Journal of Agricultural Education, 65(4), 127-144
https://doi.org/10.5032/jae.v65i4.2774

“It’s Good for the Human Soul:” Community Gardening as a Pathway to Civic Action

Chrissy Pfeil[1]

Abstract

In this study, I explored community gardening and civic action among undergraduate students through student interviews and narrative analyses utilizing symbolic interaction theory. Findings suggested that community gardening may be a pedagogical tool that allows students to develop civic knowledge and connect with and learn about their local communities. Findings also suggested that students described community gardening as civic actions and discussed how community gardening has resulted in their civic efforts, such as food donation and other volunteer work. As a result, I argued that school-based and community gardening in educational settings should be informed by principles of place-based learning and could serve as a means to inspire youth to work toward food justice in their communities.

Introduction

Scholars have called for education institutions to partner with local communities and organizations to explore how to address various challenges facing global society (Gamboa, 2023; Nelson, 2021; Singh, 2017). According to the National Task Force on Civic Learning and Democratic Engagement, a 2012 report “made an urgent call to higher education institutions in the United States to make civic literacy, inquiry, and action part of the educational objectives to be achieved by every college graduate” (quoted in Torney-Purta et al., 2015, p. 2). These goals are aligned with elements of civic learning, which scholars have defined as a combination of civic knowledge, skills, and values (Saltmarsh, 2005; Torney-Purta et al., 2015). To achieve the goals of the report, this study explored the possibilities of using community gardening as a pedagogical tool for students to explore civic learning and action. Okvat and Zautra (2011) defined community gardens as “plots of land used for growing food by people from different families, typically urban-dwellers with limited access to their own land” (p. 374). In this paper, I described how study participants demonstrated an aspect of civic learning, civic knowledge, and how it informed subsequent civic action. I also discussed how participants described their community gardening experiences as civic action.

Studies have shown the positive effects of community gardening (Cloutier et al., 2023; Gray et al., 2022; Hoffman et al., 2015). However, there have been few studies that explore if and how youth describe their community gardening experiences as civic action, and there have been even fewer studies that have explored the result of community gardening experiences on youth civic action. Notably, this study described how community gardening experiences can lead some participants to becoming more involved in their local communities.

Literature Review

Inspired by principles of place-based learning and education, community and school-based gardening may be an effective pedagogical tool to influence civic action among youth in their local communities. Also important, previous literature showed that community and school-based gardening may provide an opportunity for youth to work toward food justice, and this study attempted to investigate these phenomena in more detail.

---

[1] Chrissy Pfeil is a Ph.D. student in Curriculum, Instruction, and Teacher Education at Michigan State University, 620 Farm Lane, East Lansing, MI 48824. pfeilchr@msu.edu.

Benefits of Gardening in Educational Contexts

When utilized in educational contexts, research has shown how students have positive experiences while engaging in community and school-based gardening projects and activities, and research has also shown these trends holding true across different age groups, including elementary students, college students, and adults (Blair, 2008; Kelly & Brannlund, 2024; Lekies & Eames-Sheavly, 2008). Generally, school-based gardening has been linked to increased student excitement and motivation (Blair, 2009; Gallavan & Bowles; 2012; Lekies & Eames-Sheavly, 2008). School-based gardening has also been tied to increased interest in at-home and familial gardening and knowledge of food safety and sustainable gardening practices (Blair, 2009; Diaz et al., 2018; Schocker et al., 2016).

While evaluating youth participation in gardening activities in K-12 contexts, researchers have found that participants showed engagement, ownership, comfort, and responsibility through participating in gardening activities and programs (Gallavan & Bowles, 2012; Langhout et al., 2002; Lekies & Eames-Sheavly, 2008). Gardening programs have also allowed students to connect with their local communities by creating community cookbooks and building relationships with community members through gardening tours (Gallavan & Bowles, 2012; Langhout et al., 2002). Notably, Gallavan and Bowles (2012) connect the gardening experience to the five aspects of powerful learning (meaningful, integrative, value-based, challenging, and active learning) as students were likely to make meaningful connections with others and learn to care for community resources (NCSS, 2016).

In a study of community college students, Hoffman et al. (2007) described how gardening in educational contexts improved gardening self-esteem among participants, reduced ethnocentrism among participants, and contributed to an increase in community engagement and awareness. In addition, according to Jones et al. (2023), as a result of community gardening, adults with learning disabilities experienced relaxation, a sense of achievement, developed skills such as planting, care and maintenance of vegetables, collaboration and problem solving, and provided an avenue to make lasting friendships.

Due to the positive aforementioned educational benefits of school-based and community gardening, Cramer and Ball (2019) proposed a legitimization of garden-based learning in both formal and informal contexts, highlighting the importance of the physical garden as the learning site, which can occur both inside and outside of the school.

Place-Based Education

Studies have shown the benefits of local, place-based education in educational settings to connect students with their local communities (Esposito, 2012; Gamboa et al., 2023; McKim et al., 2019). Place-based education utilizes an asset-based approach to connect students with their local communities, combining elements of experiential learning, project-based learning, and problem-based learning (Karrow et al., 2022; Sobel, 2004). Scholars have also described how place-based learning can result in civic engagement and action among student participants (Gamboa et al., 2023; Sturrock & Zandvliet, 2018). Other studies have shown how place-based education can contribute to increased motivation in classes and the development of critical thinking skills (Zandvliet, 2012). When paired with school-based and community gardening, place-based education may result in increased connections between students and their local communities, which may result in additional civic action among youth. However, more studies should be conducted to investigate this claim, and this paper provided insight into this possibility.

Community Gardening and Civic Action

In this study, I utilized Adler and Goggin's (2005) definition of civic engagement: "Civic engagement describes how an active citizen participates in the life of a community in order to improve conditions for others or to help shape the community's future" (p. 241). Civic engagement has been paired with civic action, such as regular voting, protesting, drafting and signing petitions, boycotting, and canvassing, among other activities (Keeter et al., 2002).

According to some scholars, community gardens emerge for civic reasons (Holland, 2004; Porter, 2018; VanDevelder et al., 2015). For example, Holland (2004) surveyed nearly 96 gardens to investigate the purposes of establishing community gardens, and respondents highlighted that education, community development, and skills and/or training were three of the most important reasons. Likewise, VanDevelder et al. (2015) highlighted key reasons community gardens emerge in urban and rural areas, including food deserts, epidemiological consequences, and ecological sustainability and policy.

