

# **Pursuit of Liberation**

**CRITICAL SERVICE-LEARNING AS CAPACITY BUILDING  
FOR HISTORICIZED, HUMANIZING, AND EMBODIED ACTION**



**Emily A. Nemeth | Ashley N. Patterson**

**A VOLUME IN:  
ADVANCES IN SERVICE-LEARNING RESEARCH**

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A Volume in:  
Advances in Service-Learning Research

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# Pursuit of Liberation: Critical Service-Learning as Capacity Building for Historicized, Humanizing, and Embodied Action

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Emily A. Nemeth  
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## CHAPTER 6

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# UNDERGRADUATE SERVICE LEARNING AS A CONTEXT FOR EXPLORING THE “INSTITUTIONAL VOID” OF HIGHER EDUCATION

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## INTRODUCTION

Service learning has been long viewed as an educational experience that provides undergraduate students opportunities for developing a deep appreciation of

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disciplinary knowledge as integral to civic responsibilities (Bringle & Hatcher, 1996; Taylor et al., 2019). Such experiences have been noted to have a positive impact on personal, moral, and social outcomes for undergraduate participants (Cabedo et al., 2018; Markus et al., 1993; Giles & Eyler, 1994). However, among such reported benefits are concerns regarding the consequences of such community-based experiences when underlying assumptions and philosophies—particularly on the part of university members (institutional leaders, educators, and undergraduate students)—are left unexamined (Ginwright & Cammarota, 2002; Mitchell, 2007). Universities often leverage university-community partnerships to incorporate service learning within undergraduate coursework or research initiatives, and these research-based programs, particularly those that push back on traditional models of service learning as helping the *poor and uneducated* may represent a philosophy on learning and instruction that differs from what many undergraduates experience in their respective programs. Such issues are highlighted in scholarship associated with critical service learning, which is an area of study concerned with traditionally unexplored assumptions and biases that have potential negative impacts on university-community partnerships (e.g., Mitchell, 2007; Mthethwa-Sommers, 2020; Pratt & Danyluk, 2017; Santiago-Ortiz, 2019).

For this qualitative study, we analyzed interview responses of 25 undergraduates who were positioned as co-learners with participating community youth within a university-community initiative. The grounding philosophy of the *University-Community Initiative*, hereon referred to U-CI (pseudonym) is that high-quality learning necessarily involves non-hierarchical interactions; faculty, graduate students, undergraduates, and local youth are explicitly acknowledged as having expertise that is essential for any research endeavor. Such a philosophy is a key element of critical service learning. Scholars associated with this area of study have found that (a) giving to or serving others in need ignores the often racialized, systemic inequities that led to such needs in the first place, (b) those in greatest need are often overlooked as those more able to access resources and pursue funding opportunities receive a greater portion of support, and (c) such acts of supporting and giving subjugate those in the receiving end rather than seeing the philanthropic opportunity to work collaboratively with community and, hence, learn something new (Kinloch et al., 2015; Lynn & Wisely, 2006; Patterson et al., 2017; Wade, 1997).

Efforts to reframe service-learning opportunities, particularly those involving local youth, focus on the benefits of learning *with* community participants, hence positioning the community as a collaborative colleague rather than a recipient of knowledge and resources. Kinloch and colleagues (2015) described such an effort to reframe service learning associated with a local youth garden project as learning through project participation; the focus of creating a community garden moved the goal toward collaborative creation and learning, positioning youth in a range of roles including “financial planner, videographer, outreach coordinator, and pamphlet designer” (p. 45). Hence, service learning framed as *charity* limits

the potential of one’s participation, leaving a community and the larger societal structures unchanged (Mitchell, 2008; Santiago-Ortiz, 2019). In this study, we look at the potential roles and experiences of undergraduate students who have enrolled in a critical service-learning course to support such youth-based programs associated with the aforementioned U-CI, which is designed, as was the youth garden project, to reframe service learning as collaborative participation and learning. We aimed to understand how the participating undergraduates, who represent a range of majors, cultural or racial backgrounds, and levels of expertise, viewed their experiences as both community-based program facilitators and students within a local research university.

The potential contrast between community-based activities and university-based studies may shed light on largely underexplored experiences in an educational system that is founded on, according to African American studies scholar Glaude (2020), a “value gap,” which “is the idea that in America white lives have always mattered more than the lives of others” (p. 7). This value gap thrives in masking reality with what Glaude describes as “the lie . . . a broad and powerful architecture of false assumptions by which the value gap is maintained” (p. 7). Stereotypical notions position Black and non-Black POC groups as harbors for either laziness or unlawful disorder, hence keeping the value gap in play throughout society, including our highest institutions of learning. Social critic and author Baldwin (1972/2007) described the system within which the lie is able to be maintained as one “in which education is a synonym for indoctrination, if you are white, and subjugation, if you are black” (p. 60). We grounded our exploration on Baldwin’s thesis. Given the understanding that we are living under the influence of unspoken social contracts that differ according to cultural membership, we aimed to explore how such inequities are observed when participating in a program designed to extinguish the value gap in education.

Since the early 2000s, the number of university partnerships with afterschool organizations has doubled, which is partially attributed to expressed interests by youth and families “for more varied and interest-driven learning opportunities” (Akiva et al., 2020, p. 2). And yet, as we have outlined, such resources can be problematic on several levels, particularly when historically documented institutional inequalities and underlying assumptions about purposes and roles the university takes on are not critically examined. Critical service-learning scholarship highlights the importance of university-community partnerships as a vehicle for fostering more inclusive, equitable efforts that help all members, including university students, learn with and from each other while collaborating on projects for the common good. Such sentiments are echoed by scholarship within the learning sciences, which position undergraduate students to work and learn alongside community members within university-community partnerships (Cole & Distributive Literacy Consortium, 2006). The noted benefits of such reciprocity include a greater social awareness of the origins of socioeconomic disparities (Ginwright & Cammarota, 2002; Mitchell, 2007; Radina et al., 2018) and the

realization of the social changes needed for greater equity (Calderon & Cadena, 2007; Sgoutas-Emch & Guerrieri, 2020). A recent case study by Pratt and Danyluk (2017) highlighted the important role that critical inquiry plays in revealing presumptions and stereotypes about different cultures, particularly for university-community partnerships, which lead to “personal and social transformation during service-learning” (p. 20). Focusing on a community-based project in Alberta, Canada, the authors explored how non-Indigenous pre-service teachers from a local university connected and worked with an Indigenous school community; reflections from participating teachers revealed moments of cognitive dissonance when experiences contradicted deeply held, erroneous assumptions about the experiences and conditions of Indigenous community members. Such moments of dissonance led to revisions in such ontological assumptions, resulting in greater awareness and understanding on the part of the university students about the social changes needed for the community to thrive.

The present study is different from many service-learning studies like those described above in that we focused on a community-based program in which the university participants are more demographically representative of the participating community. As such, we aimed to understand the experiences and potential benefits of participating undergraduates who more likely share similar experiences and linguistic and cultural practices as the community participants who were explicitly positioned as *co-learners*.

Undergraduate-community youth connections fostered through critical service-learning courses may be equally beneficial to undergraduates, yet research examining such potential benefits remains limited (Nelson et al., 2017). The potential for collaborative learning and social change via service learning programs depends largely on how undergraduates, who typically serve as the direct point of contact with the participating community, are prepared and supported in their roles and responsibilities; too often, the focus of so-called service learning courses are on substantive scholarly content with little to no opportunities for critical discussions about the structural inequities in need of social reform (Barrera et al., 2017; Mitchell, 2007; Pollack, 2013). Hence, critical service-learning courses are effective in supporting transformative collaboration and learning insofar as instructors of these courses plan for and actively cultivate critical discussions about the lived experiences of others and the historical roots that have shaped such experiences, all of which arguably positions the community as a source of knowledge and expertise. Furthermore, faculty members who teach such courses have a responsibility of serving as the central connection with community leaders in order to foster a strong, long-term partnership founded on shared values and goals that will further clarify for participating undergraduates their roles and responsibilities within the community-based project or program (Bialka et al., 2019). A university-community partnership with such a strong foundation of shared responsibilities and co-learnership may have greater visibility within the university

context and hence have greater chances in early recruitment and sustainability undergraduate participation (Bialka et al., 2019; Estes et al., 2019; Jacoby, 2014).

