

ORIGINAL ARTICLE

Lessons learned from local vacant land management organizations for engaging youth in greening

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Abstract

Youth living in areas with high concentrations of vacant properties may be at particular risk for poor health outcomes given the associations between deteriorated vacant properties, poor mental health, and community violence. Vacant lot greening has emerged as a key strategy to mitigate the harms of deteriorated properties. Youth engagement in greening has documented benefits for youth, yet few organizations responsible for managing vacant properties currently engage youth. Further, few researchers have examined the best practices that organizations can employ to effectively engage youth in greening programs. The purpose of this study was to understand how high functioning vacant land management organizations with robust youth engagement capabilities engage youth in their greening work. Based on in-depth interviews with staff from vacant land management organizations, we explored three research questions: (1) what are their identified best practices for youth engagement?; (2) what are the major challenges that impede their youth engagement work?; (3) what solutions are these organizations employing to address these challenges? Findings from this study emphasize the important themes of engaging youth in vacant lot greening in areas of planning, leadership, and decision-making. Youth engagement in vacant lot greening may be a key mechanism for preventing violence through cultivating youth empowerment and development.

KEYWORDS

greening, vacant lots, violence prevention, youth engagement

Highlights

- Youth engagement in greening may be a key mechanism for preventing violence.
- Valuing of youth driven spaces and cultivating youth leadership is supported by empowerment theory.
- Examples of how organizations engage youth to address concentrated vacancy and neighborhood decline are discussed.

INTRODUCTION

Youth civic engagement is a positive avenue by which adolescents can improve their communities and address social and environmental problems that affect their lives

and their futures. Engagement in community action is an effective strategy for positive youth development (PYD) because it builds youth competencies, confidence, and sense of belonging; shapes values and norms, and supports positive interactions with pro-social peers and

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adults (Damon, 2004; Fagan & Catalano, 2015; Lerner et al., 2005; Zeldin, 2004). Benefits of community involvement for youth range from enhanced prosocial development and self-efficacy to civic identity development (Catalano et al., 2004; Evans, 2007; Yates & Youniss, 1998; Zimmerman et al., 2018). Among youth, structured civic engagement in PYD programs can further reduce antisocial behavior such as aggression and delinquency (Zimmerman et al., 2018), while increasing connectedness to their communities and commitment to community change (Evans, 2007; Zeldin, 2004).

Civic engagement of youth living in high-poverty communities is particularly important given the socioeconomic challenges and health disparities these communities experience (Littenberg-Tobias & Cohen, 2016; Ozer, 2017; Roberts et al., 2020; Watts & Flanagan, 2007). In particular, community violence is a worsening problem in cities that have suffered from racist policies (e.g., redlining), racial segregation, and related economic disinvestment (Jacoby et al., 2018; Knopov et al., 2019; Krieger et al., 2017). Firearm-related injuries recently surpassed motor vehicle crashes as the leading cause of death for children and adolescents in the United States (Goldstick et al., 2022). In 2019, almost 60% of deaths among youth aged 10–24 were attributable to interpersonal violence (WISQARS Web-based Injury Statistics Query and Reporting System, 2019). The issue escalated during the COVID-19 pandemic, with a nearly 30% increase in gun-related deaths among youth aged <20 years (Goldstick et al., 2022). Community violence disproportionately affects Black and brown communities, and these racial disparities widened during COVID-19 (Centers for Disease Control and Prevention, 2022).

Civic engagement of youth who are most affected by community disinvestment is one potential strategy for preventing youth violence and other health disparities. In particular, involving youth in planning and implementing interventions to improve neighborhood conditions may support PYD outcomes and reduce violence (Cunningham et al., 2019; Ngo et al., 2019; Zimmerman et al., 2018). Engagement in community change efforts has been found to significantly reduce violent behavior among youth and community violence overall (Gong et al., 2022; Reischl et al., 2011; Zimmerman et al., 2018). Youth who feel connected to their community experience lower rates of emotional distress, engage in less violent behavior, and demonstrate more altruistic behaviors towards others (Reischl et al., 2005, 2011; Zimmerman et al., 2018). Yet, marginalized youth are often left out of solutions to create safer and more connected communities (Littenberg-Tobias & Cohen, 2016). This is often due to a lack of access to prevention programs that engage youth in civic learning and improving their neighborhood environments (Evans, 2007; Jacobsen & Linkow, 2012; Roberts et al., 2020; Rogers & Nandwani, 2018).

Addressing vacant properties to promote PYD and reduce violence

Communities that have experienced decades of disinvestment often contend with a high volume of vacant and unmaintained land (Bowman & Pagano, 2004; Branas et al., 2013; Garvin et al., 2012). Vacant lots collect trash and debris and are host to unmanaged weeds and illicit activities (Garvin et al., 2012). Living amongst these spaces provokes fear, anxiety, and depression for nearby neighbors (Burt et al., 2021; Garvin et al., 2012). Vacant lots decrease nearby property values and contribute to a downward spiral of neighborhood and socioeconomic conditions (Accordino & Johnson, 2000; Heckert & Mennis, 2012). Youth living in areas with high concentrations of vacant properties may be at particular risk for poor health outcomes given the documented associations between deteriorated vacant properties, poor mental health, and community violence (Branas et al., 2013; Burt et al., 2021; South et al., 2018; Spelman, 1993).

