

COMMUNITY AND SCHOOL GARDENS:
IMPACT OF EDUCATIONAL PROGRAMS ON THE HOUSEHOLD

By

EMMA HOPE CLAPICK

A Thesis Submitted to The W.A. Franke Honors College

In Partial Fulfillment of the bachelor's degree

With Honors in

Sociology

THE UNIVERSITY OF ARIZONA

MAY 2023

Approved by:

Professor Brian Mayer
School of Sociology

ABSTRACT

Community and school gardens offer undeniable benefits including immediate and long-term access to affordable and healthful foods, however, the limited amount of and lack of research available about the familial impacts highlights a significant gap in general knowledge on the subject. This research paper presents the findings of a survey conducted at the Tucson Village Farm and Manzo Elementary School to examine the impact of community and school gardens on households. The study aimed to determine if families are utilizing the information their children learn in gardening programs. An anonymous survey was sent out to families of students in the Little Sprouts program at Tucson Village Farm and a few classrooms of students at Manzo Elementary School. The results indicate that there are positive attitudes towards these gardening programs, as families note that they provide a sense of community, connectivity to fresh foods and produce, structured outdoor and agricultural activities, and opportunities to learn social-emotional and life skills. Moreover, these gardens also provide avenues for families to connect and engage in activities together. The findings suggest that schools and educational organizations can serve as catalysts by providing resources, tools, and materials that families can use to actively participate in gardening practices in their households. This study highlights the potential of gardening programs to positively impact households and improve the overall health and well-being of families.

INTRODUCTION

Food insecurity is a global issue leaving many American households without the ability to provide enough food for each person in the household to live a healthy life. Since the COVID-19 pandemic, food insecurity has been a hot topic of conversation as The World Bank's 2020 'Food Security and COVID-19' brief indicates that "265 million people worldwide could face acute food insecurity by the end of 2020, up from 135 million people before the COVID-19 crisis" (Pullen 2020). Food insecurity can lead to health problems, birth defects, mental health problems, depression, poor sleep, diabetes, hypertension, etc. In the beginning half of 2017, 14% of Arizonans were considered food insecure; that is almost a million people. Within the Western region of the United States, Arizona was the third most food insecure. "Tucson, Arizona had the fourth-highest percentage of food insecurity at 13.6%" which equates to about 137,450 people (Pullen 2020). When discussing food insecurity, it is important to take a look at access to food, which can be seen as proximity to grocery stores. Data shows that Tucson community members live in food deserts or low-income neighborhoods with grocery stores at least one mile away.

As a response to national food supply issues during the COVID-19 pandemic, many American consumers turned to local food systems such as community gardens to provide the community with produce. Smaller gardens offer low-income communities' ways to access affordable fresh food (Owen, Kinkaid, Bellante, and Maccabe). One place where these gardening programs exist is within educational institutions. A plethora of research has proven school gardens benefit students in ways ranging from strengthening academics to personal and social skills. Specifically, school gardens allow children to develop in areas such as nutrition, leadership, critical thinking, social-emotional learning, decision-making, and more. This study explores the benefits of community and school gardens in the household. My hypothesis is that

students want to explore the topics they learn in the garden with their family members, so I assume they bring this information home with them. My curiosity wanted to delve into the depth of this hypothesis. I wanted to see what the families think about the gardening programs, if the families want to develop gardening practices in their homes, and what they need from the educational institutions to successfully implement these healthy living practices in the household. This study examines the observations of the families of the students involved in the Tucson Village Farm and Manzo Elementary School Gardening programs.

LITERARY REVIEW

Regarding the inquisition of the impact of school and community gardens on the household, little to no information exists. Instead of finding specific information about that topic, I had to find resources that relate to it, such as parent involvement in the school gardens and the intersection of gardens and community. With this information, the intention is to support how community and school gardens are also beneficial to the student's household.