Our exploration of expressed views and experiences of participating undergraduates was aimed at gaining a deeper understanding of what it meant to participate in a program that explicitly positioned them as co-learners with community youth participants who, in terms of cultural and linguistic affiliation, are often reflections of their younger selves. The University-Community Initiative (U-CI) is a collaborative effort involving five youth-based programs led by the local research university to support community youth who are given opportunities to engage in authentic projects ultimately designed to strengthen the K–20 pipeline. Undergraduate students (hereon referred to university or U-CI co-learners) receive ongoing orientation, training and guidance in serving as co-learners with community youth. The community youth participants are in turn invited to take part in the planning and design of project goals and activities, ensuring that programmatic decisions are reflective of community interests. University co-learners are instrumental in fostering critical dialogue around local environmental and social justice issues with community youth who are encouraged to voice their ideas and concerns. University co-learners generally participate in U-CI through education courses that employ service-learning opportunities for gaining pedagogical expertise. Thus, our undergraduate students must navigate between traditional classroom-based instruction and community youth-led learning efforts in shared partnership spaces. All affiliated U-CI programs involve activities that engage community youth participants in both formal (school and university) and informal (after-school field trips) spaces, but it should be noted that even in formal spaces (e.g., a university classroom or laboratory), all activities or events have been pre-planned *with* the community youth, hence the community-based nature of all U-CI interactions.

Following foundational planning and agreements between the university faculty and community leadership, all participating co-learners (including community youth) engaged in weekly collaborative projects that took place in various locations including the university, the after-school community sites, and a local space of interest to community youth (e.g., a local watershed). As such, activities varied according to geographic location, which is further described in our methodological account. We believe that the fluidity of in- and out-of-school contexts provided U-CI co-learners opportunities to develop relationships that are less tethered to a singular, academic purpose; the primary goal for university co-learners, as established and consistently articulated by faculty leaders, is to (a) learn *with* and *from* their younger peers and (b) engage in culturally relevant discussions and collaborations (i.e., topics and issues of interest for community youth) that lead to greater awareness and activism (e.g., co-creation of a PSA on the racial injustice of dumping waste on local public beaches).

Many institutions and associations within higher education, including the university highlighted in our study, have made public statements denouncing racist

and xenophobic policies of the previous federal administration and proclaiming commitment to supporting diversity, equity, inclusive practices and policies. Such expressed commitments are an important step for real institutional change. The subsequent steps of critical introspection, in our opinion, must involve an open dialogue about the experiences of university students, particularly those reflecting the diversity that we strive to include in higher education; such an effort is even more poignant for those that tout themselves as a Minority Serving Institution (Ash et al., 2020; Gasman et al., 2008).

This study is a critical discourse analysis (CDA) that includes a micro-level, analytic lens (Bloome & Talwalkar, 1997; Fairclough, 2001; Rogers, 2002) of interview conversations (Skukauskaite, 2017) with 25 undergraduate co-learners who served as facilitators for one of three literacy related projects associated with the U-CI. All three projects are led by a faculty member (first author) at a nearby public research university in California and coordinated by graduate students (all co-authors). It is important to note that this study is not focused on the operations, curricula, leadership and activities specifically associated with the research university in which the U-CI is based. Grounded in a sociocultural view of literacy as contextually anchored, social engagement (Banks, 2012; Cook-Gumperz, 1986; Gutiérrez, 2008; Street, 2013; Vygotsky, 1980), we aim to address the following research questions: What are the potential tensions or challenges that undergraduates experience while striving to engage in community-based programs during their studies? What do these tensions and challenges reveal about the value gap that continues to plague our academic spaces?

## THEORETICAL FRAMEWORK

### *Discursive Silence*

Given our aim to explore the often unspoken, invisible tensions, power dynamics, and experiences of our undergraduate participants, we took up the construct of silence (e.g., Huckin, 2002) as a central premise for our study. Scholars across research disciplines including education, humanities, philosophy, rhetoric, and others have long studied the role that silence—often defined as omitted, suppressed, or devalued phenomenological or experiential knowledge—plays in various social spaces (e.g., Basso, 1970; Ephratt, 2008; Pixley & VanDerPloeg, 2000; Thein, 2013). Specifically, we followed the position of silence as a type of *void*, which reflects the scientific view of void as the “known unknown” of astronomical phenomena (Arya, in press). In the context of cosmology, the void is a placeholder of sorts for various forms of astronomical “stuff” that has yet to be documented and codified as new scientific knowledge. As technological capabilities and ongoing investigations evolve, what was previously invisible may become visible (Shields, 2006; Weatherall, 2016). As such, we positioned our undergraduate participants as our cultural guides through the void of institutional learning. Their participation as co-learners with community youth helped to high-

light similarities and differences between their experiences within the university and community contexts. For example, scholars have acknowledged that inequities persist in higher education institutions, which continues to reflect a “plantation politics”—white power and privilege ruling over exploited minority staff, faculty and students (Squire et al., 2018, p. 3). What continues to be hidden are all the ways in which Black and other individuals of color are exploited to maintain racialized inequities. Aspirational statements promoting equality and inclusion are now ubiquitous across our academic institutions and yet biased practices continue to be observed in “recruitment and selection, promotion processes, curriculum, admissions as well as student experience and outcomes” (Tate & Page, 2018, p. 142). We work to explore the known unknown of our university co-learners’ experiences in higher education.

### *Silence as Institutional Void*

Findings from research on culturally responsive practices in education converge on the importance of learning experiences in which students are encouraged to use and apply their funds of knowledge such as their home language(s), family or culturally related histories and lived experiences as a way to make learning in academic spaces more meaningful and, hence, effective (González et al., 1995; González & Moll, 2002; Rios-Aguilar & Kiyama, 2012; Wingate, 2007). Active inclusion of knowledge and experiences that undergraduates bring to academic spaces help in fostering a sense of relevancy and interest for engaging in academic content (Bensimon, 2007). Such inclusive curricula and instructional facilitation also help foster a sense of acceptance and belonging for many Black students and non-Black students of color upon their entrance to higher education (Rios-Aguilar & Kiyama, 2012). Hence, the message is clear: undergraduate students, particularly those representing traditionally marginalized populations in higher education, will have a far better chance of academic success when given the opportunity to connect and contribute their knowledge and expertise. And yet, there is a long-standing observation that the societal inequities based largely on gender, race, and language are highly prevalent in higher education (Banks & Banks, 2019; Crenshaw, 1989, 2011; Spencer et al., 1999; Steele & Aronson, 1995).

The shared understanding that feeling valued and encouraged to contribute one’s prior knowledge is at odds with the continued observations that such values are rarely observed in academic spaces. Critical race scholar Yosso (2005) provided a thick description of the knowledge, experiences, and abilities of culturally and linguistically marginalized communities that are largely unacknowledged in the context of higher education. Course content and outreach programs instead reflect a deficit view of non-dominant communities, hence excluding potentially enriching opportunities for learning about the linguistic and cultural wealth represented across diverse communities. Such historical exclusion of equity and cultural wealth serves as the entry point to what we are calling the *institutional void*.



Thirty years ago, legal scholar Crenshaw (1989) coined the term *intersectionality* in order to provide a way to see and address the power imbalances based on gender, sexual orientation, race, language, and religion. Noting the compounding effects of these various demographic identities, she made visible how the identities we maintain within social contexts can crescendo into greater exclusion and discrimination. Such an effect happens without explicit warning and continues invisibly through unspoken neglect of systematic, dominant practices. As such, the Black transgender undergraduate student, for example, is far less likely to gain the same access to resources and opportunities as a Black woman undergraduate, who is in turn less advantaged than a white woman undergraduate. This analysis of intersecting identities serves in clarifying the pervasive inequities of the institutional void based on identity politics.

A related construct to intersectionality is *stereotype threat*, which was coined by psychologists Steele and Aronson (1995) who observed a significant difference between Black and white undergraduates in performing a task (e.g., completing a geometric puzzle) based on the directions given. If prompted that the task is to assess one's aptitude for cognitive reasoning (a prompt that reflected an academic goal), white participants far outperformed the Black participants. If given the direction that the same task was merely a game with no academic associations, Black participants actually outperformed their white peers. This groundbreaking discovery, which continues to be a robust finding in psychological research (e.g., Spencer et al., 2016) highlighted another aspect of institutional void; the perception of Black students as lacking intelligence compared to their white peers is an invisible yet powerful mechanism that perpetuates inequities in academic spaces, even within institutions that explicitly celebrate diversity and inclusion among their students and faculty. Arguably, the observed prevalence of stereotype threat coupled with the expressed experiences associated with intersectionality are evidence of the value gap in higher education. As such, we aimed to learn about the ways in which our participants, who have varying degrees of connections with these constructs based on respective cultural memberships, view the value gap within higher education in light of their participation in U-CI. More specifically, we wanted to understand how a university-community partnership founded on mutual respect and culturally inclusive practices could also serve as a catalyst for raising awareness and critical reflection about the institutional void.