Vacant lot greening has emerged as a key strategy to mitigate the harms of deteriorated, vacant properties and improve public health outcomes in disinvested communities. Greening vacant lots by removing trash, mowing them, and enhancing them with landscaping or gardens, has been shown to reduce crime and violence (Branas et al., 2018; Heinze et al., 2018; Kondo et al., 2016), improve perceptions of neighborhood safety (Branas et al., 2018; Burt et al., 2021), and promote mental health (South et al., 2015, 2018). Youth engagement in greening programs may enhance the positive effects of these programs for communities and participating youth (Roberts et al., 2020). For example, greening programs that engaged youth in installing community gardens or pop-up parks on vacant lots were associated with steeper reductions in community violence than lots landscaped by professionals (Gong et al., 2022; Kondo et al., 2016).

Youth who participate in greening programs such as urban agriculture report gaining practical knowledge (e.g., food production, lawn care), developing social and emotional skills (e.g., teamwork, decision-making), and having greater opportunities to learn about and contribute to their communities (Blair, 2009; Rogers & Nandwani, 2018; Rogers et al., 2020; Russ & Gaus, 2021). Participating in greening programs can also have physical health benefits, for example, by reducing stress, (South et al., 2015) promoting access to healthy foods, and increasing social connectedness (Beavers et al., 2020, 2022). When greening programs are appropriately structured, they provide safe settings for youth to make meaningful connections with peers and mentors (Suto et al., 2021) and to engage in interdependent group learning and collaboration (Spencer et al., 2018).

Despite the documented benefits of youth engagement in greening, few organizations responsible for

managing and greening vacant land currently engage youth in their work. In a national survey of organizations engaged in greening vacant lots, just over half (51%) of organizations reported engaging youth (O'Keefe et al., 2020). Even fewer organizations engaged youth in roles that emphasized leadership, autonomy, and critical thinking skills. Among organizations that engaged youth, the large majority (76%) involved youth in physical maintenance of vacant lots, but few involved youth in positions that included planning (17%) or leadership and decision-making (5%). Limited funding, staff time, and staff expertise were the most commonly cited barriers to involving youth (O'Keefe et al., 2020). These findings suggest that youth may be underutilized in the greening process, and particularly underutilized in leadership and decision-making roles that help youth develop critical thinking skills and contribute to their empowerment.

Facilitating youth engagement in community change for PYD

Few researchers have examined the best practices that organizations can employ to effectively engage youth in greening programs for PYD, in the face of resource constraints. Some exceptions are case studies of youth engagement in urban agriculture programs. Rogers & Nandwani (2018) emphasized the importance of creating opportunities for continuous, developmentally appropriate engagement in school gardens across grade-levels and school years. Roberts et al. (2020) highlighted the need to balance adult support with opportunities for youth-directed learning and leadership, particularly for older youth. These findings align with PYD and empowerment theories, which suggest that achieving prosocial outcomes and youth empowerment depends on adults establishing conditions for youth to thrive (Eccles & Gootman, 2002; Lerner et al., 2005; Zimmerman, 2000).

Adults play an important role in establishing conditions for youth to thrive by ensuring foundational physical and psychological safety, providing developmentally appropriate program offerings, and establishing prosocial norms (Eccles & Gootman, 2002). Effective PYD programs create avenues for youth to build social and emotional skills, support consistent access to caring adults, and offer opportunities for youth to contribute to their communities (Catalano et al., 2004; Eccles & Gootman, 2002; Fagan & Catalano, 2015; Lerner et al., 2005; Shek et al., 2019). Empowerment theory (Zimmerman, 2000) further emphasizes the roles of adults in facilitating youth engagement in the community change process (Franzen et al., 2009; Zimmerman, 2000). Involvement in community improvement helps youth develop confidence and skills to become effective change agents, think critically about their communities, work together to improve neighborhoods, and take action to implement

their plans (Fagan & Catalano, 2015; Lerner et al., 2005; Ozer, 2017; Zimmerman et al., 2018). Programs that are empowering create the scaffolding for youth voice from the early stages of planning to action, thereby helping youth develop a sense of agency to change the world, engage in decision-making, and practice life skills in real world contexts (Zimmerman, 2000; Zimmerman et al., 2018).

Balancing adult support with sufficient opportunities for youth voice and leadership is particularly essential given adolescents' growing need for autonomy (Anyon et al., 2018; Ozer, 2017; Travis and Leech, 2014). By sharing power and supporting youth voice and influence, adults can validate youth contributions, and help them to internalize a vision of themselves as leaders (Wong et al., 2010). A collaborative, intergenerational partnership approach to community change work may be particularly important for establishing trusting relationships and advancing PYD among low-income youth and youth of Color, as these youth may have had persistent negative experiences (e.g., harassment, discrimination) with authority figures that can undermine trust in adults (Anyon et al., 2018; Travis and Leech, 2014). Applied to vacant lot greening programs, an empowerment-based approach suggests the need for adults to create supportive contexts where youth can plan what to do with the vacant property, identify and mobilize the necessary resources, and connect with positive mentors who can support youth in implementing their community change plans (Gardner et al., 2008; Roberts et al., 2020; Rogers et al., 2020). Engaging and empowering youth helps them learn to make meaningful contributions to solving community problems, such as deteriorated vacant property, and to become active agents in their own development. Still, there is a need to further understand how organizations can best support youth engagement in greening given the underutilization of youth in greening programs and the potential benefits of their involvement for advancing PYD and reducing violence in disinvested communities.

