



This honor's thesis aims to study school-aged children's engagement in a gardening-based nutrition education program, using tenets from political economy and health and social inequality. This research is embedded in a larger project that evaluates the effectiveness of the "15th Street Farm Nutrition Education Program" (NEP). The NEP is a two-year program funded by the USDA in association with the USF Center for the Advancement of Food Security and Healthy Communities (CAFSHC), the USF Metropolitan Food Project, and 15<sup>th</sup> St. Farm in St Petersburg. The NEP seeks to provide a farm-based nutrition education program to children, families, and teachers, increase

The research questions are:

1. Are gardening activities enough to engage school-aged children and bring awareness about healthy food habits?
2. What would enhance children's engagement in school-based gardening projects and motivate them to try new types of vegetables?
3. What would motivate children to want to raise fruits and vegetables at home if the economic factor is an impediment?
4. Are hands-on gardening activities enough to engage school-aged children and improve their well-being and socialization?
5. What are the most effective approaches to providing information to school-age children about gardening and nutrition?

Approximately 10,000 years ago, agriculture became the primary livelihood for almost 2.6 billion people worldwide (Convention on Biological Diversity, 2018<sup>1</sup>). The transition from hunter-gatherers to agriculture changed human life, health, and culture. A sedentary lifestyle had many effects on humankind, such as group expansion, stratification of labor, change of social organization, the formation of a political state, and administrative and economic structures coming into place, among others (Milner, 2023). Furthermore, the domestication of

---

<sup>1</sup> 2.6 Billion People Draw Their Livelihoods Mostly from Agriculture | Convention on Biological Diversity  
November 2018 <https://www.cbd.int/article/biodiversity-for-food>

animals and crops brought major changes in diet; not getting enough diverse nutrients impacted negatively human health outcomes. Moreover, as the population grew having to feed more people required changes in the food system and distribution over time. Along with the economic impact of land distribution and labor, agriculture brought changes in power



insecure, and 35.3% of households with incomes below the federal poverty line being food insecure<sup>2</sup>. Given these high percentages, it seems that policymakers are not adequately addressing nutrition and food insecurity by. According to Oltersdorf (2003), policymakers assume that food decisions are made exclusively based on personal and cultural preferences, without taking into account any other factors, such as economic and social influences. He asserts that most of the nutrition programs of the past century were based on such understanding and proved to be unsuccessful. The author emphasizes that in addition to disparities in the food



According to Food & Research Act on Center<sup>3</sup>, there is a high correlation between food-insecure populations and reduced life expectancy, with as much as a 4.5%-year gap at birth comparing countries from higher to lower socioeconomic ranking. In addition to having chronic diseases, poor people have higher expenses in health care and frequently must choose between "eat or treat" (2017,2). Moreover, cognitive development and social skills in children are directly related to nutrition and food insecurity. Children who grow up in poverty experience traumatic experiences, and consequently continuous and toxic stress, interfering with brain and mental development (Food & Research Act on Center,2017). As stated by Jyot , et al. (2005) food insecurity was associated with lower academic scores, lower academic performance, absenteeism, tardiness, visits to a psychologist, anxiety, aggression, and difficulty interacting with peers. Also, food-insecure households do not have access to diverse and nutritious food regularly, and in addition to changes in habits of physical activities obesity is considered an epidemic in younger children along with diabetes (Jared, 1987).

The report of 2020 – 2021 from the National Survey of Children's Health (NSCH), cited by Williams and Burns (2023), indicates that 17% of children ages 10-17 in the U.S. have obesity. The statistics on children and adults on Medicare by BFF report " Over one-quarter (26.0%) of Medicaid children have obesity compared with 11.4% of children with private insurance alone" (Williams & Burns,2023). Food insecurity coupled with obesity is categorized as one side of the double burden of undernutrition and household insecurity (Gubert et al. 2016).

---

<sup>3</sup> "Hunger & Health: The Impact of Poverty, Food Insecurity, ..." Food Research and Act on Center, December 17, 2017.