Previous research has shown that community gardening can result in civic competence and action among all age groups (Cloutier et al., 2023; Kingsley et al., 2019; Langhout et al., 2002). In adulthood, researchers described how community gardening participation resulted in skill development in collective decision-making which results in civic action, such as planting trees and taking responsibility for their care and maintenance (Cloutier et al., 2023). Scholars have also outlined reasons community members become involved in community gardening. For instance, community gardening can be used as a means to decrease high prices at grocery stores and a method to teach youth about the importance of composting and recycling (Cloutier et al., 2023; Langhout et al., 2002). Kingsley et al. (2019) discussed how community gardeners identified as community activists. Gardeners explained their roles as activists by highlighting sustainable choices to improve the local community, providing others with free and fresh food, and addressing sustainability issues created by climate change. Also important, gardeners described how community gardening offered them an opportunity to engage with their local community in ways they did not consider prior to their involvement with the community garden.

In partnership with community-based organizations focused on food justice, Porter (2018) described how community gardening can result in healing and transformation: working with gardeners at all skill levels, these community-based organizations view gardening as "a strategic activity that that provides one of many means to larger ends of community health, food security, equity, and power" (p. 198), showing that the emergence and maintenance of community gardens can be seen as inherently civic entities and activities.

An Overview of Food Justice

The concept of *food justice* was originally coined and popularized by Gottlieb and Joshi (2010), who defined food justice as "ensuring that the benefits and risks of where, what, and how food is grown and produced, transported and distributed, and accessed and eaten are shared fairly" (p. 5). However, scholars such as Sbicca (2018) noted the limitations of this definition and called for a restorative food justice approach which centers abolition, restorative justice, healing, equity, and mutual aid in proposed solutions and practices. Other scholars highlighted the importance of policy changes in addressing food security issues (Guthman, 2011). Researchers such as Mares and Peña (2011) and Holt-Giménez (2011) argued for a food sovereignty framework for community organizing, highlighting the importance of broadening the focus of the food justice movement from nutrition to include culture. This framework would center land entitlements, collective decision making, and community control over natural resources and assets, including the production, distribution, and consumption of food.

Food justice scholars highlighted a series of issues impacting our food system and consumers of food products, including the negative environmental impacts of monoculture (Alkon & Agyeman, 2011; Altieri, 2000), the increased corporate ownership of agriculture, including plants and animals (Alkon & Agyeman, 2011; Grain, 2007; Holt-Giménez, 2011), and the negative health implications of industrial monoculture (Alkon & Agyeman, 2011; Nestle, 2002). Some scholars also argued that food justice is intimately linked to other social justice concerns, such as racism, mass incarceration, labor power and exploitation, and immigration and deportation (Broad, 2016; Gottlieb & Joshi, 2010; Sbicca, 2018). These concerns also included the communal hunger caused by Indigenous land theft, the legacy of slavery, and various federal exclusionary acts that impacted Asian Americans and their right to land (Green et al., 2011; Mares & Peña, 2011; Minkoff-Zern, 2011). Considering the intersectional nature of the food justice movement, some scholars argued that current proposed solutions to food crises, such as buying and eating organic, supporting local farmers by shopping at local farmers markets, etc. are colonial, Euro-centric, elitist, racist, and classist in nature (Guthman, 2011; Harper, 2011; Morales, 2011; Norgaard et al., 2011). Considering these aforementioned issues, it is imperative that youth are becoming aware of and more involved in addressing the systemic issues impacting our global food system. Community and school-based gardening may be a pedagogical tool to explore and promote civic action.

Purpose and Research Questions

Previously, the literature review highlighted how community gardens may be a means to inspire civic action among community members and may be an inherently civic act. To further examine this possibility, I attempted to answer the following research question in this study: How do college students describe and understand community gardening experiences as civic actions? The results of this study could help educators, administrators, and future researchers identify and understand community gardening as a pedagogical approach to explore and promote civic action and engagement among youth.

Theoretical Framework

This study was grounded in symbolic interaction theory to examine how participants make meaning out of their community gardening experiences. Mead (1934) has been credited with the development of symbolic interactionism to explain how people are influenced by their environment and how the environment influences people's lives. Mead's student, Herbert Blumer, expanded the theory by "adding meaning, language, and thought to how people know, understand, interact, and navigate their social world" (Bhattacharya, 2017, p. 61). Specifically, Blumer (1969) centered the experiences of human beings and their interactions with their environment by arguing that human-environment interactions and experiences are dynamic. He also believed human beings interpret their interactions with the environment to make meaning out of their experiences.

In this study, I utilized symbolic interaction theory to explore if and how students described their community gardening experiences as civic action. For this investigation, the environment reflected the community gardens, the student farm, community day planning session meetings, or various food distribution events. The environment also includes the individuals with whom the participants interact; these individuals could be fellow participants and volunteers, community organizers, or food distribution recipients.

I used this theoretical framework to investigate how participants made meaning out of their gardening experiences and interactions with their environment. According to Blumer (1969), "The position of symbolic interactionism… Is that the meanings that things have for human beings are central in their own right" (p. 2). As such, I investigated how the centrality of these meanings influenced participants' perceptions and understandings of their community gardening experiences as civic action.

Methodology

I used a case study approach to compare the community gardening experiences of students to examine if, and how, they viewed these experiences as civic actions (Yin, 2003). This study included nine students as comparative cases of how students may realize community gardening experiences as civic action. Each student has been involved in community gardening in a volunteer-based capacity during their college experience. All participants had volunteered at the same local community garden, and some had their own individual plots in addition to their volunteer service. Because my intent was to explore if and how youth describe their community gardening experiences as civic action, participants from one local community allowed me to describe, understand, and explain these experiences within the same context (Hamel et al., 1993).

For this investigation, when I used the term *community*, I utilized the definition of earth community as proposed by Berry (1988) to extend beyond human social ties to include connections with non-human animals and the physical environment. Each participant also volunteered at the college's student farm, an organization that works with the community garden to donate fresh produce to community organizations and members. I knew each participant personally as I met each student during volunteer events at the local community garden. Participants were recruited via email to introduce the research project. Participants consented to the study at the start of each interview. To align with principles of symbolic interactionism, interview questions focused on participant perceptions and meanings of their community gardening experiences (Blumer, 1969; Mead, 1934). Each interview lasted approximately one hour per participant and was semi-structured (Merriam, 2009).