THE PRESENT STUDY

We conducted this study as part of a 5-year, Centers for Disease Control funded research center examining the effects of community-engaged vacant lot greening on youth and community violence. The center conducted an implementation study to understand the processes required to implement youth- and community-engaged greening. All procedures for this study were reviewed and approved by the University of Michigan Institutional Review Board. Vacant land management organizations that participated in this study were selected from a pool of 119 organizations who completed the National Survey on Greening in 2019 (O'Keefe et al., 2020). For detailed information on survey methods and sampling see Rupp et al. (2022).

Vacant land management organizations across the United States are experiencing resource and capacity constraints that hinder their capacity to engage youth (O'Keefe et al., 2020). Yet a select group of vacant land management organizations are managing to support youth involvement in their programming. This study seeks to document the strategies that high functioning vacant land management organizations with active youth engagement employed to engage youth efficiently and effectively in their programs. We addressed three research questions: (1) what are the best practices for youth engagement among high-functioning greening organizations?; (2) what are the major challenges that impede youth engagement among these organizations; and (3) what solutions do these organizations employ to address these challenges?

METHODS

Participants and recruitment

We recruited organizations to participate in this study from a sample of organizations who responded to a national survey of greening organizations from 27 states ($N = 68$; O'Keefe et al., 2020; Rupp et al., 2022). The focus of the survey was understanding the factors that contribute to organizational functioning. Eligibility for inclusion in this study was determined based on an overall organizational functioning score and the level of youth engaged in their greening work. The functioning score was an index of an organization's capacity in terms of networking, programming, and accessing resources—three areas that are critical for long-term organizational success and sustainability (Frumkin & Keating, 2011; Glickman & Servon, 1998; Wright & Reames, 2020). Organizations that were at or above the 70th percentile for organizational functioning (range: -3.92 to 8.9 , $SD: 2.8$) and reported engaging at least 40 youth (ages 10–24) in their vacant property work over the past fiscal year were eligible for inclusion in this qualitative study (Rupp et al., 2022). Based on these criteria, nine organizations were eligible for inclusion. We worked in partnership with the Center for Community Progress, a trusted technical assistance leader in the vacant property management field, to invite eligible organizations to participate in the study. Of the eligible organizations, six (67%) agreed to participate. We interviewed executive directors, program managers, and staff who were knowledgeable about youth engagement in these organizations. In total, we conducted 7 interviews with a total of 10 individuals who represented 6 organizations (see Table 1).

Data collection

Through semistructured, in-depth interviews, we gathered information about the local vacant land context as

TABLE 1 Operational characteristics of greening organizations with exemplary youth engagement.

Organization	Organization type	Year started greening	Total budget	Location	Service area	# FTE	# Vacant lots in service area	# of vacant lots owned	# of youth engaged
1	Nonprofit	2001	\$750,000	Midwest	Multiple counties	5	1000	0	100
2	Nonprofit	2017	\$592,700	Midwest	Urban watershed (parts of cities and counties)	5	18,000	0	300
3	Nonprofit	2007	\$1,200,000	Northeast	County	10	61,000	0	100
4	Land bank authority	Not reported	\$2,000,000	Midwest	County	20	1000	700	50
5	Nonprofit	2014	\$60,000	Southeast	Part of a city	0	30	0	40
6	Nonprofit	2016	\$403,500	Midwest	Multiple counties	4	Not reported	0	50

well as facilitators and challenges to engaging youth. The interview guide focused on understanding the strategies, challenges, and solutions to engage youth in greening work. Three individuals with graduate-level training in qualitative research who were knowledgeable about vacant lot greening conducted the interviews and subsequently participated in data cleaning and analysis. Interviews lasted between 45 and 60 min and were video- and audio recorded via online conferencing software with participants' consent. Interviews were then transcribed verbatim. Individuals were offered a free conference registration to Community Progress' Annual Conference to thank them for their time.

Analysis

The research team conducted three phases of analysis utilizing a combined deductive and inductive approach (Braun & Clarke, 2006; Crabtree & Miller, 1999). This approach was applied to support focused attention to research questions of interest (e.g., engagement strategies, challenges, and solutions), while allowing important concepts described by participants to emerge in the data. In the first phase of analysis, we developed a deductive codebook that reflected key constructs related to the research questions. This codebook included definitions of codes and inclusion/exclusion criteria to define code boundaries (see Table 2). The interview protocol included questions designed to gather in-depth information about these key constructs of interest (i.e., engagement strategies, challenges, solutions). To assess factors that facilitated or impeded youth engagement, we also included “facilitators” and “challenges” codes a priori as part of the deductive codebook. Next, we used inductive, line-by-line coding (Charmaz, 2014) to elaborate on the deductive codes that were developed based on our research questions. For example, “limiting adult control,” and “mentoring” were added inductively as subcodes of the deductive code “engagement strategies” to reflect the types of youth engagement approaches employed by organizations interviewed. Inductive coding occurred iteratively; as new interviews were coded additional inductive codes were added to describe novel constructs in the data. Once the research team agreed upon the codebook, it was then applied to the full transcripts that were divided into segments to reflect complete thoughts (Fusch & Ness, 2015). The two coders met and used consensus discussions to resolve divergence in codes applied to data segments (Richards & Hemphill, 2017). When discrepancies in coding decisions persisted, the two coders met with the research project manager to determine the final codes that most appropriately described the data segments in question. Codes were only applied if all three parties were in agreement that a construct was reflected in a data segment. Finally, the principal investigator checked

coding decisions to assess the face validity of the codes applied with their associated construct definitions.

