

**Educational Farms as Tools for Advancing Youth Well-Being in Underrepresented  
Food Desert Communities**

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**Abstract**

Food insecurity represents a significant public health crisis affecting individuals across the United States, with food deserts, areas lacking access to nutritious food due to transportation barriers and absence of grocery stores serving as primary contributors to this challenge. This issue disproportionately impacts youth during critical developmental stages, prompting communities to explore innovative solutions such as community gardens and educational farms. This qualitative case study examined how educational youth farms can serve as tools for addressing youth well-being among underrepresented populations residing in food desert communities through stakeholder perspectives. Grounded in the Positive Youth Development framework, the study explored how these spaces empower youth to reach their full potential. Data collection focused on an educational farm located in Petersburg, Virginia, utilizing semi-structured interviews with stakeholders engaged at the farm, field observations, and document analysis. Findings revealed that educational farms contribute to positive youth development through multiple pathways: enhancing mental and physical wellness, fostering self-worth and identity development, providing alternative pathways for at-risk youth, connecting academic learning with hands-on experiences, facilitating relationship building, and strengthening community connections. The study recommends increased support from educational institutions, communities, and governmental entities to enhance engagement with and sustainability of these educational spaces.

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**General Audience Abstract**

Many communities across the United States struggle with food insecurity, especially in areas called food deserts where residents have limited access to healthy, fresh food due to a lack of grocery stores and transportation challenges. This problem particularly affects youth during important stages of their growth and development. To address these challenges, communities are finding creative solutions like community gardens and educational farms. This study looked at how educational farms can help improve the well-being of youth living in food desert communities. The research focused on an educational farm in Petersburg, Virginia, and examined how these spaces can help youth reach their full potential. Information was gathered through interviews with adults involved with the farm, observations of farm activities, and review of related documents and media coverage. The findings showed that educational farms benefit youth in many ways. They help improve both mental and physical health, build self-confidence and personal identity, provide positive alternatives for at-risk youth, connect classroom learning with real-world experiences, help build meaningful relationships, and strengthen community connections. The study suggests that schools, communities, and government agencies should provide more support for these educational farm programs to help them succeed and grow. This study demonstrates that educational farms can be valuable tools for supporting youth development while addressing food access issues in underserved communities.

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## Chapter 1: Introduction

### Background and Setting:

Food is one of the most important necessities of life. Food provides us with the energy and nutrients we need to grow and maintain our bodies. It is also a way for us to connect with one another. It can be through having a meal with one another, sharing recipes or cultural practices, or connecting at a farm market or a locally owned grocery store. Through food, it helps us to build community with one another, and for us to get to know one another.

Everybody deserves access to nutritious dense food and the ability to choose what they eat. However, this is not a reality for a lot of people who don't have access to nutritious and culturally appropriate food. There are individuals in the U.S. and around the world who have limited access to food, which restricts their choices in what they can purchase. When there is limited access to food in a geographical area, the area is called a food desert.

Food deserts are a complex phenomenon and can be found in almost every part of the world. There are many terms used when it comes to food deserts for different countries, educators, and researchers. The United States Department of Agriculture (USDA) defined food deserts in their 2008 Farm Bill as an "area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income neighborhoods and communities (U.S. Department of Agriculture 2009). Food deserts are often located particularly in urban areas, but can also be found in rural areas (Deal, 2024) Some of the main factors that contribute to a food desert are income, vehicle availability, accessibility, and access to public transportation,

all of which make it hard for residents in these areas to get access to affordable, fresh food (Dutko, Ver Ploeg, et. al, 2012).

Food deserts pose a serious concern as they are one of the main contributors to food insecurity. Food insecurity is when people can't access the food, they need to live their fullest lives (Feeding America, 2022). In 2023, the USDA did a report on Household Food Security in the United States and found that 13.5% (18 million households) were food insecure at some time during the year. Children were also food insecure in 8.9% (3.2 million) households (Rabbitt, Hales, Burke & Coleman-Jensen (2023). Food insecurity is now recognized as a major health crisis in the U.S. as it impacts the overall public health.

Youth are more susceptible to being food insecure, especially in a food desert, since they face barriers that are out of their control, such as having to rely on their caretaker to get their next meal (Steeves, Johnson, et. al, 2016). Youth not only will also be susceptible to health-related illnesses such as obesity and diabetes (Key, Burnett et. al, 2023), but not having enough nutrition can impact their academic achievement at school (Frndak, 2014, Pendola, Jang, et, al., 2022). Within those communities, youth also face exposure to crime and violence activities (Mcabe, 2014).

Communities, non-profit organizations, grassroots programs, and other organizations have been looking into ways to uplift residents and the community in food deserts and related to other challenges currently emerging in our food system (Alkon,Guthman,et. al 2017). Some help create programs or educational initiatives to share information about nutrition and health, build community gardens and farms, food hubs, or food cooperatives. These efforts aim to provide residents not only with greater

access to fresh, nutritious, and culturally appropriate foods, but to also raise awareness to the challenges that are being faced in their communities and to provide jobs and skill-building opportunities and workshops (Fullan,2015).