Since this study is grounded in symbolic interaction theory, the analyzed data centered the participants' interview responses of participants to explore how they made meaning out of their community gardening experiences. However, acknowledging the importance of data triangulation, I also observed and took field notes at the following events and activities with the participants: two annual community gardens clean up events; multiple community day planning meetings; one annual community day event; and multiple harvesting and food distribution events. These events and activities provided invaluable insight into the local community gardens and the food distribution network to support participant interview responses.

Contexts

Community Gardens and Student Farm

Each participant volunteered at the local community garden and/or college's student farm, but the time spent volunteering varied per participant. In addition, participants may have had their own community gardening plots where they planted their own seeds and seedlings, nurtured their own plants, and harvested each crop. If a participant had their own garden plot, they were solely responsible for each stage of the growing process. Each participant had been involved in volunteer opportunities organized by the local community gardens, such as annual garden clean-ups, watering and harvesting crops, and weeding, among other tasks. Finally, each participant had been involved in volunteer opportunities at the student farm where produce is grown for the sole purpose of donating to the local food pantry.

Participants

Participants were enrolled at a small liberal arts college in the midwestern United States. Each participant had been involved in a volunteer-based community gardening experience at the local community gardens or student farm. Each participant was involved in gardening in the same local community. Participants were purposefully sampled based on these experiences. Participants range in age from 18 to 24. Seven identified as White, and two identified as Black; six identified as female, and three identified as male. Each participant chose a pseudonym to ensure anonymity. Table 1 identified the pseudonym of each participant, time spent gardening in the local community, and where they gardened (community gardens, student farm, or individual plots). If a student had gardened at the community gardens or student farm, i.e., they grew produce for donation to the local food pantry or donation box, not consumption. Individual plots allowed students to grow food for themselves.

Table 1

Overview of Participants' Gardening Contexts

Name	Time Spent Gardening in Local Context	Gardening Location
Amanda	One year	Community gardens and student farm
Annie	Four years	Community gardens, student farm, and individual plot
Frank	Two years	Community gardens and student farm
Green	Two years	Community gardens and student farm
Mo	One year	Community gardens and student farm
Otis	One year	Community gardens and student farm
Rose	Two years	Community gardens and student farm
Seth	One year	Community gardens, student farm, and individual plot
Zena	Three years	Community gardens and student farm

Data Collection

Since this study was grounded in symbolic interactionism, data for this study centered on participants' responses to interview questions. Each participant was interviewed once for one approximately one-hour. Each interview was audio recorded and transcribed verbatim using transcription software. Interview questions focused on each participant's personal experiences with community gardening to align with principles of symbolic interactionism. Interview question examples included: "If applicable, what have you learned as a result of community gardening?" and "How would you describe your experience to someone new to community gardening?" The study focused on identifying emergent themes across each interview response(s) to explore if students connected and described their community gardening experiences as civic actions.

To determine how participants behaved in community gardening contexts, data was also collected at community gardens clean-up events, community cay planning meetings and the annual event, and food distribution events. During these observations, I took field notes to document my observations, and the observational protocol was separated into descriptive and reflective notes (Creswell, 2009). I completed semi-structured observations as a complete participant. Participants were interviewed after the observation sessions.

Data Analysis

To analyze the data, I manually coded and transcribed interview responses and observation notes, developed appropriate categories, and highlighted the common themes among the data. I analyzed each interview response using the narrative analysis approach proposed by McCormack (2000) to identify how each participant made meaning out of their community gardening experiences. McCormack's framework advances the idea of the importance of viewing interviews and transcripts through multiple lenses, stating, "Viewing interview transcripts through multiple lenses recognizes that no one lens can reveal both the individuality and the complexity of life" (p. 295). I employed McCormack's framework by actively listening during and after interviews, identifying different narrative processes employed by the participant, and acknowledging the personal, cultural, and interactional context of each participant.

During the coding process, I used an inductive approach, allowing the themes to emerge from the data organically. Utilizing the framework proposed by Strauss and Corbin (1990), during the open-coding phase, I identified the following labels: food access, food security, gardening skills, community relationships, building community, and concrete civic action and grouped direct quotes according to each theme. Then, I shifted into axial coding and grouped each code into a category. The following categories emerged during analysis: community gardens as a method to promote food access and security, development of community knowledge, and community connections and feelings of belonging. Finally, I combined codes and categories during the selective coding process to identify a core category: community gardening as civic action. I argue I reached data saturation because data collected during interviews and observations started to become repetitive, and no new codes or themes were emerging from the data.

Qualitative Quality

To ensure my study aligns with qualitative research best practices, I utilized the qualitative quality framework proposed by Tracy (2010). I argue the research topic was worthy of investigation and contributed significantly to the field because it explored a method for getting youth involved in their local communities, and the benefits of youth involvement in local communities was documented in the literature review (Blair, 2008; Kelly & Brannlund, 2024; Lekies & Eames-Sheavly, 2008). This study met the criteria for credibility and rigor because I collected multiple forms of data (interviews, observation data, and planning meetings), data collection spanned nearly two years, and data analysis was grounded in existing theoretical and methodological procedures (McCormack's (2000) narrative analysis and Strauss's and Corbin's (1990) coding frameworks). Finally, this study was sincere and ethical because of the consent and anonymity measures set in place to protect participants and was transparent about the research and data analysis methods.

Tracy (2010) also argued that reflexivity and transparency were vital components of quality qualitative research. Since I had a relationship with each participant prior to the research project, it was important to disclose my potential biases, assumptions, and personal experiences that may have influenced the research findings. I met each participant prior to the study at various community gardening volunteer events, and the location of these volunteer events would ultimately serve as observation sites. Before the study, our interactions were mainly informal conversations during volunteer service. However, participants were purposefully sampled due to our familiarity. Our familiarity likely impacted the interviews in a positive way as participants were comfortable sharing their experiences. Our familiarity could have also influenced the interviews in a negative way as the participants knew my thoughts and feelings about community gardening and could have possibly echoed similar sentiments. Due to my involvement at the community gardens, I may have been susceptible to familiarity and/or confirmation bias. However, I attempted to maintain reflexivity during the research process by reflecting on my thoughts and feelings regarding my interactions with the participants, and these reflections were added to the interview transcripts after each interview. I also attempted to do the same during observations, and I must note that I was a complete participant during each observation. While I knew the participants personally prior to the project, my commitment to using rigorous data collection and analysis procedures during the study provides insight into the credibility of the findings and conclusions.