Finally, we conducted our thematic analysis which involved searching for themes that describe the phenomena of interest (Fereday & Muir-Cochrane, 2006). This process often involves rereading the data to recognize patterns where themes become categories for analysis (Fereday & Muir-Cochrane, 2006). During thematic analysis, we focused on reported youth engagement strategies, challenges, and solutions. The investigator, project manager, and coders began thematic analysis with group discussions about the most salient themes for each of these constructs. For example, to guide our understanding of salient practices that facilitated youth engagement, we used the co-occurrence matrix tool in Dedoose (Dedoose, 2018) (i.e., axial coding) to identify and extract all text segments in which “engagement strategies” was coded with “facilitators.” We used the same tool to identify all text segments in which “youth engagement” was coded with “challenges” to understand salient barriers. We noted both the number of mentions of each theme (e.g., the number of times the strategy “limiting adult control” was coded with “facilitators”) and how widely endorsed the theme was across the sample to assess relevance and salience of the theme.

FINDINGS

Participants from each of the six organizations in this study noted youth engagement as a crucial component of their programming. Table 3 outlines the number of participants and organizations who endorsed each theme.

Engagement strategies

Participants endorsed several strategies that their organizations use to engage youth in vacant lot greening. The tactics include making spaces continuously accessible, fun and enjoyable, and youth-driven. Youth-driven spaces are places where youth voice is centered in decision-making and cultivated by valuing youth input, allowing youth to be their authentic selves, and limiting adult control. Further, mentorship was discussed as an additional tactic for facilitating youth engagement and development.

Accessibility and continuity

Participants discussed the importance of providing programming that is accessible to any skill level or age, and that is continuously available regardless of location. Accessible programming provides multiple avenues for engagement and addresses different needs, skills, or limitations. As one participant notes:

TABLE 2 Deductive and inductive codebook.

Code	Code definition
Youth engagement	Issues pertaining to engaging youth in greening programs <i>Includes:</i> Any mention of involving youth in greening programs or greening work at any level
Facilitators	Factors or strategies that help an organization facilitate their mission and goals, including youth engagement in their work <i>Includes:</i> For youth engagement facilitators, see <i>Engagement strategies</i>
Engagement strategies	Descriptions of the tactics or strategies an organization used to engage youth in their work <i>Includes:</i> See <i>accessibility and continuity</i> , <i>fun and enjoyment</i> , <i>youth-driven spaces</i> , <i>mentorship</i>
Accessibility and continuity	Strategies to make youth participation consistent and continuously available <i>Includes:</i> Offering multiple avenues to participate that are inclusive of different interests, skills, needs, and limitations; providing regular programming or drop-in hours when youth are available; making participation geographically accessible
Fun and enjoyment	Strategies to make greening engaging, fun, and enjoyable for the youth <i>Includes:</i> Weaving enjoyment into learning; providing opportunities for play; incorporating artistic expression; avoiding programming that is overly structured or didactic
Youth-driven spaces	Strategies to make greening programs youth-friendly and youth-led <i>Includes:</i> See <i>youth input</i> , <i>being themselves</i> , <i>limiting adult influence</i>
Youth input	Strategies to support youth leadership and youth-driven programming <i>Includes:</i> Providing opportunities for youth to lead or direct programming; providing opportunities for youth to advise organizations (e.g., soliciting input, serving on boards), prioritizing youth voice in decision-making
Being themselves	Strategies that allow youth to be themselves <i>Includes:</i> Creating spaces for youth to be their authentic selves
Limiting adult control	Strategies to limit adult control over youth engagement in greening <i>Includes:</i> Setting boundaries with parents and staff; training staff and adults to provide guidance and support rather than control; prioritizing youth agency; creating spatial separation from parents/adults (i.e., children's only areas)
Mentorship	Activities to listen to and support children and encourage their positive youth development <i>Includes:</i> Engaging adults or older peers to provide guidance, support, and education to younger youth
Challenges	Obstacles that impede or hinder an organization's ability to achieve their mission and goals, including youth engagement <i>Includes:</i> For youth engagement challenges, see <i>age</i> , <i>retention and turnover</i> , <i>capacity</i>
Age	Situations when youth participants' age limits their capacity to engage in programming <i>Includes:</i> Safety considerations related to age; inability to operate tools required for the work; limited attention span
Retention and turnover	Challenges with retaining staff and youth integral to youth programming <i>Includes:</i> Turnover of leaders including teachers and staff who championed or were integral to delivering youth programming; youth graduating or aging out of programming
Capacity	Limited organizational resources or capacity to engage youth in programming <i>Includes:</i> Limited funding to support youth engagement; limited dedicated staff time to supervise and involve youth
Solutions	Descriptions of how an organization navigated/addressed a challenge <i>Includes:</i> See <i>developmentally appropriate programming</i> , <i>sustainability</i> , <i>leveraging partnerships</i>

TABLE 2 (Continued)

Code	Code definition
Developmentally appropriate programming	Crafting youth programming around the interests and capabilities of an age group <i>Includes:</i> Building programming with the attention span, capabilities, and interests of different age groups in mind (e.g., planning shorter, simpler, and more hands-on lessons for younger children)
Sustainability	Strategies to maintain interest and engagement in youth greening programming over time <i>Includes:</i> Continuously adapting programming to engage new cohorts of staff, teachers, and youth who engage with greening programs
Leveraging partnerships	Partnerships that are specifically used to advance youth engagement efforts and programming <i>Includes:</i> Partnerships with schools, churches, or other community programs

Note: Deductive codes are in bold.