Author of "Food for Thought: The Intersection of Gardens, Education, and Community at Edible School Yard New Orleans," Stephanie Fakharzadeh, discusses the Edible School Yard New Orleans (ESYNOLA) at the school Green Charter. Due to the social and environmental issues in New Orleans, school systems are struggling. The ESYNOLA program was created with the intention of bringing "fresh food, high-quality education, and a renewed sense of community to its students after Hurricane Katrina" (Fakharzadeh 176). With 98% of the Green Charter students living below the poverty line, 94% of the students qualifying for free lunch, 3% qualifying for reduced lunch, and the overall lack of access to healthy food, the ESYNOLA

program became a critical part of the student's education. Before programs such as ESYNOLA were advocated for, students in communities such as this one relied on corner stores, gas stations, and fast-food restaurants for affordable food. ESYNOLA was able to staff its own program members for programs such as cooking classes, gardening courses, and Food ABCs where students are able to taste healthy foods that began with the letter of the alphabet they are learning. , ESYNOLA explored opportunities for students to grow and harvest their own food which allowed students to engage with phenology while also impacting the students' food choices. The community and parents were able to be involved through months of meetings about garden design and groups of community members volunteering to help with hard labor tasks. Additionally, volunteers, parents, retirees, and college students would come in every week to assist with classes related to ESYNOLA. In return for their participation, community members were given access to the garden, produce, and meals.

The second piece I will discuss, *Growing Minds: Gardening and Parent Involvement in Elementary Schools* written by Roxanne Boyer, Amy L. McFarland, Jayne M. Zajicek, and Tina M. Waliczek, measures parent involvement at their child's school after implementing a school gardening program. Two items questioned in this piece “determine if a child’s participation in school gardening activities changed parent attitudes toward the school” and “determine if a child’s participation in school gardening activities increased parent involvement” (Boyer, McFarland, Zajicek, and Waliczek 9). Findings include that parent involvement was important to creating a non-violent community, parent involvement contributes to the students’ positive attitude toward the school, and parent involvement at the school correlates to engaging in educational activities in the household. The takeaway of this piece is that parents of all backgrounds are able to commit to participating in a school garden. Gardening is one of those

activities where different skills and abilities are needed, and parents can use their funds of knowledge to help their child succeed at school. Parents have real-world knowledge and experience that is pertinent to curating a welcoming and comfortable school gardening program for the students, teachers, parents, and other community members.

Although these sources do not precisely examine the impact of community and school garden programs on the household, they provide evidence that community members, family members, and parents can also benefit from participating in gardening activities. The two local Tucson, Arizona gardens, Tucson Village Farm and the school garden at Manzo Elementary School, provide culinary courses, gardening activities, food literacy classes, and more in which students are able to bring this information home. The already existing and established programs like the ones listed above from the readings and the two local gardens examined in this study can become catalysts for providing the community with resources needed to explore gardening in the household. The question I propose asks how educators and educational programs can provide our students and their families with the necessary resources so they can successfully and actively participate in gardening practices in their households.

METHODS

The purpose of the survey is to gain input on how community and school gardens impact households. The population of interest for this study is families of students who are participating in school and community gardening programs. The sample I surveyed consists of 16 participants from Tucson Village Farm and Manzo Elementary School. To gain the most participation, I created flyers with a link and QR code that take the respondent to an anonymous Qualtrics Survey. I gave flyers to six teachers to hand out to their students at Manzo Elementary School, I

put the flyer in Manzo Elementary School's weekly newsletter, and I handed out flyers to parents of students in the Little Sprouts Program at Tucson Village Farm. The questions asked in the survey range from open-ended questions, multiple choice questions, Likert scale questions, and questions about the demographics of the participants. Essentially, I utilized many types of questions in order to gain a deeper understanding of how the families and parents surveyed view the programs that their children are involved in. The open-ended questions helped me to gather meaningful information as I was able to receive feedback from the families and parents. These were the questions I was most interested in. I made sure that the open-ended questions were spaced out in the survey; I did not want to overwhelm the respondents. Even though, it was harder to compile and analyze these types of questions, I believe they were extremely beneficial in this type of study to ensure the families' opinions, points of view, and needs were being addressed.