Findings

The analysis revealed that each participant described and understood their community gardening experiences as civic actions and also articulated aspects of civic learning. Participants described the consequences of food insecurity in the local community, and they described how community gardens may provide an avenue to combat food insecurity and access. Participants also described how they learned more about the local community. Furthermore, the participants reflected on how community gardening allowed them to develop community connections and fostered feelings of belonging in a community.

Community Gardens as a Method to Promote Food Access and Security

The majority of participants connected their community gardening experiences to the importance of food access and security. For example, Seth discussed how he learned about the importance of food security and access to fresh food and described how "a lot of people don't have access to a grocery store or car to get the things they need." Meanwhile, Rose shared how "food power" had been "taken away from a lot of people, especially minority groups," citing the lack of culturally-relevant foods in minority communities and the negative health impacts of these foods. Rose reflected on the role of community gardens in this relationship, stating, "I think community gardens are really changing the way people think about their relationship with food and power." These narrative examples showed how participants' perceptions of food access and security and how these are connected to notions of power and privilege changed over time. Notably, these examples showed how understandings of food access and security evolved as a result of community gardening experiences (Blumer, 1969).

Similarly, Annie described how when you Google "grocery stores" in the local community, dollar stores and gas stations pop up instead. As part of a project through the community garden, Annie ended up interviewing community members about their experiences accessing fresh food. According to Annie, most interviewees expressed that the local community "is not a food desert" and "people are just poor." Annie came to the conclusion that people were "unaware" that they, and their neighbors, live in a food desert. However, other community members described their experiences as "having no clue where to find food" so they "live off fast food." Annie described this type of lifestyle as "unsustainable" and thinks the community garden could be a potential avenue to address some of the food security issues the community faces.

Otis also discussed the lack of grocery stores in the local community, and described this phenomenon as a "food crisis." During our conversation, Otis reflected on what he learned about food access and insecurity, especially how the poor disproportionately live in food-insecure areas. Amanda described how community gardening pushed her to "understand how the world works," especially regarding how the food system works, such as food distribution networks and the existence of food deserts. Like Annie, Green, Mo, Rose, Seth, and Zena, Amanda discussed how community gardening may be a pathway to help mitigate these issues and provides participants with "food self-advocacy." These examples highlighted the importance of community gardening in participants' understandings of food security, access, and characteristics of their local community. These examples also showed that participants saw community gardens as potential pathways to promote food access and security in their local community.

While some participants described the local community as a "food desert," Frank disagreed with this label. Frank believes that "food apartheid" is a more comprehensive term that describes the current state of affairs in the community. When asked to define the concept, he said,

> Basically, it's inequitable access, because another group has made it that way, or placed themselves above another group historically. White people would bring Black people up

> from the south to work in these northern cities, and, eventually, the white people just left. They left the Black people in this systemically racist apartheid that, like, there wasn't access to anything here, because the white people in power just stopped caring and left.

Expanding on why he uses the term "apartheid" in lieu of "desert," he said, "It doesn't have the same implication because it doesn't emphasize the inequity of it."

Zena also referred to the current situation in the local community as "food apartheid." She described that growing up and beginning her undergraduate studies, she was familiar with the term food desert. However, she recently learned that apartheid was a more appropriate description, stating, "A desert makes it seem natural compared to apartheid, which is a man-made problem, and that this is, like, created by people." Frank and Zena both explained that they learned more about food access, security, and apartheid from their community gardening experiences. Their perceptions and ideas changed as a result of community gardening, and this revealed how they made meaningful connections from interactions with their environment (Blumer, 1969).

Similarly, Green described the community garden as a "conduit for talking about food security and apartheid." Green continued to describe community gardening as a form of political action that challenged capitalism and asserted that access to food and water are human rights. Green also noted how due to the way the production and distribution of food has evolved over time, grocery stores that are "monopolizing food" are causing an "equity problem" due to the increase in food prices nationwide. Green also described how the way our food systems work is "exploitative," using the example of growing green beans in Africa. Green stated,

> A lot of our green beans are grown overseas, like in Africa, which is so weird. And because of that, it's using water over there. It's not our water. It's using land over there, and that's not our land. And it's being shipped all the way over here.

However, after reflecting on food insecurity and environmental concerns, Green remained hopeful about the role community gardens can play in mitigating some of these issues. Discussing other horrors, such as the ongoing genocide in Palestine, the lack of gun laws protecting schoolchildren, and the loss of reproductive rights for female-identifying folx, Green still believed that "people are largely good." While the current state of the world "can hurt our faith in humanity," Green expressed, she also described how community gardens "restore" her faith in humanity because of the beneficial communal and environmental impacts. Green's responses provided another example of how her ideas and perceptions about food security evolved from her involvement with the community gardens. She showed how her ideas changed as a result of interacting with her environment as outlined by symbolic interactionism (Blumer, 1969).

Frank also reflected on being a member of a team that helped revitalize the student farm. Originally, students, faculty, and staff were considering selling the produce to raise funds for their on-campus organization. However, they changed their minds, and decided to model the student farm after the local community garden to improve food access among community members. Frank explained,

> It was just general consensus that, like, we just wanted to give this food away, too. So we ended up doing that, and we saw the super important role it plays within the community. We give so much food to the community, and the community loves it.

Frank's team's decision to model the student farms after the community gardens showed that their experiences at the community gardens influenced how they viewed food access and security in their local community. This decision also showed that how they viewed food access and security changed as a result of their interactions with their environment, a vital component of symbolic interaction theory (Blumer, 1969).

Community gardening seemed to have a transformative impact on the participants' lives. So transformative, in fact, that it changed the career trajectories of some of the participants. For example, Zena's experiences in community gardening inspired her to pursue employment as a Food Security Coordinator upon graduation because she is interested in exploring and promoting "community resilience." Green was also inspired by various community gardening experiences and will work with the community garden full-time during the summer months.

This theme was corroborated during observations at the annual community gardens clean-ups and during community day planning meetings. For example, during community day planning meetings, Amanda, Otis, and Seth clearly articulated the importance of including the community gardens and student farms as volunteer sites for the event, highlighting the role these entities play in addressing food insecurity in the local community. The food distribution opportunities were also advertised during the community day event. The food distribution opportunities were inherently civic acts - participants harvested produce at the community gardens and student farm, packaged the produce, and delivered the produce to the local food pantry. Once delivered, participants worked with community organizers to distribute food directly to community members in need. During the annual community gardens clean-ups, participants prepared the gardens to grow food for distribution.