This study is an exploration of expressed perspectives and experiences of 25 undergraduates at a local research university that has and continues to make efforts to create an inclusive environment for students of color. Through this critical lens of institutional void, we engaged in the systematic, iterative process of describing, interpreting and explaining participants' views related to their undergraduate experiences and community program involvement.

## METHODOLOGY

### *Study Context*

The U-CI includes five local projects, each of which are connected with a specific community site and focus on an issue or interest, such as investigating current local efforts to reduce plastic use. Community youth are invited through the partnering organizations, Girls Inc. or the Boys and Girls Club, both of which are the participating sites for the current study. U-CI projects involve exploration and collaboration on a variety of literacy-driven topics and issues, particularly those relevant to science, technology, engineering, and math (STEM) within the context of environmental sustainability. Three of the five projects underway in Fall 2019/Spring 2020 were identified for this study; two are associated with the local chapters of Girls Inc. and one associated with a local chapter of the Boys and Girls Club. The U-CI within the local research university is led by a faculty member and coordinated by five graduate students, all of whom collaborated in this exploration.

### *The Local Research University*

The local university is located near the coast of central California and is noted as a Minority Serving Institution. At the time of this study, a total of 23,349 undergraduate students were enrolled at the university. Of this total, 29% identified as Chicana/Latina, 28% identified as Asian/Pacific Islander, 5% as Black/African American, and 35% as non-Hispanic white. Diversity is expressed to be highly valued within the university campus and is largely defined as a student population that matches the diverse population of the state. The research university has explicitly connected the notion of diversity with academic rigor. As such, we view the university context as a representative model of the U.S. higher education system. Given the expressed emphasis of diversity as a strength, our university co-learners may not experience many of the inequities produced from the value gap that pervades our society. We hypothesized the possibility that expressed experiences on undergraduate life may reflect values and practices of the U-CI, which positions all members as valuable co-learners.

### *U-CI Youth Projects*

Participating undergraduates served as college buddies to youth within one of three different projects—*Young STEMInists (Girls, Inc.)*, *Teen STEMInists (Girls, Inc.)*, and *New Leaf (Boys and Girls Club)*. All participating youth live within the surrounding community that, according to the 2000 Census, has a per capita income of \$26,466, which is approximately \$15,682 lower than the national average. This stated, the same surrounding community includes some of the wealthiest households in the country, hence increasing the average income to \$37,692. Most of the local youth are living in households below the poverty line, and due to

the COVID-19 pandemic impacting the globe at the time of this chapter's preparation, local news outlets have reported extreme poverty levels within this area. The local school district reported 95% of their students as eligible for free and reduced lunch. Additionally, 85% of students were reported as Latinx with more than 60% speaking Spanish at home.

The key of U-CI is the connection of community youth with university co-learners who are trained by faculty to facilitate co-learning, collaborative connections with their younger peers. The undergraduate population represented by the university co-learners share common cultural and linguistic backgrounds with community youth; this connection is a significant resource as the majority (more than 80%) of K-8 teachers within this region are white women. The partnering university was recently acknowledged as a Minority Serving Institution; 26% of the student population identify as Latinx, with about 34% identifying as white. Other representing groups include Asian/Pacific Islander (19%), mixed ethnic identities (12%) and other undocumented internationals (9%). An underlying goal of the U-CI is the contribution of local K-20 pipeline efforts happening within outreach units on campus. Each of the three U-CI projects are described in turn.

#### *Young STEMInists*

The Young STEMInist program was designed to foster STEM interests and confidence among community youth in grades 4-6 who are members of the local chapter of Girls Inc. and who identify as girls or non-binary individuals. University co-learners were trained and supported to foster STEM-related interests and sense of belonging while eliciting ideas from community youth about researching and writing about women and transgender scientists on the university campus.

Community youth engaged in hands-on activities led by women and non-binary scientists across different STEM related fields (chemistry, marine science, engineering, etc.) on the local university campus as well as hands-on explorative activities within the after-school program site. This program spanned a 20-week period split into two segments to align with the university and local schools' and organizations' academic calendars. Weekly sessions involved either visits to the local campus or collaboration at the organization site, depending on the availability of participating faculty and scheduling conflicts of the community organization. All participants (undergraduate and youth co-learners) were positioned as collaborators and co-researchers, which were organized into one of six different small groups (2-3 university co-learners and 5-6 community youth per group).

All young STEMInist program activities, including visits to campus laboratories, stemmed from specific interests and curiosities from community youth participants. Specifically, community youth were given full agency on questions asked of participating scientists and weighed in on activities and field trip explorations. Throughout these weekly visits, 12 university co-learners distributed activity materials among their groups, demonstrated and supported active participation, and documented the visits through their session notes that were submitted elec-

tronically on a weekly basis. After the first two visits, the facilitators led the youth in reflection exercises to identify areas of improvement for the program as well as potential revisions to the interview questions posed to participating scientists.

The culminating goal of the project was to produce, for this particular cycle, an instructional coloring book for younger peers that provided key conceptual information and disciplinary knowledge gained from their visits with STEM professionals. It should be noted that this particular project was cut short from achieving the final outcome due to the onset of the COVID-19 pandemic and the sheltering orders that closed the partnering program site. Outcomes from previous efforts are exemplified in book publications co-authored by participating youth (Arya & McBeath, 2017; Hirsch et al., 2021).

#### *Teen STEMInists*

The Teen STEMInists project was designed as an extension of the Young STEMInist as many previous participants expressed a desire to continue their connection with the program. As such, this project was also designed to foster STEM interests and academic confidence in women and non-binary community youth. Similar to the project designed for younger peers, the Teen STEMInist Program spanned 20-weeks split into two 10-week segments. Since there were only 10 community youth participants, the teens worked as a single group led by four university co-learners. Throughout the program, community teens engaged in weekly sessions with their university co-learners that took place either at the partnership site or at the university campus. The design of the activities maximized the use of the space; for example, sessions that took place at the university involved visits to labs led by women and non-binary identifying scientists who designed activities based on the expressed requests of the community teens. The teens developed interview guides based on their curiosities and interests related to the featured scientists' research and professional journeys. This cohort of teens were invited to help design and organize U-CI's first annual Youth Summit conference scheduled to take place in the spring. This Youth Summit was designed to be a bilingual Spanish/English conference in which community youth would be invited to submit proposals associated with environmental research, science experiments, and DiY innovations that would be presented at this community-wide event. Due to COVID-19, this conference was postponed to the following year.

#### *New Leaf*

The New Leaf project is similar to the previous U-CI projects in that community youth are engaged in STEM-related activities that take place at the partnership site or at the university on a weekly basis. Furthermore, all activities and projects stem from the expressed interests of participating youth who, like all other U-CI community youth, are given full agency in shaping the activities and events associated with this program. New Leaf community youth collaborated with 13 university co-learners who were guided by lead project faculty to foster

meaningful connections and a sense of agency and belonging among participating youth. New Leaf is a 28-week program designed to support up to 20 local 4–9th grade students from the local Boys and Girls Club to learn about the science of gardening, nutrition, and environmental awareness. As reflected in the titled role used throughout this study, participating undergraduates are co-learners with community youth, all working in small group configurations (e.g., 3–4 community youth grouped with 2–3 U-CI co-learners). All co-learning groups explored issues, concepts, and processes associated with a local garden (called the *vivero*) and engaged in critical discussions about local environmental issues (e.g., inequitable access to and maintenance of public beaches). As such, members were encouraged to learn how to be aware of their surroundings and their connections with the natural environment as well as to note social inequities, like environmental racism, that prevail in local spaces.

University co-learners participants worked alongside community youth in transforming an abandoned side alley into a garden space—the *vivero*—that was recorded and edited as a time lapse video PSA. Other project outcomes included a collection of poetry written by community youth (Arya, 2016) and a digital poem about environmental racism within a local context.