Types of Questions Asked



Open-Ended

- What is your opinion on the school/community garden?
- What do you think your child/children like most about the school garden?
- What tools, resources, or materials could the school give you to help incorporate healthy foods and gardening into your household?



Likert-Scale

- How often:
 - Everyday
 - A few times a week
 - Once a week
- How important:
 - Not important
 - Moderately Important
 - Very Important



Multiple Choice

- Yes and No:
 - Examples:
 - Does your child ask to help prepare food in the household?
 - Does your household grow your own food at home?



Demographic

- Race
- Ethnicity
- Household Income
- Level of education

FINDINGS

Families' Observations

The community and school garden survey displays at least four major points as to what parents and family members of the students like most about the garden. The survey reveals the parents notice: 1) a sense of connectivity to the community, 2) connectivity to fresh food and produce, 3) a structured agricultural outdoor activity, and 4) the learning of social-emotional skills. These points indicate several reasons how a community or a school garden can impact the household.

Included in the community and school gardens survey, I requested the parents and family members to describe the garden experience in a few words. Below, a word map supports the survey's findings which disclose that the community and school gardens provide a place for communities, families, and students to engage in a gardening program. Community and school gardens create a welcoming environment for parents to become involved in their children's education. One parent stated "I like sharing an experience with my child at the school garden. There is a strong sense of community at the Tucson Village Farm that I appreciate." Most of the parents surveyed at Tucson Village Farm had children during the start of the pandemic. Other families responded to the survey saying, "I like that it is something that I can do with my child outside." The survey shows that the gardens are a means of welcoming parents into the educational environment. Parents who are involved in gardening programs are more likely to continue this type of education with their children at home (Boyer, McFarland, Zajicek, and Waliczek 10).



Manzo Elementary School and Tucson Village Farm both provide food literacy programs where students can taste the food grown in the garden, engage in cooking classes, and participate in gardening courses. Essentially, the overarching similarities between both the gardens in Tucson and those at ESYNOLA include providing students with the opportunity to harvest their own food and creating experiences for students to make healthy food choices. Families surveyed reveal that the gardening program connects their kids to their food. One parent noted, “The kids are more willing to try new foods when they come from the garden, and they are a part of the process.” Data shows that parents and family members are noticing their children are receiving an opportunity to explore harvesting, try foods right from the garden, and understand how to utilize the produce in recipes at home. Edible School Yard New Orleans (ESYNOLA) Green Charter School provides the children with an opportunity to harvest their food which in turn

impacts their food choices (Farkharzadeh 182). Other research does not show how these school gardens are impacting households' choices of food, but from the Community and School Garden survey, it is evident that the information students are learning from the garden is coming home with them. 100% of survey participants said their child is curious about healthy foods like fruits and vegetables, and 100% of the participants also stated that their child discusses what they learned about food and gardening in the household. The next step to continue the discussion of produce and healthy food choices in the students' households is to ensure that families receive tools, resources, and materials to incorporate healthy foods and gardening into their household conversations and practices.

Parents and families are recognizing the hands-on learning taking place, which indicates that “gardening could also be one hands-on activity in which parents of different backgrounds can be cognizant of their abilities to help their child’s success, and in which parents may have real-world experience, skills, knowledge” (Boyer, McFarland, Zajicek, and Waliczek). The gardening programs are integrated into the curriculum of classrooms at Manzo, and Tucson Village Farm is an educational resource where families can come to participate in farming activities. As discussed above, the gardening programs surveyed here in Tucson, Arizona invite students to be a part of the gardening process. The students are encouraged to participate in activities such as learning to plant seeds, harvesting, composting, cooking, etc. According to the Tucson parents and families, this outside structured activity motivates students to actively engage with the materials around them with an open mind. The structured outdoor activities also delve into topics related to ecology, desert agriculture, phenology, and healthy eating. The takeaway from having a specific program dedicated to food and agriculture is knowing that the students receive informal learning experiences that are beneficial to them throughout their lives.