Development of Community Knowledge

The participants described how they learned more about the local community. For example, Seth described his first experience harvesting green tomatoes. At first, Seth was confused - why would he harvest unripe fruit? However, after learning from his fellow gardeners, he learned that fried green tomatoes were a favorite among community members. Later, Seth was able to connect with a community member and learned a recipe for fried green tomatoes, so he was able to try out the local delicacy. Seth was excited by this interaction because he was able to learn something new and connect with community members. Frank also learned different ways to prepare fruits and vegetables: "It's super beautiful that people can share food cultures like that."

In a similar fashion, Annie described how she worked with community members to create a community cookbook that values the ethnic diversity of the local community. When she was at the local library, she noticed that the majority of cookbooks were "very white" and for "church-goers." She, and others at the community garden, wanted to create a more culturally-relevant cookbook. The cookbook provided recipes for how to prepare produce they grew in the garden. Annie remembered when she gave someone an eggplant, and the community member did not know how to prepare it. Annie hopes that the free cookbook can help people learn how to prepare their produce and become more comfortable cooking and eating fresh vegetables. Community gardening allowed Annie, Frank, and Seth to learn more about what Frank described as "food cultures," the local customs and traditions of the local community regarding food choices. These experiences also showed how their interactions with their environment changed how they perceived the value of certain grown produce and recipes, such as fried green tomatoes (Blumer, 1969).

Amanda described how she "learned more about the local community as a whole." Amanda connected with community members to learn more about community needs and perspectives of different people. For example, Amanda connected with a community member to learn about the annexation of the local school district, something she didn't know prior to being involved in the community garden. "I learned how the community is pretty mad at the government for allowing the school district to go downhill and pretty much disappear," she said. Amanda's example illustrated that community gardening may lead to youth learning more about their local community in unexpected and meaningful ways.

This theme was also supported my observations. During the community day event and planning meetings, Amanda, Otis, and Seth described learning more about the local community and community needs by networking with community leaders and organizations and attending city council meetings. During community day planning sessions, they described what they learned about the local community (primarily community needs for service projects) and structured community day projects to reflect these needs. Since the observations did not include rich narrative samples about learning outcomes, participants did not describe learning more about the local community at the food distribution events or the community gardens clean-ups. However, during interviews, participants reflected on both service opportunities as sites where this learning took place. These reflections showed how participants' participation in these service events led to civic learning as a result of interacting with their environment, showing how they made meaning out of these experiences (Blumer, 1969).

These interview responses and observation data highlighted how students were able to articulate what they learned about their local community, ranging from interpersonal encounters to introductions to other community events and news. These examples showed that community gardens could provide space for community networking and provide place-based learning opportunities for students in ways that are impossible within the walls of classrooms and schools, and as a result, students were able to learn about and connect with their local community, a key component of democratic citizenship. Students were also able to apply knowledge learned in the classroom to real-world situations and examples while community gardening, which in turn strengthened their understanding of key civic, environmental, and agricultural concepts.

Community Connections and Feelings of Belonging

Most participants discussed connecting with members of the community and felt a sense of belonging at the garden. For example, Otis described how he was welcomed at the garden with "open arms" by current gardeners. Similarly, Frank remembered when he was invited by community members to other civic opportunities at churches and local businesses. Green also described how community gardening allowed her to "meet really wonderful people who really care about their communities." These narrative examples showed how the community garden provided a space for connection and emotional nurturance, a vital component of providing a sense of belonging within a community.

Likewise, Seth described how his community gardening experiences allowed him to become "closer to the community." He described how he and other gardeners harvested produce and placed it in a free vegetable stand by the road. They recorded and posted videos to social media, telling community members to "Come and get some fresh produce!" Seth's story showed the power of community connections and outreach. Seth described how he was originally nervous about interacting with people at the vegetable stand, but ended up enjoying the process because he was able to meet the people for whom he and the rest of the gardeners were growing the produce.

After her involvement with the community gardens, Amanda described how she was involved in other civic engagement efforts, notably planning and implementing an annual Community Day service event in partnership with her peers and community organizations. During this event, they centered beautification efforts, including flower planting, painting, and trash clean-ups. They also ensured volunteers were placed at the community gardens and student farm. She said,

> We had a bunch of different people from the community and the college who came together to work on different community projects, such as parks, or just areas downtown that needed to be beautified. It just sort of created that sense of community and interconnection between the college and the community.

Otis was also involved in organizing and planning Community Day. He described the importance of the event, noting the large number of people who attended the event and how it "brought the students and community together." Similarly, Mo described how because of the connections she made at the local community garden, she was involved in a research project where she interviewed other community gardens to investigate community garden sustainability. The examples showed how participants became more civically active as a result of community connections they made during their gardening experiences. These stories also showed that community gardening may potentially provide an avenue for youth to become involved in their local communities.

When Annie first arrived in the community to start college, she described how she had difficulty finding community. However, after becoming involved in the community garden, she was able to make lasting friendships and connections. She expressed, "I've never thought of gardening this way until I started being a part of this community, which is amazing and cool and awesome." In a similar manner, Amanda reflected on one of the reasons she continues to be involved in community gardening. She said, "I love the community aspect of it, just getting to know people in different aspects of life." Mo also touched on gardening with the community for a specific purpose, stating, "Gardening for a purpose other than, like, self-enjoyment is really fun." Annie, Amanda, and Mo expressed feeling a sense of belonging at the gardens, and they also expressed this belonging also included a communal sense to serve others in their local community.

This theme was corroborated by my observations. For example, during the community gardens clean-ups and food distribution events, I noticed that the participants were comfortable and at ease at both sites. Participants seemed to know each community organizer, fellow gardener, and food recipient by name. Participants also seemed to know each other well and regularly joked and laughed during these service events.

According to the participants, community gardens were inherently beneficial components of our local communities. For example, participants reflected on the personal benefits of their gardening experiences. Green described community gardening as "good for the human soul." Frank described his community gardening experience as "transformative." Annie described her overall experience as "impactful." Otis described how community gardening allows an individual "to evolve as a person." Mo described her experiences as "inspiring." These direct quotations provided insight into how each participant viewed their community gardening experiences and how they allowed them to grow individually as people and to better serve their communities. These quotes also showed how participants made meaning out of their community gardening experiences, such as civic preparation and growth (Blumer, 1969).