The non-hierarchical, co-learning approach exemplified in the above project descriptions clarify the ways in which U-CI is community-based. Lead program faculty and graduate student coordinators worked together to make every effort in the design of program goals, orientations, resource materials (e.g., articles, discussion templates, activity guides), and planned field trips to be adaptive to the expressed interests of participating community youth. As such, no plan was set in stone and every decision on particular activities and projects required final say from community youth. It is also important to note that prior to program implementation, lead faculty and graduate student coordinators visited each community program site to gather information about goals and interests of potential youth participants in order to ensure that all program activities would be community-based.

The practices across U-CI projects emphasized the importance of effort over perfectionism. For example, failed attempts during lab activities (for STEMInists) and building projects (New Leaf) were viewed as natural steps in the process of learning and innovation, hence any failures experienced by the participants (e.g., freshly applied paint on the bench peeled off within days) were reframed as learning opportunities (the importance of sanding and using a primer paint). In a previous exploration of participating community youth perspectives, we found an increased interest in STEM topics and an increased number wanting to pursue STEM studies in high school and beyond (Nation et al., 2019). For this current study, we focused on 25 university co-learners to learn about motivations for and insights gained from joining such community-based programs.

## PARTICIPANTS

All study participants were facilitators (co-learners) for one of the three programs described above. Of the total 32 undergraduates invited to engage in interviews, 25 (78%) consented to participate, resulting in nine from Young STEMInists, four from Teen STEMInists, and 12 from New LEAF.

Likely related to the specific focus of the two STEMInist projects, the gender of participating undergraduates was predominantly female, with 21 (84%) identifying as women and four (16%) identifying as men. Participants represented a range of ethnicities with 10 (40%) identifying as white, seven (28%) as Chicana/Latinx, one (4%) Native Hawaiian or Other Pacific Islander, one (4%) Southwest Asian and North African (SWANA), three (12%) as more than one ethnicity, and three (12%) declined to state. Most (80%, 20 total) of participants have at least two years of college experience (upper division) while the remaining five (20%) were within the first two years of studies (lower division).

The majors represented by the participants were roughly evenly distributed across STEM (biology, chemistry, etc.) and non-STEM (humanities, English, etc.) majors. Of the total 25 participants, 13 (52%) were STEM majors, with seven majoring in biology, three in environmental studies, and two in neuroscience. For the 12 non-STEM majors, seven majored in sociology while each of the remaining five majored in religious studies, English, communication, economics, and history. Across all participants, nine (36%) were enrolled in an education minor.

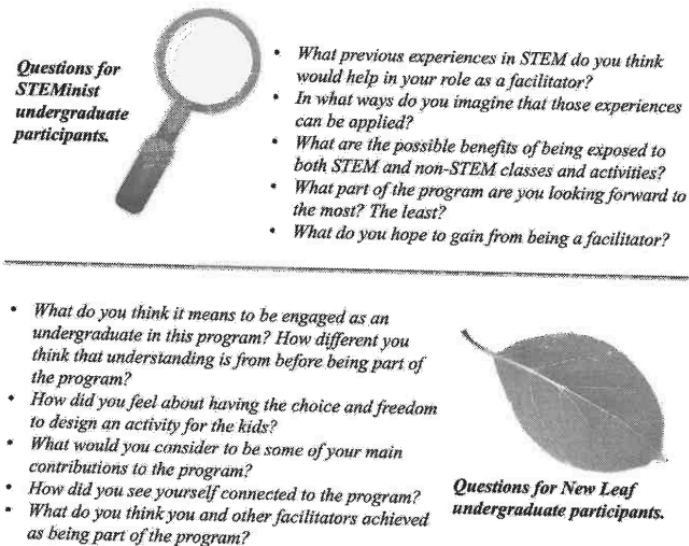
Participants were originally recruited through two avenues. The first was through a service-learning class offered by the education department at the university. As a part of the course, students were expected to work with a community-based outreach program for the course of the quarter. New LEAF and both STEMInist projects represented three of the site options. Of the informants in this study, more than half (14 total) were enrolled in this course and joined the programs as a class requirement. Following the practicum course, all of the informants chose to continue their participation in the program after the class ended. All other participants were recruited through emails sent to the education minor and biology major listservs. Participants were invited to apply to each respective project and were selected based on their application responses that were submitted electronically. Applicants were explicitly asked about their motivations for joining one of the projects, experiences working with youth, skills and hobbies (e.g., gardening and construction skills) and multilingual expertise (e.g., Spanish speaking and writing skills).

## INTERVIEWS

Interview questions were similar across the three project contexts with differences that aligned with the amount of project experience at the time of the interview. Interviews with undergraduate facilitators for the New Leaf project began in late fall of 2019 after participants had completed at least one term (10 weeks) of pro-

gram activities with youth; all interviews associated with this project took place during the spring.

The interviews of STEMInist facilitators took place earlier in the winter 2020 term when these projects (one term shorter than New Leaf) were scheduled to begin, hence these participants were near the beginning of their experience working with younger peers. We posited that the varied entry points of project participation at the time of the scheduled interviews would afford our ability to view responses collectively as representative of how one's initial perspectives may change after participation. Given our sociocultural view of literacy as social engagement (e.g., Gutiérrez, 2008; Street, 2013; Vygotsky, 1980), we were able to explore interview exchanges as a collective social space that may reveal the potential tensions or challenges that undergraduates experience during such community engagement and the ways the aforementioned value gap is manifested. Figure 6.1 below illustrates a sampling of unique questions posed to the STEMInist and New Leaf facilitators; a full list of questions by project are available in Appendix A.



Crafting Critical Service-Learning in Online Spaces: Critical eService-Learning

FIGURE 6.1. Interview Questions by Project

Questions for STEMInist facilitators focused on goals and expectations while New Leaf facilitators were encouraged to reflect on their experiences in the program. All interviews were audio recorded and lasted an average of 22.5 minutes. Approximately 9.5 hours (570 minutes and 9 seconds) of recorded exchanges were collected.

Each participant was individually interviewed using a conversational style with guiding questions as exemplified above (Skukauskaite, 2017). Interviewees were positioned as cultural guides with expertise. As such, guiding questions were used to support a natural conversation about one's knowledge and experience. All participants were interviewed by either a graduate research coordinator (for New Leaf) or an undergraduate research assistant (for STEMInists). Interview questions were designed based on the level of experience of facilitators and the respective goals of each program. Given that both STEMInist programs were just beginning at time of study, undergraduate participants received the same questions aimed to identify their previous experiences, expectations, and goals within The STEMInist Programs. New LEAF undergraduate participants had completed several months of facilitation within their program; as such, the interview protocol aimed to understand their experiences through the program and their perceptions and feelings towards it.

## ANALYTIC FRAMEWORK

### Critical Discourse Analysis (CDA)

Given the critical focus of this study, we chose critical discourse analysis (CDA) described by sociologist and discourse scholar Fairclough (2001) for our analytical approach. The three-tiered design of CDA guides the analysis beginning with a descriptive representation (e.g., summary description) of an event or textual source. Next, the research team interpreted such descriptions, leading to broader explanations (emerging themes) that index critical implications for a given study. Originating in journalistic explorations, Fairclough's CDA framework highlights the importance of understanding underlying cultural values and positions of voices included (or excluded) from rhetorical media. Similar to the work of other educational researchers, we used CDA to explore the relationship between language produced during researched events, like interviews, with societal issues related to learning within sociocultural contexts (Rogers et al., 2005). Within this broader critical frame, we aimed to make visible the critical positionality of all individuals associated with this study, including the researchers.

### Positionality of Researchers

Following the advice of literacy scholars Gutiérrez and Rogoff (2003), we maintained a mindful eye on our respective positions associated with the U-CI in order to avoid impositions placed on participant voices during analysis. The lead faculty member (using pronouns *she/hers/they/theirs*) is both multilingual and bi-



cultural (Southwest Asian and North African—SWANA and white). The graduate student coordinators and collaborators involved in this study include a Spanish/English bilingual who identifies as Latinx (*he/him*), a bilingual Korean/English who identifies as Asian (*she/hers*), a monolingual English speaker (*she/hers*) who identifies as bicultural (Pacific Islander and white) and two monolingual English speakers (*she/hers*) who identified as white. Acknowledging our respective positions and backgrounds, all phases of analysis for this study were subject to peer review and pushback. Further, the lead faculty member, mindful of their position of power, repeatedly invited alternative perspectives on suggested patterns and themes identified during analysis. Our efforts to avoid biases due to positionality and background was integral to the analytic process that is described later on.