TABLE 3 Level of endorsement for themes by participant and organization.

Theme	# of participants	# of organizations
Engagement strategies		
Accessibility and continuity	8	4
Fun and enjoyment	8	4
Youth driven spaces	8	5
Youth input	8	5
Being themselves	8	5
Limiting adult influence	7	3
Mentorship	7	4
Challenges and solutions		
Age	9	5
Creating developmentally appropriate programming	3	3
Retention and turnover	10	6
Sustainability	10	6
Capacity	10	6
Leveraging partnerships	10	6

We want to include everybody so there was always a job for anybody and everybody (...) We were trying really hard to make sure that everybody had an important job and understood why it was important, whether they were allowed to kill invasives [plants] or dig or shovel mulch or count the flowers or chase a bee or [go] into the depths of the swamp to photograph something.

Creating a wide variety of tasks that youth could be involved in was important for youth engagement and inclusion. Further, participants emphasized that regardless of what job a youth took on, they were taught “that job was just as important as what the others were doing.”

Additionally, participants endorsed accessibility in terms of ensuring youth have continuous access to greening in their own communities:

The children no longer have to leave the community and jump on a bus to go to the country to visit a farm for one day (...) [previously] there was no continuity, they [would] come back into an area where there is no growing food, no growing capabilities at the school and they don't even have a plant at home. So, we are changing that narrative.

Repurposing vacant lots in urban neighborhoods and cities where youth live is important for increasing consistent access to green spaces at school and at home, farming or gardening, and opportunities to cultivate their communities.

Fun and enjoyment

Participants noted the importance of creating spaces and providing activities that are fun and enjoyable for youth. For example, participants discussed how allowing youth to explore a site and be in nature allowed them to relax and enjoy themselves. Further, this youth-led exploration of nature facilitated youths' excitement and engagement:

Then (...) a few weeks later, we did planting with them. And it was interesting to see how they felt about planting, like they were so engaged during the planting, and we had

flowers that were blooming [so] that they could really see what was being planted.

Additionally, one participant described scheduling a variety of activities or craft projects like “painting rocks in the garden beds or making bird houses.” This participant discussed how engaging youth in fun activities that accommodated all age groups created “natural play spaces that led us to think more deeply about access to green space from a youth perspective.” As this participant alluded to, delivering fun and enjoyable programming was not only beneficial for the youth, but also shaped the organization's perspective on how youth access and participate in green spaces. Another participant discussed providing youth with play spaces and fun activities as an opportunity to learn outside of a standardized curriculum:

I scrapped all the programming...no way you can give me a curriculum and ask me to get to the curriculum in eight weeks (...) I'm going to have snowball machines and ice cream every day. And I'm going to play slip and slide [and have] a very good above ground pool. But also, I'm going to plant a tree a day and I'm going to transplant a couple of plants and I'm going to water the plants (...) We're going to have fun, and, in the process, they tell me what they want to learn.

Youth-driven spaces

Participants emphasized the importance of creating youth driven spaces that center youth voices and decision-making as a means of facilitating their engagement in greening. These are spaces where youth know they can show up as themselves and feel that their input matters. Participants noted that it was important to limit adult influence in these spaces to allow youth voice to be heard.

Youth input

Participants discussed ways in which they value youth input and leadership. Participants also spoke about how their organizations develop programming that is youth-driven by soliciting youth input, allowing youth to direct project ideas, or having youth advise the organization. One participant described how their organization encourages and supports youth input. During a brainstorming session, youth were asked to map the positive and negative aspects of their community and then identify potential solutions.

Youth identified things they saw wrong with the community, and then they wrote things

that they could change in the community (...) and then they said things that they could do to fix these things; [such as] build a relationship and hold people accountable, fix houses, (...) then they said [there is a need for] better services, respect from the police.

This brainstorming session led to the development of a youth-led project to address vacant properties within their neighborhood:

[The youth] came up with a concept of doing poetry and art. The house [down the street from their school] is abandoned, it's going to come down anyway, but they had an idea about saying that these houses, in their community, made them want to (...) take pride in that community. Just because the house looks like it does, [it] does not reflect everybody that's in this community. So, this was a group of seventh-eighth students that took on this practice (...) The youth put up [painted] doors around the house and they wrote things (...) that matter, things positive to them (...) they wrote poetry, graffiti, Black Lives Matter quotes, and we put it all around the house.

In this example, youth were provided the autonomy to create and lead a project intended to change the environment in their community, while also making a statement about the pride they have for their neighborhood. This participant who served as the facilitator of the group also spoke about the importance of youth leading the process, “it's not about me leading. It's about me presenting content that is relevant to them.” Giving youth the ability to lead and contribute their own ideas about how to address problems in their community facilitated their continued engagement:

I teach that [youth] have the answers to these issues in our communities, [they] do have a lot of answers and solutions. So, when we spoke through these [issues in the community] I said, ‘it sounds like you guys don't like these things (...)’. So, [I asked] what are we going to do about this? We're asking each other, ‘what can we do about this thing?’ And that's how [the art project] came up so they felt pride and it was a weekly session. They were excited every week. You know, we're continuing this project.

Many of these organizations have developed programs that are more than a club, but also a space where youth are making a difference, planning for their future, and developing skills.

Organizations often asked youth to advise on decisions. A participant shared how youth were involved in the development phase of using a vacant lot as an outdoor classroom. Youth were asked to share what would be relevant to them in the space:

We had kids request in the planning portion (because they had their own design session) that [the outdoor classroom] needed Wi-Fi, it needed broadband (...) The broadband concept we actually did mention it to the city because that neighborhood would benefit extremely well from having a broadband hotspot.