Discussion

Each participant understood and described their community gardening experiences as civic actions. Participants also reflected about how their community gardening experiences led to subsequent civic action. Notably, each participant discussed the role of the community garden, and themselves, in increasing food access and security in the local community. These findings can inform how educators combine elements of gardening and place-based learning as well as instruction to allow students to learn about their local communities and connect them with these communities.

To summarize, students described their community gardening experiences as civic actions, reflecting on how they were laboring not for themselves, but for people who need access to fresh produce and healthy foods. Since civic action primarily centers caring for the common good(s), each participant described aspects of community gardening as civic action, even if it was not explicitly named as civic action. These responses and observations highlighted how community gardening experiences are linked to proficiency in civic knowledge. To demonstrate civic knowledge, participants named and described key concepts related to food access and insecurity, such as food deserts and food apartheid and were able to describe how these concepts are man-made and connected to power. Participants also described symptoms of food deserts and apartheid: lack of grocery stores and the oversaturation of dollar stores and fast food restaurants, usually in marginalized communities, which in turn negatively impact the physical and mental health of community members, phenomena that has been documented by food justice researchers (Salari, 2023; Zurawski, 2023).

Green described how growing food in other parts of the world exploits the land and labor of other peoples and nations, sinister manifestations of white supremacy, capitalism, and settler-colonialism, processes that have been explored and documented by ecology and food justice scholars (Whyte, 2018). Mo also described how community gardens primarily benefit low-income and disabled community members, folx who continue to be marginalized within society in different ways, including food access and security (Schwartz et al., 2019). These narrative examples highlighted how community gardening could be used as a pedagogical tool to introduce and reinforce key concepts learned in the classroom, such as food deserts and apartheid and symptoms of systemic racism, capitalism, white supremacy, and settler-colonialism.

The findings suggested that community gardening can be an effective and powerful pedagogical tool to engage youth in their local communities. However, based on how participants described their community gardening experiences, I argue that gardening in educational settings should be paired with principles of place-based education. In the literature review, I described how scholars included asset-based instruction and experiential learning as important aspects of place-based education (Karrow et al., 2022; Sobel, 2004). In this study, participants utilized an asset-based approach when talking about and interacting with members of the community and became more familiar with the idea of place. Findings showed how ideas of place can lead to making meaning out of experiences, a vital component of symbolic interaction theory (Blumer, 1969). For example, Annie identified community needs and potential solutions when she, and other community members, compiled a community cookbook. Frank and his colleagues identified community needs and potential solutions when they developed the philanthropic framework of the student farm's food distribution network. These experiences were informed by how the participants made meaning out of their community gardening experiences and how these experiences manifested in other areas of their lives, showing how the experiences were inherently meaningful and resulted in additional civic action (Blumer, 1969). When viewed through the lens of symbolic interactionism, these findings showed that when informed by place-based learning, community and school-based gardening opportunities could be effective teaching and learning opportunities for students to explore their local communities, issues impacting these communities, and provide a pathway for students to interface with community members. Since these opportunities can be difficult to offer and facilitate in traditional classroom settings, when informed by place-based pedagogy, school-based and community gardening may be a means to achieve these ends.

Overall, like prior studies on community and school-based gardening and civic action (Cloutier et al., 2023; Kingsley et al., 2019; Langhout et al., 2002), this study found that gardening in educational settings can lead to increased civic action and engagement among youth, and these findings are important as scholars have called for youth involvement in local communities to work toward solutions to pressing societal issues (Gamboa, 2023; Nelson, 2021; Singh, 2017). Another important finding from this investigation showed how participants not only described their gardening experiences as civic action; the participants also reported becoming increasingly civically active. These examples illustrated how community gardening could serve as an entry for students to become involved civically and explore other areas of interest and passion in their local communities.

The participants also described the role community gardens can play in providing food access to people in local communities, and this aligns with the findings of other researchers. For example, Fong et al. (2016) highlighted reasons low-income individuals do not, or cannot, access food banks, and they included long lines and low food quality. These concerns are also an important consideration in working toward food justice. According to the participants, community gardens may help mitigate some of the inaccessible features of traditional food banks. For example, Seth explained how the community gardens provide community members with fresh produce, citing examples from his social media posts and free produce stand. Mo described how more able-bodied people should become involved in community gardening work so the garden can continue to do the important work of food donation. Amanda, Annie, Green, and Zena noted that community gardens can play, and do play, an important role in communal food access and security efforts. Frank told us how the student farm can provide additional opportunities for food distribution, relying on the labor and commitment of college students in working toward food access and security. Since there were no specific pick-up times at the community garden, long lines are not usually an issue. Each participant highlighted the healthy and nutritious nature of the food grown at the community garden, potentially providing a solution to some of the issues of traditional food banks.

Recommendations

This study revealed positive experiences and outcomes of community gardening in both educational and civic settings. However, it is important to note that better educational outcomes should not be the ultimate goal of school-based and community gardening programs. Educators should be preparing our youth to fight for food justice in our local, national, and global community(ies). Taking into account these monumental issues impacting us, our students, and subsequent generations, we must act now. We must work with our students and our local communities to try and address these issues, and school-based and community gardening may be a pathway to make these important changes. Schools and higher education institutions, and agricultural education and extension programs in particular, should embrace school-based and community gardens as sites to allow students to explore, develop, and nurture gardening and civic skills.

Regarding policy goals and recommendations, I advocate for increased funding through grant, government, and volunteer sources to build, expand, and sustain school-based and community gardens in local communities. Also important, we need additional funding for folx to work in these spaces. Considering the aforementioned benefits of community gardens, there are potential benefits in store if more people become involved in gardening spaces. We must prioritize sustainable gardening practices on our path toward food justice, and youth are going to be invaluable assets in this fight for justice.

References

Adler, R. P., & Goggin, J. (2005). What do we mean by "civic engagement"? *Journal of Transformative Education, 3*(3), 236-253. https://doi.org/10.1177/1541344605276792.

Alkon, A. H., & Agyeman, J. (2011). The food movement as polyculture. In A. H. Alkon & J. Agyeman, (Eds.), *Food justice: Race, class, and sustainability*. (1st ed., p. 1-20). MIT Press.