Educational farms are one solution that not only brings education into an outdoor learning environment for youth but also can be used to promote nutrition, health, and wellbeing (Fredella, Cardani, et al., 2023). These spaces have been shown to serve not only as a way to tie lessons being learned in a traditional classroom to real-world applications, but also as alternative spaces for at-risk youth (Veen, Pijpker, 2023). Although educational farms are a new emerging field of research, literature shows that communities are receptive to having these spaces in their neighborhoods, not only as a way to support youth growth and development, but also as a way for individuals to come together and build support within their community (Rahm, 2002; Rodgers, 2012).

### **Statement of Problem:**

In 2014, the Food Desert Task Force, commissioned by the Virginia General Assembly, released a study on food deserts in the Commonwealth of Virginia. This Virginia Study Report assessed the status of food deserts in the commonwealth, including statistics, challenges, and recommendations for action. According to the Virginia Cooperative Extension Food Desert Study Report (2014), 17% of residents had low food access, 10.7% were classified as low income, 29.8% experienced adult obesity, and 12.7% were food insecure across both urban and rural food desert areas.

This study focuses on Petersburg, Virginia, which the Food Desert report identified as having an 18.4% low access rate and the highest adult obesity rate (37.6%) among the eight localities studied. Petersburg has faced increasing unemployment, crime,

and property abandonment, contributing to social, racial, and political challenges (Burnett, Owens, Pinto, 2017). Current statistics are particularly concerning, showing that 39.4% of youth and 15.2% of the overall population in Petersburg are food insecure (Feeding America 2022). Youth are especially vulnerable to food insecurity due to their dependence on caretakers for access to food.

While building supermarkets in affected areas may help, this alone is insufficient. Additional interventions through education and policy actions are necessary. The Food Desert report recommends several interventions, including expanding grant opportunities for urban organizations to create gardens and farms, exploring tax incentives, developing health and nutrition curriculum for high school and college students, and establishing an urban farm in Virginia as an educational training center.

Community members and institutions, including Virginia Tech and Virginia State University, are working to develop solutions and tools to address health disparities and socioeconomic challenges in this community. This study will specifically examine an urban educational youth farm located in Petersburg, Virginia. The farm's initiative is aimed at empowering the local food desert community by focusing on educating youth about agriculture, improving lifestyle and well-being, steering youth away from violence and crime, and enhancing understanding of agriculture's role in the food system. Its mission is to teach survival skills in a food desert, promote knowledge about food sources, develop food-growing capabilities, and empower youth to live healthy lifestyles.

## **Purpose and Research Question:**

The purpose of this study is to explore how educational farms can be used as a tool in addressing well-being among underrepresented youth residing youth living in food deserts. The study will examine the perspective of stakeholders on how farms can promote youth wellbeing and teach valuable skills related to health, sense of self, the environment, and community. The study heard perspectives partners who collaborate with the farm to understand their reasoning and motivation for supporting the farm initiative. In this research, interviews were conducted with the farm director, staff and teachers. The study also looked at document analysis of articles of programming of the farms and their mission. Observations were also conducted on programming and the youth activities at the farm.

This study seeks to address the following research questions:

- 1. What is the influence of participation in educational farm programs on the overall well-being of youth in food deserts?**

1a: How do educational farm programs influence the physical, mental, and nutritional habits of participating youth?

1b: How do educational farm programs impact the behavior outcomes of participating youth?

1c: In what ways do educational farms empower youth to become change agents within their communities?

**2. What are the primary motivations for stakeholders to engage in creating and supporting an educational farm in a food desert?**

2a: How do different stakeholders perceive the success and impact of the educational farm on the community and themselves?

2b: How does collaboration between farmers, educators, and community organizations enhance the effectiveness of educational farms?

**3. What competencies and learning outcomes are emphasized in an educational farm program for youth?**

3a: How do educational farms use innovative teaching methods to engage and enhance learning experiences?

**Reflexivity:**

I was born and raised in Chesterfield, Virginia and Petersburg was only less than 15 minutes from where I lived. My passion for agriculture started when I was around 8 or 9 when I was helping my father in our small backyard garden. My father gardens as a hobby and what began as bonding time soon became something much more significant. I was captivated by how a tiny seed, when given sun, water, care, and attention, could become something that nourishes people. What inspired me even more was watching the joy it brought to others - how we would share our harvest with family and friends, and how they would turn it into delicious meals. My father always told me, "People close to us should never have to worry about and being hungry and always have food on the table." and that sentiment always stayed with me.

My passion for agriculture stayed with me when I got to high school where I took courses such as agricultural biotechnology and urban agriculture and greenhouse production at my career and technical career. Both programs provided me with more insight and deepened my insight into the many avenues of agriculture. These classes confirmed what I already felt in my heart that agriculture was my path. This led me to enroll at The Virginia State University majoring in Agricultural Business and Economics.