#### *Initial Transcription*

Following the general guide of CDA (Fairclough, 2001), analysis began at the descriptive level; all interviews were recorded and, initially, roughly transcribed (i.e., representing talk at the word level without repetitions, pauses, contextualization cues etc.). The lead faculty researcher reviewed all rough transcriptions while closely listening to respective recordings in order to understand the full contextual meanings in utterances (Gumperz, 1992). During such close listening, the lead researcher constructed summary notes, or thick descriptions (Geertz, 1973) about the intended messages in recorded exchanges. All notes were subject to review and further editing by at least one member of the research team.

#### *Units of Analysis*

Our unit of analysis was determined by the single interview event (Bloome et al., 2004), hence a total of 25 units. Within each event, we further identified subunits based on the first wave of analysis that involved event mapping for each audio recorded interview. Subunits are timestamped, summarized segments that begin with a specific question/request/suggestion from the interviewer or interlocutor, followed by response(s), and ending with some sort of indication of resolution, or signal that the question/request/suggestion was addressed.

Interpretations of descriptive records (audio recordings and summary notes) for each of the 25 units involved peer review by two other researchers, resulting in the creation of interview event maps for identifying salient *subunits* of responses, hence preparing for critical (explanatory) levels of analysis. For this study, subunits were identified by an initial question from the interviewer, which were bounded by the following question indicating a new topic. From the total 261 subunits identified, 37 subunits (97.5 minutes total) reflected indirect references to institutional void. References highlighted various assertions related to challenges and tensions associated with undergraduate study experiences, like a disproportionate resource allocation based on perceived value differences of particular majors.

#### *Micro-Level Analysis*

All identified subunits associated with institutional void were further analyzed by research team members to clarify intended meanings. Salient subunits were transcribed into message units, which constitute the minimum representation of meaning within utterances (Bloome et al., 2004; Green & Wallat, 1981). This message unit-level of transcription allowed us to represent how the participants co-constructed the conversation from the string of individual utterances naturally produced in speech (See Appendix B for transcript key).

All micro-level transcriptions were reviewed by members of the research team for accuracy and consensus. From these identified exchanges, the lead researcher postulated a list of thematic statements about participant perspectives that were first reviewed by the research team for consensus prior to sending to all participants for member checking. Adjustments in stated claims were minimal and related to clarity and accessibility for participants; such changes did not alter initial analytic findings.

#### *Member Checking Thematic Findings*

After finalizing the analysis of the participants’ responses, we followed approaches of member checking (Rogers, 2002) by reaching out to all participants to clarify our understanding of their perceptions and perspectives. We contacted participants via individualized messages sent to personal email addresses that included the following summarized themes:

- Lack of encouragement to explore a diversity of topics/subjects as an undergraduate;
- Separation of STEM and non-STEM majors;
- For STEM majors, support is mainly felt once they pass “weeder courses”;
- Competitive tensions perceived by undergraduates seem connected to avoidance of available resources like TA support and office hours;
- Community (youth) based programs offer a change to plan for future directions; and
- A new vision of what learning can look like emerged from participating in a U-CI community-based program.

Agreements, disagreements, or additional information were openly encouraged (but not required) in order to check our (re)presentation of participant perspectives. The purpose for member checking is to ensure the accuracy of our interpretations. Eight participants responded offering feedback on these initial findings. Statements featured from these messages are presented in italics with all original spellings and conventions maintained. Rough transcriptions, micro-level transcriptions of subunits, and member check email responses are available upon request.

## FINDINGS

### *General Consensus on Member Checking*

Responses from the eight participants who chose to respond to our open invitation were largely confirmatory; participants who did not explicitly mention information, for example, on the competitive tensions and lack of equitably available resources in undergraduate studies provided additional information in their responses, like FB (pseudonyms used in this study are first and last initials), a Latinx man majoring in environmental studies who wrote the following in his message:

. . . as a first-generation college student navigating competitive spaces in higher education it was difficult to seek help and services not only because of self-imposed reasons and the stigmatization of receiving help, but also because these resources seemed so foreign to me and for the majority of my introductory years at [research university] I did not even realize they existed.

One participant, SB (woman, Pacific Islander majoring in biology) disagreed with such perceived inequities:

I feel as if there are a myriad of resources to help someone figure out what they're interested in that [research university] offers and all it takes it finding the right mentor to lead you through it . . . TAs are a helpful resource to do well and maybe not every student needs them as a resource but it is ultimately up to them if they want to seek further help in their classes or not.

While acknowledging the separation of majors, SB seemed to attribute this distinction, in her words, *to the separation in research topics and departments within the university*. The only other disagreement came from SS (woman, Latinx majoring in biology) who agreed with summarized themes except for the initial theme listed above, on the lack of encouragement to explore a diversity of topics/subjects:

I do agree that there is pressure to get our major done and not much encouragement for exploration of other diverse topics but in my experience, there is pressure to join extracurriculars that have to do with your major or intended career.

In response to a follow-up clarification on the extremity and prevalence of this pressure, SS responded the following:

I did feel the pressure a lot more during my second year. I feel like it is sort of expected of you by the time one enters the second year, especially if you want to go the pre-med route or are thinking of doing graduate school.

Given the overall responses to thematic assertions, we found observable patterned responses in support of summarized themes previously listed.

### *Emerging Explanatory Themes of Institutional Void*

We organized emerging themes into two general findings: (a) undergraduate learning within a research institution can be a harsh, competitive experience with limited or inequitable support and (b) the Community-University Initiative provided a stark contrast to the undergraduate experience, which inspired awareness that learning can (and should) be an inclusive and dynamic experience focused on authentic outcomes. Each of these general findings are addressed in turn. Excerpted responses from participants are presented in micro-level message units (Bloome et al., 2004), hence line numbers correspond to those in the full transcript for each respective participant.

#### *The Inequitable, Competitive Experiences of Undergraduate Learning*

As explained earlier, the local research university has consistently expressed its commitment to supporting diversity and equity for students and faculty, and such sentiments are publicized through website pages and other communicative messages to the public. However, such efforts have not been uniformly perceived as effective for creating safe, inclusive spaces for learning. While all participants acknowledged the importance of having a well-rounded undergraduate education, eight explicitly expressed a feeling of pressure to "get their major done" for their studies. Elective courses and extracurricular activities are generally not encouraged, as described by AC, a white, woman, upper-division student majoring in neuroscience:

159 at an undergrad institution  
 160 not specific to [university name]  
 161 they really tell you that  
 162 your major  
 163 you should do things within your major  
 164 within your sphere  
 165 drawing from so many concepts  
 166 relating to your major ↑  
 167 that almost makes you feel like a fish out of water  
 168 if you do something else  
 169 especially if  
 170 you know  
 171 if you go from psychology  
 172 to environmental science  
 173 that is just two different types of science  
 174 it is very  
 175 inside the brain  
 176 and anatomical body  
 177 versus

178 like  
 179 climate change  
 180 and growing plants  
 181 and stuff like that  
 182 so  
 183 it can be  
 184 super intimidating

For AC, inequities seem to be further exacerbated by a lack of shared knowledge of programs across disciplines, which in turn result in students' ignorance as to the resources and opportunities available to them. When discussing how she learned of the facilitator position within the U-CI and why she had not participated in similar programs previously, AB (woman with a multiethnic background in upper division majoring in biology) remarked that knowledge of programs outside the biology department was not widely shared. In addition, despite having received an email sent to the entire biology major listserv, she predicted that most of the other biology majors remained unaware of opportunities like the U-CI.

483 AB: yeah  
 484 so  
 485 so I literally got an email from like  
 486 the bio department saying like  
 487 oh there's open applications to be  
 488 like  
 489 a facilitator for [the Young STEMinist Project]  
 490 and I like  
 491 read it  
 492 I was like  
 493 oh yeah like  
 494 teaching science to  
 495 like young girls  
 496 like I wish I had a program like that  
 497  
 498 I: That's awesome  
 499  
 500 AB: So then I joined  
 501 or I applied through that  
 502 but like  
 503 I had no idea  
 504 that this was a thing  
 505 and I don't  
 506 I don't really know  
 507 like if most bio majors

508 or any other majors knows  
 509  
 510 I: Yeah  
 511 I didn't know  
 512  
 513 AB: how to get  
 514 this information

AB further hypothesizes that the people who know the most about similar opportunities are the "education people," suggesting inequities in the opportunities afforded to students based on their major.