Altieri, M. A. (1998). Ecological impacts of industrial agriculture and the possibilities of truly sustainable farming. *Monthly Review*, *50*(3), n.p. https://doi.org/10.14452/MR-050-03-1998-07.

Berry, T. M. (1988). *The dream of the earth*. Sierra Club Books.

Bhattacharya, K. (2017). *Fundamentals of qualitative research*. Routledge.

Blair, D. (2009). The child in the garden: An evaluative review of the benefits of school gardening. *Journal of Environmental Education, 40*(2), 15-38. https://doi.org/10.3200/JOEE.40.2.15-38.

Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. University of California Press.

Broad, G. M. (2016). *More than just food: Food justice and community change*. University of California Press.

Cloutier, G., Houde-Tremblay E., & Gaudet, S. (2023). Collective urban gardens: Growing, learning and fostering social engagement. *Local Environment: The International Journal of Justice and Sustainability, 28*(11), 1463-1477. https://doi.org/10.1080/13549839.2023.2238725.

Cramer, S. E., & Ball, A. L. (2019). View of wild leaves on narrow STEMs: Exploring formal and non-formal education tensions through garden-based learning. *Journal of Agricultural Education, 60*(4), 35-52. https://doi.org/10.5032/jae.2019.04035.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Sage.

Diaz, J. M., Warner, L. A., & Webb, S. T. (2018). Outcome framework for school garden program development and evaluation: A Delphi approach. *Journal of Agricultural Education, 59*(2), 143-165. https://doi.org/10.5032/jae.2018.02143.

Esposito, L. (2012). Where to begin? Using place-based writing to connect students with their local communities. *The English Journal, 101*(4), 70-76. https://www.jstor.org/stable/41415476.

Fong, K., Wright, R. A., & Wimer, C. (2016). The cost of free assistance: Why low-income individuals do not access food pantries. *Journal of Sociology & Social Welfare, 43*(1), 71-93. https://heinonline-org.proxy2.cl.msu.edu/HOL/Page?handle=hein.journals/jrlsasw43&div=8

Fukuoka, M. (1985). *The one-straw revolution: an introduction to natural farming*. Bantam Books.

Gallavan, N. P. & Bowles, F. A. (2012). School-community gardening: Learning, living, earning, and giving. *Social Studies and the Young Learner, 24*(3), 13-16. https://socialstudies.org/publications/ssyl.

Gamboa, P. A., Nelson, R., Purewal, S., Ezegbe, H., Mathewson, A., Rutty, T., Unnithan, C., & Zandvliet, D. (2023). Community-university partnerships for local impact: Advancing sustainability through place-based education. *Journal of Community Engagement and Scholarship, 15*(2), n.p. https://doi.org/10.54656/jces.v15i2.525.

Gottleib, R., & Joshi, A. (2010). *Food justice*. MIT Press.
Grain. (2007). Corporate power: Agrofuels and the expansion of agribusiness. GRAIN. https://grain.org/en/article/598-corporate-power-agrofuels-and-the-expansion-of-agribusiness.

Gray, T., Tracey, D., Truong, S., & Ward, K. (2022). Community gardens as local learning environments in social housing contexts: participant perceptions of enhanced wellbeing and community connection. *Local Environment, 27*(5), 570-585. https://doi.org/10.1080/13549839.2022.2048255.

Green, J. J., Green, E. M., & Kleiner, A. M. (2011). In A. H. Alkon & J. Agyeman, (Eds.), *Food justice: Race, class, and sustainability*. (1st ed., p. 47-64). MIT Press.
Guthman, J. (2011). *Weighing in: Obesity, food justice, and the limits of capitalism*. University of California Press.

Harper, A. B. (2011). In A. H. Alkon & J. Agyeman, (Eds.), *Food justice: Race, class, and sustainability*. (1st ed., p. 221-238). MIT Press.
Hamel, J., Dufour, S., & Fortin, D. (1993). Case study methods. Sage.

Hoffman, A. J., Knight, L. F. M., & Wallach, J. (2007). Gardening activities, education, and self-esteem: Learning outside the classroom. *Urban Education, 42*(5), 403-411. https://doi.org/10.1177/0042085907304909.

Holland, L. (2004). Diversity and connections in community gardens: a contribution to local sustainability. *Local Environment, 9*(3), 285-305. https://doi.org/10.1080/1354983042000219388.

Holt-Giménez, E. (2011). Food security, food justice, or food sovereignty?: Crises, food movements, and regime change. In A. H. Alkon & J. Agyeman, (Eds.), *Food justice: Race, class, and sustainability*. (1st ed., p. 309-330). MIT Press.

Jones, C., Jarvis, K., & Stewart, H. (2023). The lived experiences of adults with learning disabilities: Taking part in a community gardening group. *British Journal of Occupational Therapy, 87*(2), 98-105. https://10.1177/03080226231198340.

Karrow, D. D., Fazio, X., & Zandvliet, D. (2022). What's in a name? The signifiers and empty signifiers of environmental and sustainability education: Implications for teacher education. *Brock Education Journal, 31*(2), 109-130. https://doi.org/10.26522/brocked.v31i2.917.

Keeter, S., Zukin, C., Adolina, M., & Jenkins, M. (2002). *The civic and political health of the nation: A generational portrait*. College Park, MD: Center for Information and Research on Civic Learning and Engagement (CIRCLE), School of Public Policy, University of Maryland.

Kelly, V., & Brannlund, E. (2024). "I learned this in the gardening group:" The impact of a community garden on children and their families' eating habits. *Irish Educational Studies*, *43*(2), 1-16. https://doi.org/10.1080/03323315.2024.2314312.

Kingsley, J., Foenander, E., & Bailey, A. (2019). "You feel like you're part of something bigger:" Exploring motivations for community garden participation in Melbourne, Australia. *BMC Public Health, 19*(745), 1-12. https://doi.org/10.1186/s12889-019-710803.

Langhout, R. D., Rappaport, J., & Simmons, D. (2002). Integrating community into the classroom: Community gardening, community involvement, and project-based learning. *Urban Education, 37*(3), 323-349. https://search-ebscohost-com.proxy2.cl.msu.edu/login.aspx?direct=true&db=eric&AN=EJ660356&site=eds-live.

Lekies, K. S., & Eames-Sheavly, M. (2008). Evaluating an initiative to increase youth participation in school and community gardening activities. *Journal of Youth Development: Bridging Research and Practice, 3*(2), 119-125. https://doi.org/10.5195/jyd.2008.313.