At VSU, I broadened my academic knowledge while becoming more engaged in student organizations and professional development. I had multiple internships and work study with the USDA, working at Randolph Farm and the university 's agricultural laboratory. These experiences not only helped me grow academically and professionally, but they opened my eyes to larger systemic issues in agriculture, particularly related to food access.

One issue that struck me deeply was learning about food deserts. I was stunned to learn that Petersburg, Virginia, is considered one. It was heartbreaking to realize that so many people lacked access to fresh, healthy food, especially in a region so historically rooted in agriculture. I witnessed the ripple effects that it has on the community when it comes to their health. It became clear to me that agriculture isn't just about food production- it's about justice, equity, and care for one another. This understanding followed me beyond graduation and led me to pursue my master's degree and research at Virginia Tech.

This study is important to me because I believe it is essential for every person to have access to and knowledge about where their food comes from. Many people don't have this option due to barriers such as low income or living in an area that lacks access to a

grocery store, especially in predominantly minority communities. I want to uplift these communities and the people who are working toward creating change by developing community gardens, food hubs, and educating youth and the community about food origins.

## **Chapter 2: Literature Review**

The literature review's purpose is to share the background of food deserts and the factors that create them, their contribution to food insecurity, and how they affect individuals, particularly youth, when it comes to their health and education. Literature will show what communities are doing to tackle this challenge when it comes to health disparities and youth engagement. Educational farms, though still emerging, will be discussed alongside previous studies that have created one and examined their impact on youth development.

### **What is a Food Desert?**

Food deserts are geographic areas where people have a lack of nutritious food due to barriers such as transportation, location or lack of a grocery store, as well as income (Ferdinand & Mahata, 2017). People in these areas may lack access to affordable fruits, vegetables, whole grains, low-fat milk, and other foods that make up a healthy diet. Instead, people residing in a food desert often have to rely on convenience stores and fast-food restaurants, which often serve food high in fat, sugar, and sodium content. The term food desert, first used in western Scotland in the early 1990s, describes large neighborhoods covering areas as large as several city blocks or square miles (Cummins & Macintyre, 2002; National Research Council, 2009). This definition has grown to be used in academic, government, and community spaces to describe areas that lacked access to affordable and nutritious food.

The United States Department of Agriculture (USDA) defined food deserts in their 2008 Farm Bill as "an area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income

neighborhoods and communities" (U.S. Department of Agriculture, 2009). Food desert areas can be found everywhere and within every state in the country, spanning both rural and urban areas (Bohannon & Henry, 2016; Virginia Cooperative Extension, 2014; U.S. Department of Agriculture, Economic Research Service, n.d.).

The Economic Research Service branch under the USDA (2022) created a Food Access Research Atlas, a census tracker of low-income households, low vehicle ownership, and low access to food stores. In 2019, their data revealed that 53.6 million people, or 17.4% of the U.S. population, were more than one-half mile or 10 miles from the nearest supermarket, supercenter, or grocery store. Of that total, 18.8 million (6.1%) live in low-income and low-access tracts and are more than 1 mile or 10 miles from a market, while 17.1 million (5.6%) live in low-income or low-access areas more than 1 mile or 20 miles from a supermarket. Regarding vehicle ownership, only 1.9 million (1.7%) in the census tract are far from a supermarket and do not have a vehicle (U.S. Department of Agriculture, Economic Research Service, 2022). The census tract data demonstrates a high number of people in the U.S. who are unable to attain a healthy diet due to limited supermarket access and transportation constraints.

### **Food Insecurity**

Food deserts directly contribute to food insecurity, which is a significant cause of hunger in the U.S. Food insecurity is defined as the lack of enough food for an active, healthy life, which is essential for a population to be healthy and well-nourished (Rhon et al., 2022). In most cases, families are uncertain about their next meal source. As of 2022, according to the Map of the Meal Gap from Feeding America, 44 million people, including 13 million children, in the United States are food insecure (Feeding America,

n.d.). This significant number of people lack access to the nutritious and healthy food they need.

Food insecurity is now recognized as a major health crisis in the U.S. as it impacts overall public health. The absence of nutritious, accessible, and culturally relevant food can have profound consequences for individuals, including malnutrition, obesity, disease, and perpetuated poverty (Hammond & Dubé, 2012). Youth are especially vulnerable to food insecurity and poverty due to the barriers they face (Perez, 2008). The core principle should be that everyone has year-round access to healthy, nutritious, affordable, and culturally relevant food, with certainty about their next meal.

### **Food apartheid**

The term food apartheid looks beyond the food desert term and addresses the “public policy and economic practices that have created these areas that have low access to food, and food desert does not speak to that intentionally” (Yakini, 2020). The term addresses that these practices are “man-made” and focuses “on the political and economic system that has discriminated and segregated groups of people based on race.” Both terms address the challenges that low-income minority communities are facing when it comes to access to food and the legacy that is behind it. Within these movements, people are looking at potential solutions, including developing nutrition education programs, creating policies to address food access, encouraging government and non-profit interventions, and building networks between retailers and local farmers (Vaughan et al., 2017; Ghosh-Dastidar et al., 2017; Lucan et al., 2010).