It is pertinent to acknowledge the social dimension of food because school-aged children dependently rely on household income, food traditions, and resources for nutrition and food intake. As Mintz and Du Bois state, ethnographers have identified numerous ways to study how humans connect food to rituals, symbols, and belief systems. Through food relationships can be reaffirmed or transformed (2002). Furthermore, children can influence their immediate social group and family with their experience and knowledge in gardening, maybe even taking some vegetables or seeds home (Allen et al, 2008).











This research was embedded in a larger project -the 15<sup>th</sup> Street Nutrition Education Program (NEP) The NEP seeks to provide a farm-based nutrition education program to children, families, and teachers; increase awareness about the local food system; and renovate school gardens.

The NEP is a two-year program funded by the USDA and implemented by the 15<sup>th</sup> Street Farm in association with the USF Center for the Advancement of Food Security and Healthy Communities, the USF Metropolitan food project. The NEP has three main objectives: educate students in partnering schools on gardening and environmentally friendly agriculture practices through a designed curriculum. Help and allow the schools to build or reconstruct their school gardens with expert assessment. Finally, educate communities on the food-growing ecosystem and healthy eating. Additional to the participating schools 15<sup>th</sup> St Farm is an Urban farm and a food center in downtown St. Petersburg. (Roa, 2023).

The NEP gardening and nutrition education program in one of the participating schools was a six-month enrichment class, from August to December, and from January to June, so two different groups of students participated in the program in one school year, while in the other schools, it was offered throughout the school year. In the schools, the gardening lessons and







be improved. The interviews with the instructors were conducted at the garden site. Those of the teacher and the school director were in the classroom and in the director's office, respectively. Regarding the duration of the interviews averaged one hour. However, the director's interview lasted twenty minutes due to his busy schedule.

Qualitative data recorded from the interviews were analyzed by listening to the audio recordings, identifying overall themes, and comparing the occurrence of themes across participants.

Most of the data for this thesis were collected through systematic observations of the day-to-day activities performed as part of the NEP. During the lessons, I observed behaviors previously defined as the reflection of engagement in gardening activities. The interactions between the students and the instructor/teacher were observed also. Behaviors such as participation, as

Db

activities, followed by learning cycles

the garden and nutrition and diet surveys were administered as post-tests at the end of the semester.

Observation of the neighborhood and area of two of the sites of this research were conducted as a way of identifying aspects of the community in which the program is physically embedded. Houses, sidewalks, front yards, lawn maintenance, and parking spaces were recorded. In addition, I observed the accessibility of convenience and grocery stores, as well as other public and health services such as pharmacy, parks, health centers and resources that have a direct impact on the wellbeing of the population in the area.

The results presented below are based on neighborhood characteristics, participant observation of the NEP educational activities, interviews conducted with personnel involved in the program, and pre and post-test surveys completed by the students.

This research and the NEP program were conducted in St. Petersburg, Florida, with five participating schools. These included one private middle school, one charter elementary middle school, one public elementary school, and two after-school programs. The observations took place during Fall 2022 and Spring 2023.

In 2023, 15th St Farm became "15th St EcoFarm" with the addition of a commercial kitchen and event space." <sup>4</sup> The farm is located in downtown St. Petersburg and serves the community by providing fresh vegetables and nutrition education programs and will soon offer cooking classes and events. It offers tours "where residents go to reconnect with nature, to discover the true taste of organically grown food." <sup>4</sup> As stated by its founder Emmanuel Roux, "A farm is a community asset. It is a place where people come and work on the farm, but also socialize. It also has a therapeutic effect. It has many benefits," Its main purpose is "to teach agricultural science and implement it in the classroom for students, parents, and teachers living/working in



From these observations of the area, it can be inferred that one of the two areas has greater economic constraints, with limited walking access to convenience stores and no supermarkets in the area, only accessible by car. Although it cannot be classified as a food desert, it hinders the quality of life and the possibility of obtaining healthy food. This physical description evidence how economic factors are determinants of food accessibility and availability for low-income households.