This organization took the youth's input seriously and implemented their suggestions where possible, which supported the creation of a space that was youth driven, and that met the needs of youth and the neighborhood.

Being themselves

Participants also discussed how creating spaces for youth to be themselves helps to facilitate youth's continued involvement. As a participant stated, "we give everybody an opportunity just to be themselves, they don't have to put on a front or anything they can just be their complete true selves." Further, cultivating authenticity means providing spaces where youth can "express who they are." Allowing youth to be themselves was noted as an important aspect of engaging youth and helping them feel supported, which in turn facilitated their development and continued engagement.

Limiting adult control

Engaging in methods that limit undue adult influence on youth engagement ensures youth can be more self-directed in their work. As one participant noted, "90% of the job working with kids [is keeping the adults under control]. Just dealing with their parents because you know parents always feel they know, but the kids actually know more." Beyond limiting adult control, a participant described creating a youth dedicated space where:

[the children] have their own area above on a platform where there are no adults, so we have benches, picnic tables laid out, but we don't really encourage [adults] to come to the children area. So, if you get up there it's a privilege to watch my children at work. So, be quiet, do not advise them, do not correct them, you know watch your mouth, watch your tone, you know, be careful because [the children] can tell you to leave.

To cultivate youth driven spaces, participants emphasized the importance of limiting adult control so that

youth can show up as themselves, their input can be heard, and their leadership can thrive.

Mentorship

An additional youth engagement tactic is helping to develop peer and adult mentoring relationships. Some participants discussed how they engage adult mentors such as teachers, professionals or coaches of Color who are "role models that look like [the youth]." Other participants discussed the ways their organization creates opportunities for older youth to support younger youth. For example, one participant described how their organization has a youth council and through a survey of existing members they learned that involving more experienced peer mentors facilitated youth engagement.

It was really helpful to have mentors that were a little bit older and more experienced. That peer-to-peer learning was really valuable, and they liked that. (...) It's like other young people that they're learning from, and that they have a lot of say in how they're going to spend their time, so they're drawn to come and be a part of it because it's making a difference, because they appreciate learning from their peers, and because they get a say in what it's going to look like.

Participants spoke about the importance of formal mentoring as well as peer support to promote youth development. This peer-to-peer learning and mentorship also supported youths' enjoyment and continued engagement in the program.

Challenges and solutions

Participants noted challenges to engaging youth in greening work, as well as ways their organizations try to navigate or address these challenges. Below we outline each identified challenge (i.e., age, capacity, and retention and turnover) and a corresponding solution (i.e., developmentally appropriate programming, leveraging partnerships, and sustainability).

Age

In some instances, youths' age became a limiting factor in terms of safety, types of activities, and overall interest in greening work. For example, one participant described that working with certain tools on the sites is a challenge when it comes to involving youth in all parts of the process.

Tool safety is certainly an issue and that's a barrier in terms of anyone under the age of 16 can't operate power tools. So, it limits what we can do on a site or how much [youth] can be involved in the process entirely. If a site has heavy clearing that needs to happen, we have to do that or find someone to do that before we can involve them, so there's parts of the process they can't be involved in easily or safely.

Regarding tool safety, this participant highlights the need for organizations to plan ahead by having the heavy clearing completed before youth become engaged with the site. This example suggests that there are certain instances when it is not safe for youth to be involved. Additionally, participants reported that engaging younger age groups was challenging because their attention spans are shorter, and they may become bored very quickly. Similarly, engaging teens can be challenging because they may lose interest. One participant described the benefits and challenges to engaging youth in various age groups.

Depending on the age group, teenage angstiness of like 'I did this for an hour now I'm done, and disinterested.' (...) The younger groups, their energy and passion are there but [their] skill set, and ability are not because they're seven and can't dig a hole or whatever.

The age groups of the youth engaged can therefore become a limitation in some instances and require the organization to adjust their programming to be more developmentally appropriate and responsive.

Developmentally appropriate programming

Participants discussed addressing age-related challenges by creating programming that is developmentally appropriate for youth. While working with power tools may not be age appropriate, there are still ways for youth to be involved. A participant described how their organization uses a Junior Ambassador program, in which the curriculum is tailored to fit the learning needs of younger age groups. Additionally, the participant mentioned that youth might require different input solicitation methods than adults due to differences in perspective or priorities. They shared an example about an instance where they asked both youth and adults to place stickers on pictures of items to provide input on what they would want to see on a vacant lot:

So, as you know, the sticker exercise is pretty common when you put up a bunch of pictures of things and you ask people to

put red stickers and green stickers. Way early on, we realized that children view that very differently. So, I walk up to a picture that had like 10 red stickers on it. And I was like, 'oh, you guys don't like slides', and they're like, 'no, we love slides' and I'm like 'well this is a picture of a slide and you all said you don't like it.' 'They're like, but [the slide] it's purple. And that's the color of the school that we're rivals with.' (...) There's more to it than that initial pass (...). You have to keep asking questions and I think that children taught us that.

Engaging youth may require some level of adaptation to programming or processes that organizations typically utilize when engaging adults in their work.

Retention and turnover

Participants described challenges with retention and turnover from session to session and throughout the program with both youth and adults. As youth get older, they may become less interested in the program or may no longer be able to be involved once they graduate high school. As a participant noted:

youth continue to shift in and out (...) So, I think that's something to keep in mind if you're doing youth programming is that you know (...) when they grow older, you have a new group coming in.