## **Factors**

The main factors contributing to food deserts are transportation, socioeconomic status, and geographic areas. Socioeconomic status is particularly complex, encompassing multiple elements that affect access to healthy food. These elements include income, education, employment status, race/ethnicity, and vehicle ownership (Dutko et al., 2012; Ferdinand & Mahata, 2017).

In African American communities, residents have lost access to green spaces, clean air, quality education, and healthy food retailers (Zaidi, 2023). This lack of access has led families to rely on fast food or convenience stores that lack nutritional value. Food deserts create community-level barriers that restrict access to affordable, nutritious foods.

In low-income areas, there is a notable lack of supermarkets, supercenters, grocery stores, and other retail sources offering healthy and nutritious food. This often forces communities to rely on fast food and corner stores for meals, which are typically less nutritionally dense (Oh et al., 2024). Even when supermarkets exist in food desert areas, community members often consume snacks or foods that are not nutrient-dense.

A study in Pittsburgh, PA examined residents' food purchasing behaviors in a food desert (Vaughan et al., 2017). Despite the presence of full-service supermarkets with healthy options, the researchers observed a high purchase of both healthy and unhealthy foods. There was a notably high demand for unhealthy options like sweets compared to healthier alternatives such as fruits and vegetables. Even though a supermarket that sells healthier food options may be available, further interventions may be needed for the communities that are still consuming less nutrient dense food.

Food deserts are mostly found in minority-based communities. Based on the 2023 food insecurity census from the USDA, 27.5% of black households and 26.0% of Hispanic households were food insecure at one point this year (Rabbitt, M. P., Reed-Jones, M., Hales, L. J., & Burke, M. P. 2024). Within communities experiencing a food desert, especially urban areas, the population is mostly African American, Hispanic, and other minorities that may have low-income and low-wage employment, which is a challenge when trying to get access to food (Clendenning, Dressler. Et.2016).

### **Health Impacts**

The health implications of residing in food deserts are profound and multifaceted. When there is limited access to healthy food but an abundance of fast food and convenience store options, these areas are more prone to negative health impacts due to the poor nutritional quality of available food. Literature shows that residing in a food desert can impact overall health.

One of the impacts of food deserts is obesity. Obesity is a chronic disease and an important public health problem across the world, currently ranked as the fifth most common leading cause of death globally (Safaei, Sundararajan et.al 2021). In the U.S., 19.7% of youth and 41.9% of adults show a prevalence of obesity (Stierman, B., Afful, et. al, 2021). Although obesity can be caused by genetics, other factors such as physical inactivity, excessive calorie intake, and one's socio-economic status can contribute as well (Masood, Moorthy, 2023). Obesity can increase the risk of other diseases such as diabetes, cardiovascular diseases, stroke, and various cancers (Blüher,2019). Literature shows that there is a correlation that resident who live in a food desert are more prone to these chronic diseases (Whitecare, Tsai, et. al, 2009).

Another impact of food deserts is one's mental health. An individual's diet or nutrition can directly influence behavior moods such as depression (Huang, Liu et. al 2019), anxiety (Owen, 2017), and as well as stress and memory loss (Spencer, Korosi, Layé,2017). When one has a well-balanced diet it can help with improving brain functions and lowering blood pressure (Vetrani, Costabile, 2013). However, food deserts have become a barrier for individuals to get the food they need, leaving them to be susceptible to mental health challenges (Compton,2023).

### **Youth Health**

It is important for all youth to eat healthy meals throughout all stages of their growth. However, that is not the case for all youth in the U.S. who are not getting the essential nutrients they need (Spokane Regional Health District, 2022). When youth are not getting nutrition, it can impact their overall health. Youth who do not get the proper nutrition can experience an increase in their risk of chronic disease, such as obesity, through their developmental stages and into adulthood (Lassi, Moin, et.al 2017).

Youth, particularly during their adolescent years, are shaped by numerous factors during this critical period of development. Environmental, societal, and economic influences play major roles in their growth and transitions to adulthood (Furlong, 2017). For youth to achieve well-being, these influences must be supporting and nurturing. However, living in a food desert can significantly alter these dynamics, creating additional barriers and challenges that are beyond their control.

When it comes to social influence, the people that youth interact with on a day-to-day basis can have an impact on their well-being. For example, one study shows that the relationships that youth have, such as with their guardians, friends, and teachers can

influence their eating and physical activity (Steeves, Johnson, et.al 2016. Guardians serve as the primary source of food access for youth, despite often facing their own barriers such as lack of transportation or limited income. In food desert communities, limited transportation is already a significant barrier for residents. When guardians face their own transportation or financial constraints, it directly impacts the youth in their care, further restricting access to nutritious food options.