Knowing food production is a source of controversy in our society, students are receiving knowledge from an early age that will allow them to make smart decisions regarding food, where it comes from, and how it can fuel one's body.

Ultimately, the takeaways show that along with the gardens providing a space for students to explore hands-on skills surrounding fresh produce, the community and school gardening programs also contribute to ideas such as “the kids can practice sharing, respect, and responsibility” and “a place where the students “stay open to the world around them” (Families surveyed). Social-Emotional Learning (SEL) “is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions” (Weissberg, Durlak, Domitrovich, & Gullotta, 2015). SEL focuses on skills such as relationship skills, decision-making, self-awareness, and self-management. These skills are crucial for students to acquire while in school. Manzo Elementary School initially implemented its school garden to support school psychologists. Moses Thompson, hired by Tucson Unified School District ten years ago, was hired as Manzo Elementary School’s school counselor. Rather than sitting down in an office with students who needed support, he began taking them to a garden down the street where they could connect with nature and talk. The garden programs allow students to get outside which has been great for students' mental health - especially after returning to school post-pandemic. SEL instruction can be established in educational settings by ensuring that there is an emphasis on care-based learning. This promotes engagement, less emotional stress, positive classroom behavior, and improved attitudes about self (Lohr, Krause, McClelland, Gordon, Gerald... 371). Tucson Village Farm and Manzo Elementary School have proven to families that they both

provide such a space for students. Getting children to connect with nature and one another has shown families that their children are ready to take on responsibilities, follow instructed tasks, share with their peers, assist their peers, and take on self-accountability.

Families' Participation in Gardening Activities in the Household

Parents surveyed discovered that the community and school gardens provide tools, resources, and materials that help incorporate healthy foods and gardening in the household. Many participants responded by noting recipes are a helpful tool in their households. The snacks and meals made with and by the students are kid-friendly and easy for the families to reproduce at home. This means that the students can be a part of the household's cooking and meal preparation process. One family member surveyed stated “We love all the snacks you guys make and provide – so getting all of those recipes is huge! Perhaps, seasonally releasing new recipes, too with local items we can get at the farm.” Community members disclosed a need and desire for recommendations on where to purchase local produce affordably. Additionally, other resources the surveyed families requested include gardening tools, such as how to garden better, how to set up a garden at home, what and when to plant, and seeds or starter plants to be the catalyst for their at-home garden. Lastly, some members surveyed answered this question by asking for handouts about what the gardens did or what topics were discussed. They proposed discussion topics to be sent home weekly.

The purpose of asking community members what tools, resources, and materials they could use in their households was to prompt them for the next question – What are some ways you can use the topics your child is learning in the community and school gardens in your home?

The responses varied. The results can be compiled into four groups – 1) Recipes, 2) Gardening and connection to food, 3) Connection to the outdoors, and 4) Practicing life skills.

Table 1: Shows the frequency of topics in families surveyed.

Recipes	Gardening/Connect to Food	Connection to Outdoors	Life Skills
7	7	3	6

Many family members recorded they can use recipes as a way to connect their children with food. They can cook together, talk about where food comes from, learn how to prepare food differently, and talk about what parts of the plants they eat. Cooking with children educates and empowers them to make healthy choices through hands-on learning. By modeling for their children, families, and parents can excite their children to become a part of the cooking and food preparation experience. Additionally, families that incorporate these recipes in the household are exposing their children to new flavors while expanding their palates. Other responses included gardening, planting, caring for living things, and learning to take care of the natural environment. Parents and families disclose that the tools these gardens provide have the potential to aid in their gardening process. These tools help families plant, know what foods are in season, understand what seeds they can cultivate at home, show students where food comes from, and instruct how to care for living things such as plants and animals. These survey results relay that families see gardening as a way to connect with the idea of healthier eating. Kids are exposed to more fresh foods and vegetables, and there will be a willingness to taste foods they are unfamiliar with. By