The following section includes a brief description of each center's school philosophy statement (taken from the center's website), as well as a general overview of the physical infrastructure of the garden and the center, in addition to the characteristics of each center according to GreatSchools reviews and rankings within the state of Florida. (See Table 1). For the after-school programs, there are no GreatSchools.com reviews or ratings available.





the director's office are located in the main office, with two reception desks. The door remains open for students and visitors, and they are equipped with an electronic keypad for visitors and employees to sign in. As for the office and furnishings, they are in good condition and well decorated.

Site B offers the after-school program as a family service center that "was founded on land donated by the Catholic Diocese with the active participation of community members, private donations and coalition with many organizations." The community center with after-school activities, and other services provides educational enrichment programs, homework help, and tutoring for children aged 6 to 14" (Center's website). This center shares its name with a K-8 International Baccalaureate (IB) school, which is a Magnet School of Choice. Unfortunately, no further reports or demographics of the center are available or known, other than the fact that it was created to serve the African American population.

gated. There is a traffic circle for dropping off children and one of the gardens is located in the

This research project included a selected sample of approximately 64 school-age students from the five schools described above that participated in the NEP. In each school, the number of students per class ranged from two to twenty and the gender also varied, but in most cases





Site E 15<sup>th</sup> St Farm as described above, is a half an acre space  
dedicated to growing organic fruits, vegetables, and edible  
flowers in downtown St.  
Petersburg

The following section is an analysis of the disciplinary approached at each stie, based on  
observations of the interactions between the children and the instructor, the role of the  
teacher during the gardening lessons, and the relationship and interactions among the  
students.

Site A is a small private school that was funded by donors. Their academic model states

water when they asked for it. Only when the children asked to go repeatedly did the teacher refuse to let them go, but this happened only a few times.

An example of the school's disciplinary approach was evidenced by the decisions that were made with the misbehavior of four children during gardening classes and the results that followed. The director firmly and assertively reprimanded them by stressing how fortunate they were to be part of the program and had them say out loud the core values of the school that all the children knew by heart. The four children were suspended from the gardening program for not following instructions, not doing assigned activities, and being disrespectful to the instructor. As a result, the school decided to remove the students from enrichment activities and had them do school assignments during the gardening class time. The students wrote a letter of apology to the instructor recognizing their misbehavior, and one of them asked to see the principal. Although he was granted the opportunity to speak, he was not accepted back in the gardening classes. After a month of being suspended, the students were reincorporated into the program, and their attitude and appreciation were evident in their excellent behavior.

The situation and the way it was handled suggest that the school's philosophy promotes independence, self-management, and the skills to take responsibility for their actions. The students had the opportunity to learn from their experience, not only that actions have consequences, but also that there are second chances, as long as there is reflection and commitment.

Another important fact that was observed during gardening classes, when the teacher





themselves and also some of the students, to the point where the lack of discipline became unmanageable for the instructor, who shouted at the class and even threatened to remove the students from the garden.

level of discipline during gardening classes. Observations related to each of these items are presented separately for each site.

Site A had the same number of boys and girls at the beginning of the semester, and in terms of their ages, they were already entering preadolescence, with the girls being slightly older and more mature than the boys. Another important site feature was that having a covered shed helped to avoid having to cancel class due to bad weather, which allowed the instructors to include experiments or contests. Students who seemed more committed to academics seemed to enjoy and participate in the contests. However, some students mentioned that while the contests were fun, they preferred the hands-on activities. When assessing their willingness to collaborate with the instructor, I considered whether the students did not want to do an activity because they did not want to get dirty or whether they preferred to be in the shed claiming that it was too hot or too sunny.

i. Willingness to collaborate: Some of the girls did not complain about getting dirty, while others tried not to get dirty at all during the entire semester and preferred to stick to watering the plants and planting rather than harvesting or weeding. For example, when they had to remove leafy suckers from a tomato plant, one knowledgeable girl did it with her fingers covered with her sweater so as not to touch the plant. In contrast, some girls volunteered for the shoveling activities and were very invested and wanted to harvest themselves to take the produce home. In any case, by the end of the semester, none of the girls had a problem with any of the assigned activities, doing whatever it took to get it done.