The university campus itself is geographically segregated with common resource buildings, such as the student union, career services and library, marking the dividing line between STEM and non-STEM buildings. As such, there is a lack of interdisciplinary exchange among the undergraduate populations. Most participants who were enrolled in non-STEM majors expressed a lack of opportunity to explore campus-based facilities that were available to the young project participants, such as the campus greenhouse or marine science touch tanks lab. In addition to a lack of opportunities for exploring alternate sites of campus, participants also expressed inequitable access to resources and opportunities as well as an overall higher value of STEM over non-STEM studies by university leadership. This sentiment was mentioned by nine of the twenty-five participants, including AW, a woman (cultural background unknown) in upper division courses majoring in English and minoring in education:

92 I: and have you encountered any obstacles in your program?  
 93 If so  
 94 What stands out as the biggest?  
 95  
 96 AW: um  
 97 it's [university]  
 98 so English  
 99 like  
 100 the humanities in general  
 101 aren't very  
 102 cared for  
 103 as much as like  
 104 STEM  
 105  
 106 I: yeah  
 107  
 108 AW:  
 109 and all that kind of stuff  
 110 so I would say

168 • ARYA ET AL.

111 resource wise

---

122 everyone is always selling  
 123 like  
 124 the big  
 125 like  
 126 bio and  
 127 like  
 128 chem and all that  
 129 and I'm like  
 130 I just need these types of book  
 131 but  
 132 so i always  
 133 like  
 134 have to buy my books brand new  
 135 and like  
 136 it's just little things like that  
 137 that I've noticed

#### *The Plight of "Weeder Courses"*

While participants mentioned tensions across disciplines throughout their undergraduate experience, thirteen participants also commented on their struggles in maintaining a foothold within their own major. Noted biology and chemistry courses seemed to be structured to reduce the number of people within a given major—such courses were called “weeder courses” by undergraduates. Participants noted that the difficulty of such coursework is targeted at the entry level, which was perceived to serve as prerequisites for upper division courses. AB, a woman with a multiethnic background enrolled as an upper division biology major, reflected upon her first few years at the university:

148 AB: I feel  
 149 I feel like  
 150 they have to take  
 151 like they take a  
 152 ton  
 153 of bio students  
 154 when they first come  
 155 like  
 156 I remember meeting  
 157 like  
 158 everyone in my hall and they were all bio  
 159

160 I: oh my god [chuckle]  
 161  
 162 AB: So  
 163 but none of them are bio anymore  
 164 I just feel like there's  
 165 like this weeding out program

AB continued to mention that this “weeding out” process and lack of support is focused solely on the lower division courses while upper division courses establish a less toxic environment:

229 AB: but upper division is so much better  
 230 it's not  
 231 it's not as toxic  
 232 toxic  
 233  
 234 I: the weeding out↑  
 235  
 236 AB: Yeah  
 237  
 238 I: oh god  
 239  
 240 AB: yeah  
 241 they like  
 242 want you to do well [scoff chuckle]

A lower division biology major, OP (woman, white) mentioned similar sentiments about the lack of support found in the entry level courses not only from the instructors, but also from academic advisors. She reflected:

93 at the beginning of the school year  
 94 I was like  
 95 I don't know if I want to keep doing this  
 96 like I kind of wanna switch  
 97 like I went and saw  
 98 like my bio advisor and he was like  
 99 soooo not helpful  
 100 he just kind of like  
 101 brushed me off  
 102 and he was like  
 103 you're on track  
 104 like just keep going



105 and I was like  
 106 ugh  
 107 okay  
 108 um  
 109 So I don't feel like  
 110 °super supported

### *Avoiding Available Resources*

The university, as mentioned previously, expressed a commitment to supporting equitable and diverse academic environments; however, it appears that undergraduates perceive a barrier to utilizing the resources made available. Such resources include teaching assistant and professor office hours which are intended, in principle, to provide a safe place for students to receive individualized assistance in learning and succeeding within their coursework. Five of the participants commented that they tend to avoid seeking help from graduate teaching assistants and faculty due to feelings of inadequacy that seems connected with the competitive nature of their majors. Preserving the image that little to no help is needed to meet expectations for their given major is deemed of greater importance than seeking assistance in difficult courses. SS, a woman with a Chicana/Latina background in the lower-division, pre-medical/pre-biology major combination, reflected that her biggest obstacle in her studies was attending office hours:

43 SS: I think  
 44 Like  
 45 At least for me  
 46 It's just  
 47 Like  
 48 I feel very shy about going to office hours  
 49 Like  
 50  
 51 I: okay  
 52  
 53 SS: I hardly don't go†  
 54  
 55 I: mhhh  
 56  
 57 SS: I know  
 58 like  
 59 that they  
 60 like  
 61 um  
 62 promote it

63 like  
 64 the teachers themselves do  
 65  
 66 I: yeah  
 67  
 68 SS: but  
 69 like  
 70 I still struggle to  
 71 go  
 72 'cause like  
 73 I know  
 74 like  
 75 you don't have to have  
 76 like  
 77 every single answer  
 78 but I just feel  
 79 like  
 80 oh like  
 81 if I go  
 82 like  
 83 what if it's something that I missed in the textbook or something like that  
 297 -----  
 298 It's just like  
 299 I feel like because I struggle in the class  
 300 It makes me not want to go because  
 301 I'm like  
 302  
 303 I: ohh okay  
 304  
 305 SS: I don't know what's going on†  
 306 So I'm like  
 I'd rather not go†

### *Gaining Contrastive Insights From the U-C Initiative*

Participants seem to view the U-C Initiative as a stark contrast to their undergraduate study experiences. Ten participants explicitly commented on their surprise about their unique positions (i.e., positioned as co-learners and co-researchers with faculty, graduate students, and participating youth) within their respective project, and how they did not expect to be equally engaged in learning and how much they learned from the youth. AC, a white woman in upper division with a neuroscience major and an education minor reflected how her perception of learning and education shifted:

65 my perception has changed  
 66 during the program  
 67 because I realized  
 68 you have to also  
 69 accept the fact that sometimes  
 70 you do not know everything †  
 71 and that sometimes they  
 72 /  
 73 because you know they have been in the program  
 74 a couple years  
 75 so they came  
 76 in with probably more knowledge  
 77 than I did

---

85 **I obviously**  
 86 did not know anything about the program at all  
 87 so  
 88 I  
 89 felt  
 90 I think it was easier  
 91 for me to fit into [the program] †  
 92 because the children  
 93 were so eager to learn  
 94 yet  
 95 teach you as well

---

105 so they were willing  
 106 to share that information so that you could all learn together  
 107 rather than  
 108 them trying to enforce  
 109 a knowledge-based situation on you  
 110 so  
 111 I think  
 112 having a different perception of what engaged  
 113 is in accepting that part  
 114 made it easier  
 115 to fit into the [New Leaf] program

### *Collaborative Learning as Opportunities for Mentorship*

The youth-based program also provided an opportunity for participants to engage in exchanges about the prospects of graduate school with graduate student coordinators and faculty. Nine of the twelve participants interviewed after some involvement as a facilitator commented that their participation in the U-C Initia-

tive resulted in a change in future career or graduate studies. When reflecting on how her experience in the New Leaf program impacted her desires to pursue graduate studies, MM—a Chicana/Latina woman in upper division studying Sociology—mentioned that she was imbued with a new confidence to apply to graduate school immediately after her undergraduate studies.

214 and had I  
 215 like been in [program]  
 216 probably like before I think I probably would have  
 217 like  
 218 not been so afraid  
 219 like  
 220 to apply to  
 221 to grad school  
 222  
 223 I: hm-mm (agreement)  
 224  
 225 MM: like directly after my undergrad

Participation in the U-C Initiative seemed to motivate undergraduate students to explore alternative educational and vocational pathways which resulted in insights into the importance of multi-level educational endeavors as well as disillusioned the out-of-reach nature of graduate studies.