Organizations are constantly needing to maintain interest among current youth members, and work toward bringing in new youth. The inevitable turnover of youth as they age out of the program is also a consistent challenge.

Participants also discussed challenges with retaining champions or partners who help facilitate youth engagement in their program. As one participant described, it is difficult when program champions leave an organization:

The teachers at the school and the relationship with the school is just really hard. There's very high turnover. The teachers come and go, they move schools; principals and vice principals are changing all the time.

For this organization, teacher turnover made it challenging to maintain partnerships. For example, teachers are often consulted about how to improve nearby vacant lots. When a teacher leaves, the next teacher might not want involvement, or might want or need something different on the site.

Sustainability

Participants discussed working to create programs that are sustainable by maintaining interest among current members and engaging new individuals. While youth aging out of their programs is challenging, one participant described how it can be an opportunity for sustainability and continuously adapting their work to meet the needs or interests of new youth who join:

So, you've designed a space on the campus and two years later, all of the students that were involved in that have moved on to high school or whatever. In some ways it's beneficial to the sort of sustainability model because you have a chance to then engage the next youth voice to say how do we spruce this up or expand or add to or replace because things inevitably get broken or worn out.

Participants at one organization also acknowledged that due to high teacher turnover at their partnership schools, they had to constantly work to build new relationships. This entailed continuous emailing, calling, and meeting with partner organizations. One participant noted that combating retention and turnover requires “staying with it.” Planning for sustainability requires utilizing approaches that are flexible enough to engage future cohorts, while also allowing current partners and youth to provide input. For example, one participant talked about how they have one umbrella program that encompasses a lot of different options depending on community partners' or youth interests:

we have this umbrella program which could be a lot of different things. And the first one we did really was the outdoor classroom (...) to integrate native habitat into a park like setting and neighborhood. But they could all become different things so the other one we support is actually a community vegetable garden (...). So, we provide them resources and tools and help (...) connect them with other things.

Creating programs that offer enough flexibility to meet the various needs and interests of those involved and further the leadership and decision making of youth and adults was discussed as important for sustainability.

Capacity

Participants also acknowledged challenges related to organizational capacity, specifically regarding funding and staffing. For many of the organizations our participants represented, funding was often limited. As one participant noted, “our biggest issue is money

because everything comes from us. We're a nonprofit so, unfortunately, money is really our biggest issue.” Participants also discussed how funding restrictions would often limit their access to resources which sometimes inhibits their ability to implement youth's ideas or requests.

Participants also discussed the importance of having dedicated personnel who oversee youth engagement programming. For two organizations in this study, having in-house staff dedicated to facilitating youth recruitment and programming was an asset for engaging youth. However, not all organizations have the resources or capacity to hire staff to implement youth programming. Participants explained that despite their lack of resources, they were able to be successful at engaging youth by tapping into outside structures and organizations that already work with youth and have the resources to support youth engagement. Oftentimes these organizations discussed getting creative by utilizing free resources or drawing on resources from their partner organizations.

Leveraging partnerships

All participants discussed ways their organization leverages partnerships with schools, Girl Scout groups, churches, youth employment programs, and other youth organizations in their community. These partnerships provide a mutually beneficial relationship to help advance youth engagement efforts and navigate capacity challenges. Participants described how these partnerships were necessary when an organization did not have the staffing capacity to manage youth engagement on its own. Additionally, participants described the need to draw from existing resources and capacities. For example, by hiring staff who had expertise in youth development, and who were locally relevant mentors. One participant described how partnering with a youth employment program helped with funding and staffing capacity limitations:

[The youth are] being paid to do the work, but that money doesn't have to come out of this project's budget because there's a separate grant that is funding that Youth Employment Program, so it's really been a win-win partnership. We've been able to get a consistent workforce and they're able to get an outdoor experience that they value, that their leadership values, so you know we've been really fortunate. We would not be in the same place in terms of the amount of vacant property that we were able to positively effect without our partnership with this program.

Partnering with a summer youth employment program brought the organization 30 youth 2 days a week to support vacant lot projects. In this case, youth are paid

through the employment program and get outdoor work experience which is beneficial to both organizations and the youth themselves.

Another participant discussed their partnership with schools as valuable because teachers and principals from the school would champion the work, facilitate youth-adult partnerships, and bring youth into their programming.

It really took the schools being committed and the teachers, particularly the parochial schoolteacher and principal; really multiple teachers and the principal were highly committed to the project, which brought the students along and that really was how that worked. We didn't have an educator on staff, so we really relied on the teachers to fill that role for us.

Leveraging this school partnership was a creative way to mobilize resources and help address organizational capacity limitations.

DISCUSSION

Participants in this study consistently discussed the value of cultivating youth leadership in greening by developing youth-driven spaces where they can show up as themselves, follow their interests, and have their voices heard. Our findings regarding the value of youth-driven spaces and cultivating youth leadership is supported by empowerment theory (Zimmerman, 2000). Empowerment theory focuses on processes that enable participation, enhance control through decision-making, and create opportunities to learn and enhance skills. Many of the engagement tactics participants identified align with components of youth empowerment, including creating opportunities for youth voice in all stages from planning to action (Zimmerman, 2000; Zimmerman et al., 2018). In relationship to greening organizations, youth were able to identify necessary resources, implement design plans, and create community change. Engagement approaches that create space for youth voice help youth develop a sense of agency and confidence about how to address community problems. These approaches also deepen youth motivation and can help sustain their interest in the greening work (Anyon et al., 2018; Roberts et al., 2020; Rogers et al., 2020).