To measure the level of involvement, attention to instructions was considered, since at the beginning of the semester the students carried out the activities with a very low level of specific detail and attention. However, as they were able to observe the effects of certain actions, such as the impact on seedling growth of planting the seeds at a certain distance from each other, they began to follow the instructions meticulously because they understood the reasons for each process.

- ii. Participation: During the lessons, most of the students showed equal interest in the class and in the practical activities. Except for the contests, when not having their close friends in the group affected their engagement in the activities. As for participation in the questions and answers, one of the girls always wanted to participate, but it appears this was mostly because she wanted to get noticed rather than because she knew the answers to the questions asked. Furthermore, other girls sometimes knew the answers but, out of shyness, did not say them out loud. Whereas boys were more actively engaged in all the garden hands-on activities, some of them were less focused, and if they finished the activity ahead of time, they would begin to run or initiate push-up competitions or other games. On the other hand, once the girls were

was remarkably interesting to observe that while they were doing practical activities, they began to talk about different topics, sharing information and getting to know each other. Sometimes they would reflect on the activities they were doing, for example, when harvesting sweet potatoes that have long roots, one of them said "If you want to harvest the sweet potato you have to follow the thread of life", meaning that you have to follow the root to find the sweet potato. Likewise, when the instructor was assigning gardening

also made it clear that they did not want to share the produce with the students from site B. However, by the end of the semester, these students showed more willingness to share and collaborate, even with those who were not their closest friends. Another important aspect of engagement and learning was the level of Independence when doing repetitive activities. Once the students learned to do the practical activities and to size up the importance of doing them in a certain way, they did not have to focus so much on a single activity and began to have conversations and share information about themselves and opinions about different aspects of life creating new relationships and bonds among themselves

- iv. Discipline: for the children, being in an open space with more freedom and where the rules and activities are not as strict as in a regular classroom can be a challenge at times. However, the teacher was very clear from the beginning about the importance of behaving respectfully and following instructions. He always intervened in an assertive and timely manner so that there was not much disruptive behavior. However, there were some moments when instructions were not followed and the teacher had to reprimand students, which led to making changes in the teams for the contests and it was even necessary to ask some of the kids to leave the gardening classes. . These events then led to the students being very well-behaved and disciplined in their activities towards the end of the semester.

In Site B, As previously mentioned, this site is an afterschool program, which is evident by its distinctive characteristics Gi1 108.02 127.46 ToistiQq7el2()-3(c)3(p1 1 49rT/Fon)ma5 u9istics Gi1 108.gre

the same class, and contrary to what could be expected, there was not much difference in understanding the concepts explained in the lessons. In contrast to other sites, the garden was big and there were plenty of edible flowers and leaves to taste. However, the lessons were shorter in the classroom due to the age difference.

- i. Willingness to collaborate: Site B was one of the largest groups involved in the NEP, with up to twenty students. Despite the garden's larger size, there were not enough hands-on activities for all the children. However, they enjoyed running around and tasting flowers and vegetables. During the activities that required getting dirty, no one complained, and students always volunteered to do all the chores. However, when there were activities or experiments to be done in the garden, the students did not actively participate in them because there was no seating or shelter, only a cement slab and some students did not want to sit on the ground, so, instead, they would get up and go to the garden.
- ii. Participation: As mentioned above, there were children of different ages. In the question-and-answer session in the beginning of the class all the students participated enthusiastically by asking and answering questions. However, it was not possible to delve too deeply into the topic. After the questions and answers, the NEP instructor took the children on a tour of the garden to observe and learn about vegetables and plants. The hands-on activities did not provide equal opportunities among all the children.. While some students were doing hands-on activities, others were tasting vegetables and flowers, or just running around enjoying to be outside.
- iii. Collaboration, sharing, and competence: There were subgroups of close friends and different groups according to age, though the unwillingness to work with others was not

evident,. Compared to children at site A who sometimes refused to work with those they did not consider their friends, children at site B were willing to share responsibilities in carrying out the tasks even with the younger ones who always wanted to participate actively.