In educational settings, the consequences are equally concerning. Poor nutrition has been shown to impact academic performance, leading to lower test scores (Verulava, Devnozashvili, 2021). Youth academic achievement is also negatively affected when students reside in food deserts (Rowe, 2022). The challenges extend beyond individual health outcomes. Schools in underserved communities, facing budgetary constraints, frequently reduce healthy food options in cafeterias and vending machines (Harding, 2012). This creates a cycle where students have limited access to nutritious meals both at home and at school, further perpetuating educational disparities and health inequities in these communities.

A youth environment needs to be innovative, positive and healthy for them with support from the community. Environmental influences such as the people around them and businesses such as convenience stores and markets can influence youth behavior and choices. For example, in the context of food deserts, youth are exposed to unhealthy environments due to aggressive marketing of unhealthy food (Howlett, Elliot, 2015, World Health Organization, 2018,). Therefore, creating supportive community environment becomes essential for promoting youth development and ensuring equitable access to resources that foster their health and well-being.

## **Solutions to Food Deserts**

Communities, leaders, farmers, and advocates are building green spaces and initiatives within their communities to help solve the problems of food access, food insecurity, and hunger (Ventura, Bailkey 2017). These green spaces can be local educational farms, community farms, and farm to schools intended to provide resources to their communities. Community leaders are also trying to help build the community by providing more opportunities for income in, and food access through fresh, local, and culturally relevant produce (Bass, 2019, Dubová, Macháč, 2019). Most importantly, communities want to help and provide support to youth and give them opportunities to contribute and grow and so that they can use the space for years to come (Bass, 2019).

For example, community gardens and farms have been shown to be used as a tool to help solve the food access problems and other challenges that communities face. Community gardens have been known to not only enable access to healthy fruits and vegetables that are growing in that space but also to enhance social interaction and build a sense of community (Krishnan, Nandwani et. al 2016). In the literature, it has also been researched that these spaces also help with the prevention of violence, especially violence among youth (McCabe, 2014), and serve as a tool to solve the health disparities (Obar, Alaimo, et. al ,2008). There are also educational gardens that show that youth engaged in these green spaces have higher test scores in school (Ray, Fisher et. al 2016).

Farm to school initiatives have also been used to not only combat food security by bringing local food into the school system, but also as a way for youth to engage in agriculture activities. With farm to school, youth can engage in these spaces to learn more

about where their food comes from and how to grow it, but to also take what they learn to the classroom and have the potential for development and growth (Rains, Giombi, 2019).

### **Environmental Education**

Environmental Education is a relatively new field of study that appeared in 1947. In 1977, at the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Intergovernmental Conference in Tbilisi, Georgia, USSR, multiple participants from multidisciplinary fields came together to discuss the topic of environmental education (UNESCO, 1998). At this conference they developed the Tbilisi Declaration and stated that environmental education should "constitute a comprehensive lifelong education, one responsive to changes in a rapidly changing world. It should prepare the individual for life through an understanding of the major problems of the contemporary world, and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard given to ethical values" (UNESCO, 1998, pg.24). From the declaration, environmental education takes a holistic approach and is interdisciplinary at the heart that can be used for all ages in both formal and non-formal education (UNESCO, 1998).

Environmental education can also be seen as "a learning process that by the help of the environment allows pupils to gain comprehension, ability, experience, and values of the chosen environments" (Smeds, Jeronen, et. al 2015, pg.2). The goals of environmental education are to foster awareness of an area's political ecology (economic, social, political, ecological), provide every person the opportunity to acquire "knowledge, values, commitment and skills needed to protect and improve the environment" (UNESCO, 1998 pg.26) and create patterns of behavior starting with the individual itself

and extending to society as a whole towards the environment (UNESCO, 1998).

Experiential education plays a major part in environmental education, as it helps with direct engagement and experiences, which can be impactful for youth learning.

### **Place-Based Education**

Place-based education falls under the umbrella of environmental education, as it encourages teachers to use spaces such as school yards and community spaces as a classroom for learning (Education, 2013). Place-based education focuses on places that expand beyond the classrooms and how the area that we live in serves as a source for learning and community. Place-based education can contribute to youth learning as they explore and interact with their environment. One example of this is a study that found that place-based approaches help youth gain a sense of awareness to their environment and a sense of place and identity (Bellino, Adams, 2014). Farms can be place-based environments as they offer ways for youth to engage in their environment and the opportunity to learn knowledge but also about themselves and their environment.

### **Farm Based Education**

Educators and academia need to seek out innovative and creative ways to engage with students and provide them with meaningful learning experiences that contribute to youth development, positive relationships, and engagement at school. Educational farms have many opportunities whether they are school-based, or community-based. Farm-based education, though a relatively new term, is the term we will use in this study. We will use the definition from Shelburne Farms throughout this study. Farm-based learning:

"Allows the natural world to serve as both classroom and teacher. This type of learning may unfold on a farm, a schoolyard, or any community agricultural space. Crucially, farm-based education allows learners to form deep connections with the natural world—and to see their role within it" (Shelburne Farms, n.d.)