### DISCUSSION

This qualitative study involved a critical analysis of expressed perspectives and experiences of 25 undergraduates who participated as facilitators, or what we have called throughout this study, university *co-learners*. Each of these undergraduate participants supported one of three projects associated with the University-Community Initiative (U-CI) that represented community partnerships with local outreach organizations in central California. All programs were designed to address the interests and values of participating youth, who were encouraged to share their goals, experiences, and curiosities to ensure program activities and projects were community-based.

Our initial purpose for this investigation was to learn about potential changes needed in recruiting and supporting undergraduates enrolled at the local university. We had hoped to learn about any hidden or unspoken challenges in supporting community-based projects and activities related to the U-CI and whether changes were needed to improve one's experience in such critical service-learning programs. Insights from scholarship related to critical service learning suggest that traditional models of service-learning courses and programs may actually do more harm than good by framing service as *charity* rather than collaborative learning opportunities to support real social transformation (Latta et al., 2017;

Patterson et al., 2017; Wade, 1997). We view the U-CI framework as a transformative effort in that undergraduates are trained and supported by lead faculty and graduate student coordinators to view their interactions with participating youth as an opportunity to learn and create with young co-learners.

Using CDA (Fairclough, 2001) as the guiding analytic frame, we sought to unpack such invisible constraints in order to improve the quality and benefits of the U-CI for undergraduates who serve as a key connection between the university and the community by engaging directly with young project participants associated with *Young STEMinists*, *Teen STEMinists*, and *New Leaf*. As such, we aimed to explore a type of institutional void—the known unknown of undergraduate perspectives about community-based service learning within institutions of higher education.

Following the analytic dimensions of describing (interview transcription and event mapping), interpreting (summarized responses with member checking), and explaining (distilling member checked themes to overarching insights), we arrived at two general unexpected findings—(a) the local research university may be perceived as an unsafe and discouraging space for many of its students and (b) the U-CI has provided an alternative vision that may inspire necessary changes in the university culture for creating inclusive academic spaces, particularly for our students of color and those who are first in their family to attend college. These findings will serve as the foundation for a subsequent systematic investigation that involves greater numbers of undergraduate participants and clarity in background information and experiences.

The limitations of this study include the challenge of capturing voices that are fully representative of various groups due to the relatively small number of participants. Given that background questions did not include whether a student was first in their family to attend college, we are unable to make any claims based on such potentially important criteria. Having all participants share their perspectives prior to and following their U-CI experience might have helped in clarifying whether such program experience is transformative in one's thinking about educational practices. Further, the non-responses of 17 participants to our invitation for member checking cannot be assumed as tacit agreement.

Limitations noted, we believe that our findings warrant attention to the ways in which undergraduate students are supported in academic spaces in higher education. Learning something new can be challenging, but the process through which one learns something new does not have to be. Educational scholars have long noted the need for students to have agency and flexibility in order to be engaged and motivated in their studies (e.g., Guthrie, 1996; Zepke & Leach, 2010). Findings from this and other related investigations we are leading suggest that institutions of higher education—even those demonstrating a committed investment to diversity and equity among their student population—continue to fall short in fostering students' sense of agency by allowing them to bring their knowledge, skills, interest, and ideas into the execution of learning activities (e.g. allowing students

to contribute and have a voice in the university-community programs' curriculum/activities design). Valuing students' contributions (and funds of knowledge) can provide a higher motivation for students (Cano & Arya, under review). The expressed pressure from our participating undergraduates to focus all curricular and extracurricular activities on one's major can be viewed as a kind of support for students to stay on track and degree requirements; it is possible that students may run the risk of spreading themselves too thin when engaging in service-learning opportunities. However, such oversight of course selections can be confining to students who find much of the university spaces unfamiliar. For example, nearly all participants in the New Leaf program (10) mentioned how they never knew that there was a greenhouse on campus that served as a learning and research facility; one would know about such facilities as it relates to their major or course work. Moreover, the perceived competitive nature of many courses, particularly those viewed as "weeder courses" designed to reduce the number of eligible students to pursue a particular major, may have the unfortunate effect of creating distance among the undergraduate students, hence reducing a sense of community among peers.

The COVID-19 pandemic coupled with the sociopolitical revolution that we are experiencing brings the unavoidable, difficult truth that we must face as educators—we are challenged more than ever in fostering a sense of community and safety in an academic system that was developed within and among systems founded and shaped by racist ideologies (Baldwin, 1972; Glaude, 2020). Like many institutions across the U.S. and elsewhere, the local research university associated with this study is making explicit efforts to recruit and support students who have been traditionally underrepresented in higher education and highly regarded professional spaces like those associated with STEM. Based on the expressed perspectives and experiences of our undergraduate participants, such efforts may be running short of their goals.

Our findings began with excerpted responses from our member-checking efforts, which seem to reflect two seemingly contradictory points of view. FB (Latinx man majoring in environmental studies) presented a view that the university is not a safe space for everyone when seeking support and that such support is not as accessible as intended. On the other hand, SB (Pacific Islander woman majoring in biology) expressed the sentiment that one merely needs to find the "right mentor" and that students can get support if they really want it. On closer reflection, SB seems to have a couple of assumptions about the ways of navigating academic life in higher education. She assumes the right to receive mentoring support and that teaching assistants are to serve students so that they can succeed. Many students who are first in their families to attend college may not have such a sense of entitlement and instead view the university space as a type of stage on which one must perform perfectly. The U-CI initiative seemed to provide a new vision, hence a new space for learning that does not require perfect performance.

Such a vision was observed in a response from EE, a white woman in upper division courses and majoring in environmental studies:

- 173 EE: and [the New Leaf project]  
 174 it's such a  
 175 like  
 176 it's not a **pressure cooker** environment where you feel like you have to perform  
 177 **perfectly**  
 178  
 179 I: hm-mm (agreement)  
 180  
 181 EE: but it's a **relaxed**  
 182 like inclusive environment where you feel like you're able to make mistakes because you  
 183 are able to learn from those mistakes  
 184  
 185 I: hm-mm (agreement)  
 186  
 187 EE: so  
 188 taking that away  
 189 just the importance of the community style  
 190 engagement project  
 191 um  
 192 is definitely the kind of thing I want to be involved in for my life

In his most recent book titled *Begin Again: James Baldwin's America and Its Urgent Lessons for Our Own*, Glaude (2020) clarifies that the only way to combat racism and its debilitating impact on social justice, equity, and academic progress for all students is to create what he calls a "community of love" that he describes as any space, with any group of people who "make us laugh with full-belly laughs and those without whom we cannot imagine living . . . Here genuine mutuality serves as the basis for a broader, more collective expression of mutuality necessary for a vibrant democracy . . . we must actively cultivate communities of love that allow us to imagine different ways of being together" (p. 142). Glaude's description seems to echo the notion of "homeplace" first described by hooks (1992) and taken up by activist and educator Love (2019) who describes such a space as where Black and other people of color who face daily marginalization "truly matter to each other, where souls are nurtured, comforted, and fed" (p. 63). We observed this notion of mutuality and nurturing from EB, a Chicana/Latinx man in upper division courses majoring in environmental studies and minoring in education, when recalling an experience in the New Leaf project:

- 89 EB: We're not there just to be there  
 90 y'know  
 91 we're not just there that-to  
 92 because we're getting u-units  
 93 we're letting [young co-learners] know  
 94 like no we're here because we want to be here  
 95 with you guys  
 96  
 97 I: yeah  
 248 EB: I think it was—  
 249 we had to just let  
 250 like with the—  
 251 even with the other facilitators y'know  
 252 like first  
 253 I think that it was really important that the other facilitators  
 254 we built our relationship  
 255 um to be able to clos—  
 256 to be closer to one another  
 257 y'know like none of us knew beforehand  
 258 um  
 259 but we were just starting to talk about classes  
 260 talking about  
 261 like y'know  
 262 our future plans  
 263 talking about  
 264 what we like to do y'know  
 265 um  
 266 like me and (UG peer) were talking about festivals  
 267 and like we were able to like  
 268 talk about these kinds of things  
 269 and we were like  
 270 y'know  
 271 relate with one another

For EB, the love for young co-learners and peers begins with the mutuality project engagement and shared lived experiences in academic spaces. Later in the interview conversation, he includes a third source of mutuality—shared funds of knowledge—with participating youth:

- 286 EB: I think it was (youth) she said hey can I borrow your phone  
 287 I said for what  
 288 she said it was for YouTube  
 289 and then she put like a Mexican song that I know