practicing these gardening skills with the students in the household, children and their families find a connection to what they are eating. Being a part of the growing, harvesting, and food preparation process allows the students to witness the care and dedication it takes to consume consciously. The third takeaway from the survey revealed that families believe they can cultivate an environment where their children will become connected to the outdoors. Utilizing the tools presented in community and school gardens allows families to encourage their children to spend time outside. One respondent said, “My daughter talks about farm class all the time... and how fun it is to spend time outside at the farm.” Another respondent stated, “We can talk about our day and connect our meals to our garden experience.” The takeaway of these results shows that parents are encouraged to spend time with their children outside and connect with their natural environment. Children are prone to spending time indoors, and when families prioritize spending time outside, getting their children outdoors, and having planned activities where they can engage with the natural world, the students get the opportunity to explore and enjoy the outdoors. Overall, the gardening experience allows students to take on some responsibility. Kids are able to practice their follow-through on tasks. They can show their autonomy in settings where they have assignments. When parents and families incorporate gardening tools in their households, children can display responsibility skills and what it takes to have a fruitful and healthy garden. The work is meaningful as they get to prove their skills to their families and to themselves. One participant mentioned having a responsibility chart that holds their children accountable to be active members of the family and models what it looks like to be a responsible member of the community and school gardens. This is an example of how families can promote the practicing of children’s life skills such as being responsible and completing assigned chores or tasks

outdoors. Some practical examples of this could include helping to collect compostable material, weeding, harvesting fruits and vegetables, watering plants, or digging holes to plant seeds.

Gardening at Home and Income

Participants in this survey were asked to answer the following: Do you think your child is curious about healthy foods like fruits and vegetables? How often does your family eat fresh fruits and vegetables? And how often do you purchase fresh fruits and vegetables when you shop? All of the participants indicated that their children may be or are curious about healthy foods. Additionally, 50% of the participants surveyed said that their families always eat fresh fruits and vegetables, and 50% stated that their families eat fresh fruits and vegetables very often. Regarding the purchasing of fresh fruits and vegetables, 75% of the respondents always purchased fresh produce, while 25% of the respondents indicated that they purchase fresh produce very often. With the idea that fresh fruits and vegetables in the household are of importance to these families, I inquired about families growing food at home. Out of the 16 participants, 75% of respondents do not grow their own food. Of the respondents who grow their own food, 50% make over \$100,000 annually, 25% annually make between \$35,000-\$49,000, and 25% make less than \$20,000 per year. Of the participants who responded “yes” to growing their own food at home, 75% are white and 25% identify as Hispanic/Latino. Statistically, over half of the United States home gardeners make an annual income of \$75,000 or more (USDA). The significance of this statistic reveals that people with higher incomes may have access to more gardening resources and opportunities than those with lower incomes. Folks who make a higher income typically have more space to garden, access to better equipment and tools, access to more resources, more available time, and advanced education or knowledge. According to the

2021 Garden Media Garden Trends Report, people who garden in America spend \$47.8 billion in lawn and garden sales. That means an average household spends around \$503 on gardening goods. Financially, this is not reasonable for every household to partake in, even if it eventually saves money on produce. People with high incomes are able to afford higher quality tools (i.e. irrigation systems, rainwater harvesting systems, etc.). Other resources that need to be purchased include soil, pest control, seeds, and items to build a garden space. People with higher incomes may be more likely to have access to education or financial resources to help them learn more about gardening, which is a benefit to a successful garden. I hypothesize that if children are subjected to this type of knowledge and information, they will bring it home to help grow food in their household environments.