- iv. Discipline: Since this site was an after-school program, the children did not have any strict behavior requirements. They were allowed to run and be wherever they wanted, and the

ground if needed. Though the class was in the morning, students never mentioned anything about the heat. Additionally, when they finished their assigned activities, they would go and look at the plants, vegetables, or the other students' activities and reflect on what they were doing, asking questions, or just mentioning interesting facts.

ii. Participation: The Q&A section of the garden lesson sometimes took longer than the ten-minute set time due to the reflections and questions on the topics by the students, and there were cases where one question would lead to the other. In addition, at the end of the Q&A session, the students would reflect on the differences they observed in the plants and the impact they had on the produce. For example, students would talk about the impact that having butterflies and bees as pollinators would have on the garden or discuss what to do to transplant new banana trees that had sprung from the main banana tree.

Participation was balanced among all of the students. Although there was one boy who had more experience in gardening because his parents had a farm before living in the US, the other students participated as well; they asked questions and tried to correlate their knowledge with the things they observed in the garden.

iii. Collaboration, sharing, and competence: When the tasks were going to be assigned the older students volunteered in teams, as mentioned before. When the younger children wanted to do something they did not know, the older students asked them if they needed help and taught them how to do it. For example, one team was helping the instructor to transplant a baby banana tree that had to be separated from the mother tree and it required strength and precision not to cut the roots. The instructor taught one boy and later the boy explained to another student how to do it. On another occasion, when one student





since the students were not used to being outdoors, it was difficult to keep their attention.

Nonetheless, they volunteered and wanted to collaborate and do the tasks that were required. Some of them wanted to transplant seedlings into the beds and at first, were a little concerned about getting their hands dirty but after they were taught how to do it, they did not care. Other students preferred to watch their peers do the tasks. Moreover, the students who sow the seedlings would say "This is my plant" taking ownership and wanting to take care of them.

- ii. Participation: In the Q&A section of the gardening class it was difficult to get students' attention and participation. Some students answered a few questions but mostly the instructor gave them the content first and then asked the questions again. In some cases, the students would give the correct answers to the questions.
- iii. Collaboration, sharing, and competence: This was a big group and as expected with younger kids, they do not like to share with others who are not their friends; this was the case when they had to do hands-on tasks, they wanted to do it by themselves or only with friends. The instructor made her best effort to divide tasks between all students, so they would participate in at least one activity. When they were not assigned to one task, students began to jump and talk loudly between them. The children who were doing tasks generally finished them.
- iv. Discipline: as mentioned before students were brought to the garden in line, they were talkative and required a lot of effort from the instructor and the teachers did not intervene with discipline issues until they became unmanageable. It was challenging to explain the concepts with all of the students talking at the same time, but the instructor managed to

explain the concepts in didactic and simple terms to interest participants. When giving the instructions for the hands-on tasks the instructor divided students into subgroups

Site E Garden lessons took place in 15th St Farm for hearing-impaired teenage girls in an afterschool program. Therefore, the teachers who accompanied the students assisted with the translation into sign language. The students were around sixteen years old, and the number of students varied from two to six. The garden had a variety of fruit trees, vegetables, and herbs, but hands-on activities were different from the other sites, and the students would do a tour to learn about the different trees and vegetables tasting new flowers, vegetables, and fruits. The girls preferred to water a part of the garden; however, they were not very attracted to planting and harvesting.

- i. Willingness to collaborate: The girls, as was to be expected for teenagers, at first did not want to get dirty or try the samples that the instructor offered them. Eventually, some of the students tried them but there was one student who said she definitely would not try them, saying that she liked coming to the garden because she felt peaceful and liked being outdoors, but that she did not like the vegetables and was not going to try them. Interestingly, she was one of the students who asked for seeds and directions on how to plant at home, but she said that it was just to care for and watch the plants grow, not to eat them. On the other hand, the students would take turns and always ask if they could water more plants.

ii. Participation: The students enjoyed being in the garden and outdoors. They were attentive and responsive when asked directly. One girl showed interest in planting at home and she asked a few more questions about plants and seeds. The other students just paid attention as well. The issue of translation and the inability



all said they enjoyed them and if given the opportunity they would take them again even if they did not like some of the vegetables or would not eat them at home.