Mares, T. M., & Peña, D. G. (2011). Environmental and food justice: Toward local, slow, and deep food systems. In A. H. Alkon & J. Agyeman, (Eds.), *Food justice: Race, class, and sustainability*. (1st ed., p. 197-220). MIT Press.

McCormack, C. (2000). From interview transcript to interpretive story: Part 1 - Viewing the transcript through multiple lenses. *Field Methods, 12*(4), 282-297. https://search-ebscohost-com.proxy2.cl.msu.edu/login.aspx?direct=true&db=ant&AN=555815&site=eds-live.

McKim, A. J., Raven, M. R., Palmer, A., & McFarland, A. (2019). Community as context and content: A land-based learning primer for agriculture, food, and natural resources education. *Journal of Agricultural Education, 60*(1), 172-185. https://doi.org/10.5032/jae.2019.01172.

Mead, G. H. (1934). *Mind, self, and society*. University of Chicago Press.

Mecham, N. A., & Joiner, L. R. (2012). "Even if we never ate a single bite of it, it would still be worth it:": College students' gardening experiences. *Journal of Ethnographic & Qualitative Research, 6*, 231-242. Accessed on June 5, 2024 from https://eds-p-ebscohost-com.proxy2.cl.msu.edu/eds/detail/detail?vid=0&sid=eb368af5-cb4b-400e-8bec-d609cfce4d64%40redis&bdata=JnNpdGU9ZWRzLWxpdmU%3d#AN=EJ981644&db=eric.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation* (3rd ed.). Jossey-Bass.

Minkoff-Zern, L-A., Peluso, N., Sowerwine, J., & Getz, C. (2011). In A. H. Alkon & J. Agyeman, (Eds.), *Food justice: Race, class, and sustainability*. (1st ed., p. 65-86). MIT Press.

Morales, A. (2011). In A. H. Alkon & J. Agyeman, (Eds.), *Food justice: Race, class, and sustainability*. (1st ed., p. 149-176). MIT Press.

National Council for the Social Studies (NCSS). (2016). A vision of powerful teaching and learning in the social studies. *Social Education, 80*(3), 180-182. https://www.socialstudies.org/social-education/80/3.

Nelson, R. E. (2021). Developing evaluable principles for community-university partnerships. *Journal of Community Engagement and Scholarship, 14*(1), 1-19. https://doi.org/10.54656/JDGK9182.

Nestle, M. (2002). *Food politics: How the food industry influences nutrition and health*. University of California Press.

Norgaard, K. M., Reed, R., & Van Horn, C. (2011). In A. H. Alkon & J. Agyeman, (Eds.), *Food justice: Race, class, and sustainability*. (1st ed., p. 23-46). MIT Press.

Okvat, H. A., & Zautra, A. J. (2011). Community gardening: A parsimonious path to individual, community, and environmental resilience. *American Journal of Community Psychology, 47*, 374-387. https://doi.org/10.1007/s10464-010-9404-z.

Porter, C. M. (2018). Growing our own: Characterizing food-production strategies with five U.S. community-based food justice organizations. *Journal of Agriculture, Food Systems, and Community Development, 8*(1), 187-205. https://doi.org/10.5304/jafscd.2018.08A.002.

Salari, M., Kramer, M. R., Reyna, M. A., Taylor, H. A., & Clifford, G. D. (2023). Combining crowd-sourcing, census data, and public review forums for real-time, high-resolution food desert estimation. *BioMedical Engineering OnLine, 22*(69), 1-19. https://doi.org/10.1186/s12938-023-01108-9.

Saltmarsh, J. (2005). The civic promise of service learning. *Liberal Education, 91*(2), 50-55. https://www.aacu.org/liberaleducation/le-sp05/le-sp05index.cfm.

Sbicca, J. (2018). *Food justice now!: Deepening the roots of social struggle*. University of Minnesota Press.

Schocker, J. B., Zook, C., & Hummel, D. (2016). Growing citizenship: Confronting the "civic empowerment gap" with a garden project. *Social Studies and the Young Learner, 28*(4), 27-31. https://www.socialstudies.org/social-studies-and-young-learner/28/4.

Schwartz, N., Buliung, R., & Wilson, K. (2019). Disability and food access and insecurity: A scoping review of the literature. *Health and Place, 57*, 107-121. https://doi.org/10.1016/j.healthplace.2019.03.011.

Singh, W. (2017). Gauging the impact of community university engagement initiatives in India. *ASEAN Journal of Community Engagement, 1*(1), 1-16. https://doi.org/10.7454/ajce.v1i1.55.

Sobel, D. (2004). *Place-BASED education: Connecting classroom and community*. Orion Society.

Stake, R. E. (2005). *Multiple case study analysis*. Guilford Press.

Strauss, A., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Sage.

Sturrock, G., & Zandvliet, D. (2018, October 9-13). School learning environments and long-term outcomes related to community and civic engagement [Paper presentation]. North American Association for Environmental Education 47th Annual Conference, Spokane, WA, United States.

Torney-Purta, J., Cabrera, J. C., Roohr, K. C., Liu, O. L., & Rios, J. A. (2015). Assessing civic competency and engagement in higher education: Research background, frameworks, and directions for next-generation assessment. *Educational Testing Service Research Report*. https://doi.org/10.1002/ets2.12081.

Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry,* https://doi.org/10.1177/1077800410383121.

VanDevelder, M., Johnson, K., & Thompson, A. R. (2015). Dig it! The versatility of the community garden. *Advances in Educational Administration, 23*, 343-362. https://doi.org/10.1108/S1479-366020140000023017.

Whyte, K. (2018). Settler colonialism, ecology, and environmental injustice. *Environment and Society: Advances in Research, 9*, 124-144. https://doi.org/10.3167/ares.2018.090109.

Yin, R. K. (2003). *Case study research: Design and methods*. Sage.

Zandvliet, D. B. (2012). Development and validation of the place-based learning and constructivist environment survey (PLACES). *Learning Environments Research, 15*(2), 125-140. https://doi.org/10.1007/s10984-012-9110-x.

Zurawski, E. (2023). Materializing the metaphor: Theorizing the food desert as a sociospatial-legal instrument in the production of space. *Human Geography, 16*(3), 286-298. https://doi.org/10.1177/19427786231173631.