise. However, they lacked protection against the spread of misinformation and disinformation and its associated harm, including direct attacks from members of the public. Although researchers prioritized principles of community engagement, including clear communication and transparency, they mentioned this was missing at the institutional level (Han et al., 2021). While recognizing that administrative leadership across higher education institutions worked hard to remain up-to-date with emerging knowledge and guidelines (Papp & Cottrell, 2022), researchers identified a disconnect between guidance and their on-the-ground work with communities.

Relationship Building in Times of Crisis

In crisis contexts, CSOs and researchers

frequently report collaboration challenges (Huang et al., 2022). The COVID-19 pandemic strained the resources required for successful research partnerships (Couillou et al., 2022). Global collaborations and in-field data collection, in particular, were hampered by international travel restrictions and extended stay-at-home orders (Cai et al., 2021). Roundtable attendees discussed several difficulties in building and sustaining relationships amidst the pandemic. One participant noted how their inability to gather in person and find common ground through the practice of sharing food impacted relationship building, as such gatherings also support networking and knowledge sharing (Rose et al., 2022). Additionally, researchers were cognizant of CSOs' frontline efforts to support priority populations and did not want to impede their work through research partnerships. These competing demands, which forced researchers to remain flexible and adjust their timelines to work collaboratively with community partners, occurred when there was an urgent need to support community partners' research projects and document the effects of the pandemic.

The COVID-19 pandemic exacerbated social and health inequities experienced by priority populations, including Indigenous and racialized communities, people with disabilities, and immigrants (Paremoer et al., 2021). For instance, these population groups experienced inequitable access to COVID-19 vaccinations (Whitehead et al., 2022). The pandemic also disproportionately impacted many priority populations involved in equity-based research partnerships (Wieland et al., 2020). Moreover, community research partners faced increased demand for services and support as they transitioned to working remotely, experienced staffing reductions, and had to tailor their programming to address immediate priorities. As a result, CSOs had little bandwidth for community collaborations, making it difficult to build relationships with the communities that may have required the most support.

Similarly, many participants experienced challenges maintaining partnerships. As a result of the economic fallout caused by the pandemic, millions of people lost their jobs (Gulyas & Pytka, 2020). Several attendees described how the relationships they spent years investing in were strained as community partners from CSOs were laid off. The economic challenges faced by many CSOs also made it more difficult to find the "right research partners" (Participant 2), namely those who were interested in research and were able to balance their frontline work with research engagement. Researchers' long-term relationships with CSOs immersed within the communities they serve were further constrained by the crisis response marked by time-pressed, top-down decisions (Wilson et al., 2021). In the crisis context, participants found it difficult to maintain trustworthy and meaningful relationships with "community navigators" (Participant 6), who facilitate connections with community organizations and members. Attendees nonetheless reiterated that building long-term trust is a crucial component of ethical community-engaged research (Han et al., 2021).

Despite these challenges, attendees highlighted that the pandemic offered an opportunity to "be creative" (Participant 4) in their partnerships. In response to the switch to remote research, they learned how to use technology in novel ways. Researchers leveraged tools that community partners and members were familiar with, like WhatsApp, to conduct interviews. Additionally, they utilized social media advertisements to tailor their recruitment efforts. Some participants explained how they used interactive features on Zoom to implement alternate, low-barrier modes of participation. Previous studies have also exemplified how using such online tools was particularly helpful for participants who were keen to be involved but sought other means of participation (Dolamore, 2021). Many participants noted that they continue to use these tools, even beyond the immediate crisis context, to meet the accessibility needs of team members.

The transition to online modalities, coupled with shifting community needs, also enabled researchers to be reflexive in how they conduct their research. Several were forced to pause, or even stop, their research plans to meet the emerging priorities of their community partners. They discussed the harms of parachute research, an extractive process of taking data from communities without mutual benefit and collaboration (Bockarie et al., 2018). To mitigate these harms, researchers prioritized trust and transparency and attempted to sustain partnerships beyond the pandemic. Researchers' alignment with community needs also underscores the role of community en-

gagement in crisis response. As demonstrated by past infectious disease outbreaks, community-engaged response approaches can increase the uptake of health interventions and strengthen health advocacy efforts (Gilmore et al., 2016, 2020). Thus, community-engaged research partnerships have the potential to identify and respond to priority populations' crisis-related needs. The COVID-19 pandemic illustrated how authentic community-engaged research partnerships can bolster responses to health crises because this approach prioritizes accountability to community members and can help address their unmet needs (Wieland et al., 2020).

Overcoming Barriers: Opportunities That Emerged During the Pandemic

In the roundtable, participants brought forward opportunities and strategies that emerged as a result of the pandemic. They emphasized the wider scope and reach of their projects since virtual communication tools enabled them to connect with geographically isolated communities. Similarly, as more people became familiar with technology, researchers could connect with community partners and research participants across more platforms. They noted that once their research teams and partners were comfortable using online platforms, their engagement processes were considerably more efficient. However, roundtable attendees also acknowledged limitations, as virtual platforms "unintentionally overlooked people who are not online" (Participant 3) or with limited access to the internet.