In contrast, the children at Site C tasted all the vegetables and flowers and made connections between the themes of the gardening experience and their science classes and reflected on them. Once they were finished, they would go and see what the others were doing; some others preferred to be on their own but would collaborate if necessary. This is an outstanding difference that the instructors commented on in the interview which was observed as their level of maturity.

In Site D there seems to be two factors influencing the experience of the gardening lessons. One is the reduced hands-on activities due to the small space and the garden just being started. The other factor was the style of discipline and the age of the students. The expected behavior of younger students was that they would enjoy their time outside and not worry of getting dirty or sitting on the ground. However, the expectations were not met, this is a variable that may be due to reduced recreational activities during their free time and not having enough recess and physical activities outdoors. This can also affect their level of attention and discipline.

It is also noteworthy that the majority of students at site A expressed a lack of interest in taking produce home. Only a small number of students mentioned that their mother or grandmother would prepare the food items they brought from the school. In other instances, the students indicated that their mother was displeased with them for bringing produce home and

occasion, some teachers would approach the NEP instructor to request







*understanding insects, the pros and cons, and its benefits, the experience is totally different...it's the same when you bake a cake and eat the gratitude is different!!!"*

*In response to the question to what do the kids take from the gardening class " for some kids it is a place of stress release, a place where they don't have to worry about academics, the teachers, the moms, the dads, the friends, the bullying, the popularity, it's just them and the task at hand, and they can step away for a little bit of time and just connect with something that doesn't have to do with anything else ...I've seen that here with a girl that had a bullying situation, and she came here just crying, and when I asked other girls, they said it's teenage stuff ...and I made sure to keep incorporating her into the activities and 20' later she wasn't thinking about what happened, because her mind and her focus was here on the task"*

*Regarding the question about the impact the program would have on the children's eating habits she mentioned " maybe not all, but some of them pay a lot of attention. In one of the schools they are always talking about sugar and takis, and ask me to bring snacks...so I did an experiment, brought some celery and put it in a jar with a lot of sugar, another with dye, and other with salt and they saw the impact of each one in the celery the next class, so when I brought cracker graham and granola bars, and a couple of them read the back and said these are healthy snacks"*

In summary, both instructors have been working for more than a year in the program and perceive the NEP to be a great program that contributes to the well-being of the children and that has been a meaningful experience for them. They concur with the opinion that the structure of the classes and the curriculum are adequate to achieve the objective of teaching children the basics of nutrition and gardening.



nature. However, in the opinion of the other instructor who teaches at site D, even though the children are in 4th and 3rd grade, they do not know how to be comfortable outdoors. The garden is small and does not have enough space and activities for all the students.

3. Teacher interview. The teacher was asked the same questions as the instructors, and he admitted: *"At first, I signed in to be the teacher of the class to do something different, but I did not have high expectations because we had other gardening classes in the past and they were not successful. Having the experience to see how the children become involved and how they appreciate being here, makes me very proud to be part of the program. . . I would like to introduce the gardening vocabulary and topics in my English classes and have more communication with the instructors to reinforce the concepts the children learn in the garden in the classroom."*

To the question regarding the strengths of the program *"the kids are outside of the four walls, a different learning environment is great for them. The way you break it down, start with I want to teach you something, and then we go and apply it. The experience of having something tangible and say look what I grew in this garden and go home and tell their parents and then show them in the open house, look this is something that I did. Another thing is using poster boards and doing experiments that engaged them a lot better than when we started the program"* When asked if he would change anything, he suggested including the garden topics in the school curriculum to reinforce learning.

Informal conversations with the students during gardening lessons and participant observations revealed that the program is effective in achieving the goal of engagement in the majority of participating students. Although different levels of commitment and other outcomes were observed, such as not being interested in gardening per se, but enjoying being outdoors in nature and taking care of plants. As expressed by some of the students, they discovered the joy that being outdoors could bring them and learned to appreciate nature and the peace and relaxation that it brings. Future research should be conducted to determine what would be the best approach to get them involved in gardening activities, and subsequently, at least try vegetables.