Farm-based education uses the farm as an authentic learning space and teaching tool that incorporates farm activities such as livestock care, composting, greenhouse production, beekeeping and vegetable production for learning (Rodgers, 2011). There has been an increase in educational farms all over the country as they can be used as a way to apply concepts and ideas that are being presented in a traditional classroom setting (Forleo, Palmieri 2019, Monaghan, Swisher, Koenig, Rodriguez 2017). The loosely structured farm setting contributes positively with youth learning outcomes compared to a traditional school setting due to its outdoor learning environment (Dhanapal, Lim 2013). These types of farms also have the ability to establish youth programs on site such as internships, youth development programs, and after-school programs. Farms can also include outreach programs such as farm tours, workshops, and public events for the community and youth (Rodgers, 2011).

From literature, there are multiple ways that farm-based education can offer academic and life skills to youth and the community. Educational farms have the potential to promote positive relationships, enhance students' social-emotional growth, and provide students with hands-on experience-based learning. Fifolt, Morgan et.al (2018) found in their study that the youth through this experience feel a sense of responsibility/accountability when it comes to cultivating the garden and running the farmers markets, building and sustaining relationships among peers, parents, and staff

members at the farm, personal growth and learning life skills such as learning to grow their own food, career exposure, and community engagement with activities, and events that bring the community together.

Following in that same context, not only does farm-based education help with youth developing life skills, but farm spaces have been expressed as alternative spaces for them to feel calm and disengage in delinquent behaviors, whether that be through planting (Hung, 2004) or raising the animals (Schreuder, Rijnders, et. al, 2014). Farm experiences have also been shown to increase youth knowledge while fostering their desire to share their farming skills and science concepts with others (Broaddus, Przygocki 2015). Educational Farms offer multiple ways for youth to develop personally and academically.

## Theoretical Framework: Positive Youth Development

Figure A



*Sandrich. (2021) Organized by Pederson (2018) and developed by Lerner et al. (2013)*

The framework behind this study will use a positive youth development approach. Since the 1990s, this framework has maintained an important focus on adolescence, recognizing this as a critical period when youth undergo significant exploration and changes in their cognitive, biological, and physical characteristics (Lerner, 2005; Waid & Uhrich, 2020). The framework follows the 5Cs that youth gain from participating in positive youth development programming: Competence (academic, social, vocational

skills), Confidence (sense of mastery, positive identity, self-worth), Character (integrity, moral commitment, personal values), Connection (healthy relationships), and Caring (empathy and sympathy) (Wiiium & Dimitrova, 2019). Once these 5Cs have been achieved, a 6th C, Contribution, should emerge as youth develop into productive members of society (Lerner, 2004; Dowling & Anderson, 2003).

Positive youth development engages youth along with their families, communities, and/or governments so that youth are empowered to reach their full potential. Literature shows that positive youth programs can prevent a range of risks that youth may face during their developmental stages (Hinson, Kapungu, et.al, 2016). The PYD framework allows youth to engage and explore the outside world while gaining the important 5Cs to become productive citizens not only in their community, but globally. This framework does not focus on the challenges youth are facing such as learning disabilities or participation in risky behaviors such as drinking and drugs but instead focuses on bringing out youth potential within their environment (Damon, 2004).

When it comes to PYD, it is important for youth to have an environment that brings out their potential and helps nourish it. The positive youth development approach focuses on building mutually beneficial relationships between youth and their family, peer groups, school, workplace, neighborhood, community, government institutions, society, and culture. This ecological approach recognizes that youth development occurs through dynamic interactions across multiple environmental contexts, emphasizing the importance of supportive systems that work together to promote positive outcomes (Bronfenbrenner, 1979).

A youth's developmental growth is an important stage as they navigate the world and develop their character, influenced by various factors around them. Minority youth living in low-income urban communities may be at risk of negative behaviors, such as violence and substance use, due to environmental and resource challenges (Bonell et al., 2015; Grant et al., 2004). However, studies show that youth development programs, including community gardens and nature-based interventions, can help prevent these risks and promote positive outcomes (McCabe, 2014; Tracey et al., 2023; Waid & Uhrich, 2020). Research demonstrates that experiential learning opportunities, particularly those involving hands-on activities in natural settings, can effectively facilitate the development of the 5Cs through meaningful engagement and skill-building experiences (Kolb, 1984).

This study will use the positive youth development framework to examine how participation in educational farm programming contributes to youth development. The framework will guide the analysis of which of the 5Cs emerge through youth interactions with the educational farm environment, and how these experiences translate into positive behaviors and potential for community contribution. The study will particularly focus on understanding the mechanisms through which agricultural experiences promote competence development, build confidence through mastery experiences, foster character development through responsibility and stewardship, create meaningful connections with peers and mentors, and develop caring attitudes toward the environment and community.

## **Research Gaps**

Farm- based education is still a new and emerging research area, as there is limited literature available on the topic (Rodgers, 2011). This study will contribute to the growing understanding of educational farms and how they can help youth and communities. While there is substantial literature on community gardens tackling food deserts, there is limited research on educational farms addressing food desert issues.