Participants expressed that the diverse realities of the pandemic allowed for the "professional veneers [to] slip away" (Participant 7) in their partnerships. They experienced a deep sense of vulnerability and humility with community partners as everyone attempted to get through the pandemic. Attendees noted how people began to focus more on developing meaningful connections and the importance of community, reinforcing their commitment to community benefit. During the pandemic, researchers prioritized managing the conflicting emotions and experiences of the research team in favor of their outputs. Their experiences reflect how partnerships formed through community-engaged research can support communities in times of crisis through social networks, enhancing technical capacity, and empowering community decision-making (Wieland et al., 2020). In return, it was hoped that university-community research partnerships benefited communities as they gained access to social and political capital required for emergency response (Ohmer et al., 2022). Through such partnerships, communities can be embedded in broader networks of relationships and strengthen their capacity to undertake their own research projects.

The importance of mutual benefit was an underlying theme of the roundtable. Researchers noted how the pandemic enabled them to truly center the lived experiences of priority populations. Amidst the health crisis, community-engaged researchers were forced to further scrutinize their positionality and privilege, and explore how to redistribute power among the team (Livingston, 2023). Thus, some researchers hired members of communities directly impacted by the pandemic to lead research projects, allowing researchers to reflect on questions concerning whose knowledge is considered valuable and how this knowledge can be honored. By "hiring people with lived experience of the research problem" (Participant 7), researchers said their work was strengthened. Bringing lived experience and expertise into academic spaces also fostered a sense of ownership and inclusion in areas where priority populations have been marginalized (Jehangir, 2010). Furthermore, participants affirmed the emergence of "policy and advocacy windows" (Participant 5) arising from COVID-19, forcing alignment between social problems, political factors, and policy options (Mintrom & True, 2022). The pandemic exposed existing systemic social and health inequities, which created urgency in policy spheres (McGrail et al., 2022). Equity-focused community-engaged research projects potentially benefited from changes in policy agendas. Respondents discussed how interest and uptake in these projects may have increased as policymakers learned how the pandemic impacted diverse communities.

Looking Ahead: Conducting Community-Engaged Research in Future Health Crises

At the closing of the roundtable, participants were asked to reflect on changes they would implement when conducting community-engaged research in future health crises. Their responses were wide-ranging—from holding informal check-ins for all team members to ensure psychological safety to setting standards and guiding values for engaging community partners. Many

identified a desire to learn more from other community-engaged researchers and share knowledge across networks. Attendees also discussed the importance of interdisciplinary teams, leveraging the diverse training and expertise of academic researchers, community-engaged scholars, and service providers. Participants noted how support from trained mental health professionals would help create psychological safety when conducting research on sensitive topics during health crises. Several attendees pointed to the need for a trauma-informed approach, which recognizes the impacts of trauma on community members, as an aspect of community-engaged research during crises, to foster social cohesion and well-being (Falkenburger et al., 2018). Participants underscored that following a trauma-informed approach may be especially critical during health crises to ensure researchers are well-equipped to work with priority populations who disproportionately experience socially produced health inequities (Huang et al., 2022; Ontario Agency for Health Protection and Promotion et al., 2015). Trauma-informed research training should be provided to researchers at the institutional level to equip them with the skills necessary for ethical engagement with communities.

Overall, roundtable participants highlighted how community-engaged research must be recognized as fundamental to health crisis responses, and not merely designated as an afterthought. Although the popularity of community-engaged research projects has increased in many disciplines, community–university engagement continues to be treated as a peripheral activity, intended to supplement teaching and learning (Cristofoletti & Pinheiro, 2023). Community-engaged research should be prioritized because the approach centers on respect for community members and supports active knowledge translation (Solomon et al., 2016). Attendees deliberated on the importance of being guided by community partners' experiences, recognizing the significant toll of the COVID-19 pandemic on their service delivery and capacity to engage as research partners. Through their shared projects, they attempted to "connect community needs to research objectives" (Participant 7). This goal was demonstrated, in part, by their dedication to building capacity and infrastructure for CSOs to lead community-initiated research. Attendees also discussed their role in mobilizing resources and promoting connections across their networks of community partners, particularly during crises, when CSOs' service demands are high and resources are stretched thin (Dodd et al., 2022).

In addition to creating psychological safety and building capacity, some attendees emphasized the need to continue research on areas of expertise crucial to community health, rather than "abandoning these topics" (Participant 8) in favor of infectious disease research. One participant cautioned against this approach, recounting how research on certain health and social topics was overlooked because many researchers sought COVID-19-related funding. The ongoing emphasis on COVID-19 research topics continues to affect community-engaged partnerships in the "post-pandemic era" (Leach et al., 2021), as research unrelated to the pandemic faces resource challenges (Rashid & Yadav, 2020). Furthermore, many discussed the importance of being flexible when working with communities in crises. To maintain equitable engagements, researchers should pivot plans and processes as communities uncover new needs. This approach must be underpinned by "flexible funding" (Participant 4) that is responsive to the uncertain and evolving nature of crises.