A further important result, which is not directly related to gardening, but rather to caring for the plants and the garden, was the visible increase in autonomy, independence, and responsibility in carrying out the activities in the garden. As the children began to experience a sense of ownership and pride in harvesting the produce they had helped to grow, they became more confident and independent in carrying out their assigned tasks. These tasks consisted of tending the soil and watering, weeding and transplanting seedlings, and they even volunteered to weed, the activity they liked the least. However, they eventu

to the level of engagement, while increasing knowledge and, in some cases, the application of concepts to other subjects, such as environmental sciences, among others. This became evident when some students at Site C were able to establish the relationship between the plants and trees they planted in the garden and, after a few weeks, began to see butterflies and bees and realized that they were part of the pollinators in the garden and that certain plants and trees attracted them. Consequently, the group of students at site E who did not experience as many hands-on activities were not as involved in the gardening activities per se, although they enjoyed the time spent in the garden, and enjoyed their time outdoors.

After more than a year of observations and gathering opinions from students and interviewees, it is clear that even when students were not initially enthusiastic about gardening, it became an activity they looked forward to with great enthusiasm. Some students expressed their desire to return to the garden, even after the end of the program saying, *"I definitely want to come back because I enjoy being here."* In addition, the teacher noted in the interview, *"The kids are having an authentic educational experience, and the best part is that they don't realize how much they're learning."* This was evident when, towards the end of the semester, some students surprisingly asked to help with weeding when tasks were being divided.

Involving parents and getting their input on how they perceive the gardening experience for their children was not possible. Some of the students had previous gardening experience with their families and simply shared with their parents what they learned in the gardening

classes. According to other students, their parents did not care, so they did not share any information and for that reason did not take any produce home.

education on the participating students. However, since not all sites had responded to the post-tests at the time of data analysis for this research, this information was not used at all. Future analysis of this data will provide valuable information about the effectiveness of the NEP.

The experience for students in Site E was different for two reasons. On one hand, the garden did not offer hands-on activities such as weeding, transplanting, or planting seeds in the garden. However, it offered more diverse vegetables, edible flowers, and fruit trees. Therefore, this is a variable to be studied and compared with the effects on the overall experience. On the other hand, the students were deaf, and the teacher had to translate

Based on the data I was able to collect for this thesis, it can be concluded that the knowledge and commitment the children have acquired in the gardening classes will certainly contribute to their future. Exposure to new foods and vegetables may increase healthy habits in the future, but there is insufficient evidence to predict such behavior. However, being exposed to new flavors and textures expands their sensory experience and may increase future willingness to adopt a healthier and varied diet. The program is grounded in the principles of Emmanuel Roux which states that "growing vegetables and fruits not only helps children to be aware that we are one with nature and we need the same air, water, and nutrients and "we are what we eat"<sup>7</sup>. Therefore, when children understand the relationship between soil nutrients and nutritious food,



insecurity in local communities, they bring so many benefits that it is worthwhile to continue efforts to create and support them.

Covey, Stephen R. 2013 *The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change*. 25<sup>th</sup> anniversary edition. New York: Simon & Schuster.

Baer, Hans A. "On the Political Economy of Health." *Medical Anthropology Newsletter* 14, no. 1

Jyot, D. F., Frongillo, E. A., & Jones, S. J. 2005. Food Insecurity Affects School Children's Academic Performance, Weight Gain, and Social Skills-.



Admin. "Urban Farming for Urban Families." Futurum, October 3, 2023.  
<https://futurumcareers.com/urban-farming-for-urban-families>. Moore, Waveney Ann.  
"There's a Food Desert in St. Petersburg. It's Not Imaginary." *Tampa Bay Times*,  
November 1, 2019, sec. News. <https://www.tampabay.com/news/st-petersburg/2019/11/01/theres-a-food-desert-in-st-petersburg-its-not-imaginary/>.