Findings from this study support the notion that empowering youth requires adults to share power. Participants discussed the importance of limiting adult control to allow for youth voices to be heard, but simultaneously acknowledged the value of positive mentorship from adults and older peers. This finding aligns with previous research suggesting that increasing equal and collaborative relationships between youth and

adults through an intergenerational partnership model is optimal for promoting healthy development (Fauth et al., 2007; Roberts et al., 2020; Whitlock, 2007; Wong et al., 2010). Approaches that balance appropriate scaffolding and support with opportunities for youth voice and decision-making may be particularly important for ensuring engagement and retention among youth of Color and low-income youth who have faced discrimination and marginalization (Anyon et al., 2018). Once this balance is established, intergenerational partnerships facilitate collaboration that is developmentally beneficial for youth by increasing their self-efficacy, confidence, and engagement in the community change process (Anyon et al., 2018; Evans, 2007; Kennedy, 2019). Few researchers have explored best practices for establishing more equitable intergenerational partnerships in PYD programs (Kennedy, 2019). Our study helps to address this gap by identifying some practical approaches to limiting adult control and advancing youth autonomy in the context of greening programs.

Study limitations

Our study has some limitations that require attention. First, this study lacks an inclusion of youth's own perspectives regarding their experiences within these programs. Due to a lack of data from youth, we cannot draw any conclusions about how their engagement in greening may have contributed to their positive development or their own feelings of empowerment. The focus of our study, however, was not to understand youth outcomes associated with participating in greening programs, which have been documented elsewhere (Delia & Krasny, 2018; Roberts et al., 2020; Rogers & Nandwani, 2018, 2018; Rogers et al., 2020; Russ & Gaus, 2021). Rather, our goal was to better understand how vacant land management organizations and their staff can facilitate youth engagement as a prominent part of their greening programming and the challenges and solutions that may arise in that process. An important direction for future research would be to explore youth experiences and outcomes associated with engagement in greening organizations through surveying or interviewing the youth themselves. Future researchers may want to consider utilizing Youth Participatory Action Research (YPAR) approaches to engage youth in the research process about their own and other youths' experiences within greening organizations (Ozer, 2017). One important area for inquiry would be to assess youth perspectives about how adults can best support them in their greening work, including approaches for balancing guidance and autonomy.

Additionally, the sample size of our study is relatively small. A small sample size may limit our ability to generalize our findings or draw broad conclusions that may apply to multiple organizations that engage youth.

Yet, our sample was selected to obtain information about the few organizations from a larger national survey that had successfully engaged youth in their work (O'Keefe et al., 2020; Rupp et al., 2022). We did, however, interview multiple staff in various positions in each organization selected for this more in-depth analysis and believe we obtained a thorough description of their youth engagement strategies and lessons learned.

Finally, our goal was to learn how high functioning organizations facilitate and sustain youth involvement in greening to provide examples of helpful strategies that may support other organizations wishing to implement youth-engaged greening. A limitation of this sample is that we may have missed learning about facilitators and challenges to youth engagement among lower capacity organizations. Future research could obtain more diverse organizational perspectives on youth engagement in greening, including among organizations that may struggle to engage youth in their work. Despite these limitations, our study supports the valuable role youth can play in neighborhood change efforts that address issues of concentrated vacancy and deteriorated vacant properties, which are also associated with crime and violence.

CONCLUSION

Researchers have demonstrated that vacant lot greening is a viable violence prevention strategy (Branas et al., 2018; Heinze et al., 2018). Emerging research is signaling that greening programs that engage community residents, including youth, may have greater effects on neighborhood safety than programs that do not engage residents (Kondo et al., 2016). These programs also have broad benefits for advancing PYD outcomes for youth (Rogers & Nandwani, 2018; Russ & Gaus, 2021). Yet few researchers have explored how to engage youth effectively and efficiently in greening programs. Findings from this study emphasize the importance of engaging youth in vacant lot greening, particularly in areas of planning, leadership, and decision-making. This study contributes to the youth engagement and vacant land management literature by sharing examples of how organizations can engage youth as a key component of their work to address vacancy, violence, and related neighborhood decline.

Engaging youth in greening provides opportunities for youth to participate in positive community development and work alongside adults and older peers who can provide mentoring and positive role modeling. Youth involvement also helps greening organizations expand their human resources to achieve their goals of vacant land remediation. Our results contribute to the greening, PYD, and violence prevention literature by demonstrating how organizations can facilitate youth engagement in greening work, which has been shown to be a viable

strategy for preventing community-level violence (Branas et al., 2018; Heinze et al., 2018; Kondo et al., 2016). Effectively and efficiently operationalizing youth engagement in greening is vital for advancing positive youth development in low-resource settings where youth are often left out of the solution to disinvestment and violence. Our research identifies some of the challenges of engaging youth in greening work and offers potential solutions. While the findings illustrated here may be broadly applied to PYD programs, the unique challenges of engaging youth in greening merit specific attention due to the underutilization of youth in this field and the context-specific requirements of greening work. Our study builds on the PYD and empowerment literature by supporting the importance of creating youth-driven spaces within greening programs, where adult control is limited and youth have a voice in decision-making (Anyon et al., 2018; Franzen et al., 2009; Kennedy, 2019; Ozer, 2017; Wong et al., 2010; Zeldin, 2004).

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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