Literature already exists that focuses on farms and agricultural programming. Positive youth development has been implemented often in 4-H programming (Arnold, Gagnon, 2020) and other programs like sports and camp (Waid, Uhrich, 2020). However, based on the researcher's knowledge, there is no known qualitative study that applies positive youth development theory specifically to educational farms. Though there is literature that hears from community leaders and stakeholders on what motivates adults to create these spaces for youth (Bass, 2019), this study will also add to that growing body of literature by hearing from other voices such as farm staff and educators.

## **Chapter 3: Methodology**

### **Research Design**

This study employed a qualitative approach through a case study design to develop an in-depth analysis of the Petersburg Oasis Community Farm's Youth Farm. Following Yin (2018), a case study is used to explore a phenomenon in detail within its real-life context, especially when it's hard to separate the phenomenon from its context. This design helps to gain a deeper understanding of the phenomenon in a “holistic and real-world perspective, “which can be from individuals, groups, organizations, etc. (Yin, 2018, pg. 5). A case study usually uses variables rather than data points and uses multiple sources of evidence to ensure a comprehensive understanding of the phenomenon (Yin, 2018).

As Creswell (2014) explains, qualitative research is particularly suited to examining the complex social interactions and meanings that participants attribute to their experiences within the program. This methodology allows the capture of nuanced, contextual factors that shape both developmental and community-level impacts. The study uses qualitative design through interviews and observation to capture an in-depth view of the participants' perspectives when it comes to the motivation and reasoning for contributing to the farm initiative and seeing the day-to-day operation of the farm and observing the activity that the participants engage in with the youth.

### **Research Setting**

The study is located at the Petersburg Oasis Community Farm in Petersburg, Virginia, a location designated as a food desert. Petersburg is located in South Central Virginia, 23 miles from Richmond, at the intersection of Interstates 95 and 85. The city

spans 23 square miles and, as of 2023, has a population of just over 33,300 residents. It is a predominantly Black city, with African Americans comprising 77.2% of the population (Petersburg City, Virginia. n.d.).

The city history dates back to 1748, when it flourished as an economic center built on tobacco, trade, warehouses and transportation, using its strategic location on the Appomattox River (Burnett, Owens et.al, 2017). By 1860, Petersburg has become Virginia's second largest city with a population of a little over 18,000 residents (9,342 white and 8,924 African American residents) (Burnett et al. 2017).

However, the city began to face challenges in the late 1950s with the development of Interstate 95 and 85, which went through Petersburg, weakening the city's potential for retail and professional services (Burnett et.al 2017). Additionally, the 1954 *Brown v. Board of Education* decision led to school desegregation efforts, which by the 1970 resulted in the "white flight" to less racially diverse areas (Burnett, et al, 2017). The 1980s marked a severe period of decline when a large tobacco company shut down its Petersburg plant in 1985, eliminating 4,000 jobs and triggering prolonged job losses and urban decline (Burnett et. al, 2017). This led to the population decline as people start to move to Richmond to find employment.

As upper- and middle-income residents left Petersburg, the city lost significant economic resources and services, creating ongoing challenges for the remaining low-income residents who face unused, deteriorating infrastructure and reduced public services (Burnett, et al., 2017). In 2010, Petersburg had the highest regional poverty rate in Virginia at 21.5%, and by mid-2016, the unemployment rate reached 8.1%, nearly double the statewide average (Burnett, et al., 2017).

Today, Petersburg continues to face challenges that are affecting their community. According to the County Health Rankings, Petersburg ranked last out of 133 of Virginia localities in 2023, placing it as the least healthy county in the state for overall health outcomes (Petersburg City, Virginia, 2023). The data reveals significant health challenges: adult obesity at 47%, physical inactivity affects 32% of residents, food insecurity impacts 18% of the population, and 36% of children live in poverty. Additionally, the city public schools face considerable challenges, including declining enrollment and staffing shortages.

The city is trying to find strategies to reduce crime activity with youth. In 2023, the crime rate in Petersburg Virginia was higher than in 96.2% U.S. cities (Crime rate in Petersburg, Virginia (VA), 2023), with 61 juvenile delinquency court cases per 1,000 youths (Petersburg City, Virginia, 2023). There has already been an initiative back in 2021 with the city and community to create a Youth Intervention Taskforce. During this meeting people shared that there is a lack of support from adults and the communities to engage with the youth and shared how community engagement can help reduce crime activities for youth (Danrzler, 2021).

Virginia State University, an 1890 land grant university, which is also located in Petersburg, has been a huge support in helping residents when it comes to outreach, education, and research. In 2015, the university along with the City of Petersburg and Department of Social Services used an abandon building to create an indoor farm with the purpose of increasing access to healthy food and an educational research facility for Petersburg, which was funded by a grant through the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA) (Harding St. Urban AG Center).

Within the facility, they had aquaponics and hydroponic systems, a kitchen, classrooms, and a loading dock for trucks to take the harvest to the community (Harris, Elliott, 2015). However, as of 2021 the facilities were shut down, which resulted in the community getting upset and disappointed with the closure. With the facility gone, the community was still struggling with receiving access to nutritious food.