CONCLUSION

As this idea of community and school gardens' impact on households has not been deeply explored elsewhere, I am confident that the data collected from the Community and School Garden Survey is able to help educational gardening programs support their families' households. Overall, it is clear that Tucson Village Farm and the school garden at Manzo Elementary School provide a positive environment for students and families by promoting a sense of community, food security, structured outdoor learning, and an environment to practice life skills. Ultimately, community and school gardens invite parents into a field of education or an informal educational setting. Parents who become involved in this aspect of their children's educational experience are more likely to continue these practices in their households. The Community and School Garden Survey discloses that information learned in the educational gardens goes home with the students, which indicates students want to continue the discussion at

home. The ultimate goal of the survey is to deduce how these educational gardening programs can support families and communities with the tools, resources, and materials needed to continue these healthy food conversations and practices in the household. In theory, in schools and informal educational programs, educators should provide resources to the families by sending students home with recipes, materials to start small gardens, and instructions on how and when to specifically grow and harvest, while providing seeds to families, offering produce at a reduced cost, or even offering opportunities for parents to come into the food literacy centers. If given the tools, this could lead to families incorporating gardening activities into their at-home lives more frequently. The purpose of providing these tools and materials to the families involved at the educational organizations is to begin a streamline of conversation and connectivity with the students about the ways gardens provide outlets for themselves and their communities.

The study has a few limitations including the sample size that answered the survey. The survey was only for family members who were willing to participate, which means that those parents not responding are not represented in any way. This leaves out demographics of families that attend Tucson Village Farm classes and families of the students at Manzo Elementary School. It seems that those who responded to the survey had a fairly favorable view of the gardening programs being examined.

Noting the limitations above, in the future, this research has the possibility to transform into a much larger study. A research study on the impact of community and school gardens on the household has immense potential to offer valuable insights into how gardening activities and healthy food practices can be incorporated into families' lifestyles. This topic has not been explored in detail, but studies do show that parent involvement in these environments benefits their students. Future studies with a larger sample size can help provide a more comprehensive

understanding of the subject. If I were to develop the same study once more, I anticipate that findings with a larger sample size would enhance the effectiveness of providing resources in order to help families adopt healthy habits. The impact on families and parents is considerable as it would lead to a strong sense of community with families sharing this common experience related to gardening and healthy living. It is my hope that future researchers will continue this to further advance our understanding of how community and school gardens can promote healthy lifestyles for students and their families.

REFERENCES:

Boyer, Roxanne, et al. "Growing Minds: Gardening and Parent Involvement in Elementary Schools." *Journal of Therapeutic Horticulture*, vol. 21, no. 2, 2011, pp. 8–27.

Fakharzadeh, Stephanie. "Food for Thought: The Intersection of Gardens, Education, and Community at Edible School Yard New Orleans." *Children, Youth and Environments*, vol. 25, no. 3, 2015, pp. 175–187., <https://doi.org/10.7721/chilyoutenvi.25.3.0175>.

"Food and Nutrition Security." *USDA*, <https://www.usda.gov/nutrition-security>.

Mayers, Katie. "Gardening Statistics in 2023 (Incl. Covid & Millennials)." *Garden Pals*, 23 Mar. 2023, <https://gardenpals.com/gardening-statistics/#:~:text=55%25%20of%20American%20households%20engage,and%20gardenin%20equipment%20each%20year>.

Owen, Gigi, et al. *State of the Tucson Food System - Center for Regional Food Studies*. CLIMAS, 2020, <https://crfs.arizona.edu/sites/crfs.arizona.edu/files/CRFS%20Interim%20Report%202020%20V4%20Eng%20copy.pdf>.

Pullen, Jennifer. "How Food Insecure Is Tucson?" *MAP AZ Dashboard*, 17 July 2020, <https://mapazdashboard.arizona.edu/article/how-food-insecure-tucson>.