Recommendations

Community-engaged researchers' endeavors were hampered by public health measures aimed at controlling COVID-19 outbreaks. In spite of the barriers encountered, community-engaged researchers effectively adapted their methods of engagement in the crisis context. Based on attendees' contributions, we propose six institutional- and partnership-level recommendations to enhance community-engaged research in future health crises.

Institutional-Level Recommendations

1. Create guidance and frameworks for community–university partnerships during health crises

Community-engaged research projects play an important role in supporting health crisis responses (Cristofoletti & Pinheiro, 2023). In response to COVID-19, the World Health Organization developed ethical standards for community engagement in public health emergencies (WHO, 2021). However, these standards are not always incorporated into ethical review processes. Given higher

education institutions' increasing focus on community–university partnerships, institutions should develop actionable guidance and frameworks to facilitate these partnerships amid health crises. Particular attention should be given to crisis-specific considerations, including funding sources, resource requirements, and ethical challenges. Institutions must also provide community-engaged researchers and CSOs with opportunities to provide input on their needs, reflecting on gaps and barriers from past health crises.

2. Provide CSOs and other community-based organizations with the resources needed to participate in community-engaged research

During the COVID-19 pandemic, many community–university partnerships relied on online communication tools, such as Zoom, to maintain connections (Kalmar et al., 2022). However, such methodologies faced barriers to connectivity and virtual modes of engagement, particularly for those in rural and remote communities, immigrants, older adults, and people with low income (Li, 2022). The pandemic emphasized this digital divide, which presented challenges to conducting equitable community-engaged research and sustaining partnerships. Moreover, access to information and communication tools remains inequitable, beyond the immediate crisis context (Marlowe & Allen, 2023). To address these barriers, institutions should directly provide community partners resources required for community-engaged research, such as licenses for online communication tools and access to crucial knowledge-sharing platforms.

3. Develop targeted funding opportunities to sustain community–university research partnerships

Many community partners struggled with funding during the pandemic, while researchers had to pivot to meet new demands, which often carried significant costs. Emergency funding for community-engaged research during crises could ease these transitions, decreasing the burden of research participation on community partners and facilitating responsive research. Although community engagement plays an important role in responding to immediate emergencies (Carson et al., 2020), higher education institutions should also consider the long-term benefits and applications of community–university partnerships. These partnerships must be proactively supported by funding opportunities at the institutional level, which may provide research partners with honoraria for their time and insights shared, as well as providing affiliated researchers with funding sources to establish a network of partners. Such support also involves acknowledging the complexity of community-engaged research, as trusting relationships take time to develop and are often incongruent with traditional grant cycles and the output-dependent nature of academia (Olvido, 2021).

Partnership-Level Recommendations

1. Identify low-barrier modes of engagement to meet community partners' capacities

At its core, community-engaged research centers on community benefit and equal partnerships (Clinical and Translational Science Awards Consortium, 2011). Academic researchers must meet their partners where they are, which involves identifying low-barrier modes of engagement that are crisis-resistant and accessible to all partners involved. Research partnerships should also allow for different modes of engagement (e.g., virtual connection, phone calls, online discussion boards) to ensure inclusivity.

2. Be responsive to shifting priorities and needs

During health crises, researchers must be mindful of rapidly changing priorities and needs, which may alter the context in which community-engaged research is conducted (Edwards et al., 2020). It is essential to have a clear understanding of a community partner's intended level of commitment and to prioritize adaptability, as their capacity to engage may be hindered as they attend to their constituents' emerging needs. Where possible, community-engaged research should explore mutually beneficial opportunities to align community needs with the research objectives.

3. Center capacity building in the partnership

Researchers frequently realize benefits from projects performed in collaboration with CSOs, such as career advancement, network building, and a sense of fulfillment (Grain, 2020). In practice, however, the benefits to community members are not always guaranteed. Researchers need to center capacity building throughout the entire partnership. Moreover, the duration of partnerships should not be bound by publications or other outputs. Community partners

should benefit equally from projects and be empowered to lead community-driven research. At the outset of projects, community partners and academic researchers should discuss capacity-building opportunities for all members of the research team. For example, community partners may identify training gaps that academic researchers can help address in their partnership.

Conclusion

During crises, meaningful and authentic relationship building is fundamental to addressing disparities and building trust in public health interventions (Kosel & Nash, 2020). Relationship building requires a significant time investment, yet public health crises necessitate urgent responses to contain the spread of infectious diseases (Eisman et al., 2022). As demonstrated by this roundtable discussion, conducting community-engaged research amid the COVID-19 pandemic presented unique challenges. Researchers faced barriers, including ethical considerations, funding constraints, and continued pressure to perform in environments perceived as psychologically unsafe. The digital divide and restrictions imposed on in-person gatherings also impacted their relationships with community partners. However, the pandemic also enabled researchers to explore new, innovative forms of engagement and adapt their research plans to better align with community needs. They prioritized capacity building, reflexivity, and reciprocity in their partnerships by remaining responsive to communities' emerging priorities. Through our roundtable discussion, researchers elucidated the value of community-engaged research amidst health crises, signaling a need to continue these conversations to better prepare researchers for engagement with communities during unprecedented public health emergencies.

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