290 and I was like oh I love this song  
 291 and then the kids were all like oh my god you know this song †  
 292 and then we started playing  
 293 like similar songs  
 294 um  
 295 and them realizing y'know like  
 296 I listen to the same type of Mexican music that they do

306 I'm no different than them  
 307 they're no different than me  
 308 um  
 309 and  
 310 like we just like the same thing  
 311 I'm here to learn from them just as much as they are here to learn from me

EB's recollection can be viewed as an example of a community of love in the making; the mutuality of shared cultural values and experiences offer an opportunity to connect and build a sense of belonging that in turn can demystify for younger peers of what is valued in academic/program spaces associated with higher education. The interaction outlined in EB's retelling highlights the ways in which the funds of knowledge of community youth (i.e., the lived experiences and cultural wealth of linguistic and social knowledge) is legitimized as key program practices within the U-CI. Hence, the community of love fostered across these youth-based programs seemed to cultivate a space of acceptance and belonging, thus elevating the program to be more than just a training opportunity and additional resume item for undergraduates. JS, a white man in upper division majoring in history and minoring in education relays a previous interaction with a participating youth in New Leaf:

553 JS: um//  
 554 but when I actually went  
 555 to go look at it  
 556 and I saw them  
 557 writing  
 558 and I think you remember this too  
 559 they started writing phrases  
 560 about nature  
 561 but just also  
 562 like inspirational phrases  
 563 some in English  
 564 and then some in Spanish  
 565 and many of them Spanish was their first language  
 566 um  
 567 [student] I think they added Vietnamese  
 568 and

569 they started  
 570 just asking people  
 571 if they knew any languages  
 572 I think  
 573 I remember  
 574 they came to you  
 575 to write something in Korean  
 576 right† (asking for agreement)  
 577 and it wasn't even like  
 578 we weren't even able to  
 579 read it  
 580 you want  
 581 they wanted you  
 582 to write it in your native language  
 583 right†  
 584 and I don't know  
 585 just being able to look  
 586 at a blank pallet  
 587 and come up with  
 588 I think  
 589 a beautiful piece of art is what it was  
 -----  
 598 and I thought  
 599 they were wasting their time originally  
 600 with this pallet  
 601 but  
 602 I was completely wrong  
 603 and I think they made something  
 604 so much better  
 605 than a bench  
 606 and so much more meaningful  
 607 than a bench

The responses from participants about their undergraduate experiences seem to reflect a shared understanding that U-CI participants from all levels (youth, undergraduates, graduate students, and faculty) are positioned as co-learners, co-researchers, and co-authors/creators. Rather than focusing on possible changes in such community-based programming, we now aim to help our research university in their efforts to foster inclusive academic spaces that allow for flexible exploration of possible interests and opportunities. We also aim to share our findings with university leadership who can help transform the current culture of learning from a "pressure cooker environment" to a community of love that grows together and views university students as more than statistical matriculation (Faulkner et al., 2021). Why not replace "weeder courses" with a deliberately non-graded term of free exploration with mentorship support from upper division students who could serve as cultural guides? Why not make it a degree requirement to include the practice of creating something new for the surrounding community?

Attention to the lived experiences of undergraduate students as they navigate higher education spaces is crucial for understanding where we are in terms of providing a socially just, supportive environment for all students. This is the way into the Institutional Void of the student experience, one that cannot be known from test scores and letter grades. Through a critical lens, we were able to see what is often invisible to university leadership and faculty—the isolation, anxiety, and power imbalances affecting many undergraduates, particularly our students of color.

Through the eyes of our undergraduate participants, we have begun to see the work that many universities face in order to accomplish newly stated or reaffirmed goals of fostering diversity, equity and inclusion within their institutional spaces. This study highlighted key ways that undergraduate voices are silenced through the inequitable and often competitive experiences of undergraduate learning that are made worse by cut-throat *weeder courses* designed to set students apart, hence setting minoritized groups up for discouragement and failure. As a result of this competitive and high-pressure environment, even resources intended to support students, such as office hours, are viewed as inaccessible or non-desirable due to the weakness associated with seeking additional academic support. Hence, declarations of inclusivity and equity are essential but insufficient for making the changes needed in order for diverse university populations to thrive. University leaders and faculty would do well by critically exploring the practices used to support students within particular programs and listening to students who can share their experiences and offer guidance for reimagining the university community that supports everyone.

This study provided a vision of higher education that positions community, undergraduate students, graduate students, and faculty as co-learners and collaborators in constructing knowledge. Through the U-CI, we are given hope that a better future for higher education that values the voices and knowledge of a diverse student population is possible. By positioning undergraduate students as co-learners with community youth, graduate students, and lead faculty, our participants experienced a deeper engagement in learning and were empowered to pursue skills and vocations they had previously not considered. As higher education institutions continue to work towards creating equitable learning environments that serve diverse student populations, we hope to inspire the development of a new vision of undergraduate learning, one that values everyone as co-learners and co-constructors of knowledge. We believe that such an effort is essential in fostering the equitable world that is currently struggling to be born.

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## APPENDIX A. INTERVIEW QUESTIONS FOR EACH OF THE THREE PROJECTS

### A.1. Questions Posed to Participants Associated With Both STEMInists Projects

#### Part 1: Background

1. What is your name?
2. What year of your program are you in?
3. What is your major?
4. Was this the major that you started your UCSB experience with?
5. Why did you choose to study this major?
6. Have you encountered any obstacles in your program? If so, what stands out as the biggest obstacle?
7. Do you feel supported within your major to succeed? Why or why not?
8. Do you feel you have access the same opportunities to succeed within your major as other students?

#### Part 2: Experiences as a Facilitator

1. What previous experiences in STEM do you think would help in your role as a facilitator? In what ways do you imagine that those experiences can be applied?
2. Did you participate in a program/science camp that promoted hands-on learning and scientific inquiry in elementary or middle school? How has that experience (or lack thereof) that influenced your decision to join the project?
3. What are the possible benefits of being exposed to both STEM and non-STEM classes and activities?
4. What other extracurricular activities outside of have you participated in the past or are currently participating in?

#### Part 3: Project-specific questions

1. Have you participated in a program like before as a facilitator?
2. If yes, can you describe the program and what you got out of it?
3. If no, was there a reason why?
4. What part of the program are you looking forward to the most? The least?
5. What do you hope to gain from being a facilitator?
6. What qualities do you think make a good facilitator? How do you plan to implement these in the program?
7. Is there anything else you would like to add about anything we have or have not talked about?

## A.2. Questions Posed to Participants Associated With New LEAF

1. Tell me what are some of your thoughts from your experiences in the program?
2. What do you think it means to be engaged as an undergraduate in this program? How different you think that understanding is from before being part of the program?
3. How did you feel about having the choice and freedom to design an activity for the kids?
4. What would you consider to be some of your main contributions to the program?
5. How did you see yourself connected to the program?
6. How could you describe your participation as a facilitator and as a learner in the following activities?
  - a. Poetry
  - b. Campus exploration/learning about plants and the environment
  - c. Painting signs for the garden
  - d. Planting edible plants
  - e. Plants observations/Digital diary (with iPads)
  - f. Doing art to decorate the edible plants' bed (stakes with QR codes)
  - g. Making salad from the garden
  - h. Making smoothies
  - i. Greenhouse visit
  - j. Watershed visit
  - k. Worm/compost bins
  - l. Garden bed moving (addressing the gopher problem)
7. What do you think you and other facilitators achieved as being part of the program?

## APPENDIX B. TRANSCRIPTION KEY

Transcriptions featured aligned with *how* the assertions were uttered, following the general structure of message units according to microethnographic transcription methods (Bloome et al., 2004). Due to the fact that all exchanges were audio recorded hence precluding observations of non-verbalized contextualization cues from gestures, non-word productions such as laughter are indicated along with the associated message unit within the same column.

Key:

- [nonverbal description] are information related to contextualization cues.
- (name) indicates general description used in place of identifiable information.
- / indicates pauses are indicated beyond 1–2 seconds.
- **Bold text indicates** phatic displays resulting in a rise in volume.
- ↑ indicates rising tone (marking potential uncertainty or questioning).
- hmm; um (discursive filler, often associated with processing an utterance).
- ° indicates shift in volume; quiet talking or whispering.
- (din.) indicates utterance that is unintelligible due to audio quality
- *italics* indicates a change in voice when relaying past events.