The Petersburg Oasis Community Farm became another opportunity to help with facing the challenge the community was facing. It started out as the Petersburg League of Urban Growers (P.L.U.G), a program that was developed by the Farm director and middle and high school boys who were interested in community gardening. While managing a quarter-acre community garden and other smaller community gardens throughout the neighborhoods, the farm empowers Petersburg residents to practice healthy lifestyles, self-sufficiency, all the while fostering food security, supporting local farmers, and providing youth with valuable knowledge and experiences for the future.

While doing work with the P.L.U.G, the farm director was a farmhand for the owners of the land that was soon to become the Petersburg Oasis Community Farm. Once the land was up for sale, through the partnership of Agrian Trust and Central Virginia Agrarian Commons, they were able to raise \$145,00 for the 5-acre farmland (Wurtz, 2022). The farm “provides access to healthy, affordable food for residents living in the Petersburg food desert, along with educational opportunities for students and adults to learn about food production” (Wurtz, 2022). The youth from P.L.U.G also help develop the Petersburg Oasis Youth Farm on the land, which provides an outdoor space for learning and empowerment for youth (Alex, 2023). The farm has become a vital community resource, providing elementary and middle schools with access to nutrient-

dense local food, offering farm education for K-5 students, supporting beginning farmers, and maintaining infrastructure for cooking events, year-round gardening, and food preservation (Petersburg Oasis Community Farm - Central Virginia Agrarian Commons, n.d.).

### **Data Collection and Instruments**

Following Marshall, Rossman, and Blanco's (2022) guidance on qualitative research, this study conducted case study analysis of Petersburg Oasis Community Farm as an educational farm. Data collection began in March and concluded in May and drew upon three instruments. First, observations were conducted by taking field notes of the activities and programs and the individuals' interactions and behavior at the research site (Marshall, Rossman, et. al. 2022). Second, interviews were performed both in-person and via Zoom to capture participants' opinions and perspectives (Creswell, 2009). Third, document analysis examined both public materials (news articles and blogs) and private documents shared by farm personnel. These data collection methods provided insights into the youth farm's program and activities through direct observation, interviews with individuals who approved consent and met study requirements. All research protocols received approval from the Virginia Tech Institutional Review Board (IRB project number 25-086).

### **Priori Table**

A priori table was designed for the study to develop protocols of data collection (Appendix IV). A priori table is used to help structure research questions and protocols based on literature. The table was created to guide and organize the study when forming interviews for the participants and observation protocols, refining and organizing

literature that ties into the research question. The priori table can be found in appendix IV.

### **Semi Structured Interviews**

Semi Structured interviews were implemented to capture stakeholders' perspectives and experiences with the youth farm. This approach utilized open-ended questions to prompt participants to discuss their thoughts and lived experiences in depth, while allowing the researcher to ask emerging questions for further elaboration (Karatsareas, 2022). Interviews were conducted either in person or via Zoom based on participants' availability and preferences.

The interview guide was structured using a priori table (Appendix III). Interviews ranged from 30 minutes to one hour. All sessions were audio recorded, with raw transcripts generated using Zoom's transcription feature. Notes typed in Microsoft Word served as a backup recording method to ensure data integrity. Interview data was collected until saturation was reached. Throughout the interview process, there were difficulties recruiting participants, particularly with superintendents and after-school staff who were not available for interviews. Due to these recruitment challenges, and with the agreement of the advisor, additional observations were included to supplement the data. The decision to conclude the interview phase was made in consensus with the thesis committee.

### **Recruitment**

For participation in the study, individuals were 18 years or older and had direct involvement with the farm. Participants had to be either teachers, superintendents, principals, farm staff, farm director and managers, and after-school clubs such as the

YMCA or Boys and Girls Club. Contacts were provided by an informant, and I carried out recruitment via email (Appendix I). Emails were sent out once a week over a span of three weeks in the month of March from emails that were provided to me. People who agreed to be interviewed were provided with an invitation email along with a consent form with information regarding the study, contacts and information about partaking in the research. Once the form was signed by both the participant and the researcher (me), scheduling began to take place at the convenience of the participants, for sessions held in person or on zoom.

### **Participants Profile**

Five participants over the age of 18 who had been engaged at the farm for over a year were included in the study. Details about each participant are provided in Table 1. Each participant was assigned a pseudonym to protect their identity. Participants included farm workers and educators. The perspectives of each participant varied depending on their professional roles and lived experiences of engagement at the farm.

**Table 1: Participants Information**

<b>Participant</b>	<b>Profession</b>	<b>Gender</b>	<b>Zoom or in person</b>
Alex	Farm Director	Male	In person
Rick	Farm Staff	Male	In person
Cathy	Farm Staff	Female	In person
Chris	Teacher	Male	Zoom
Amy	Teacher	Female	Zoom

## **Observation**

Direct observations were recorded using a hardcover notebook that documented youth activities, and program implementations. The notebook was stored in a secure location after each use. An observation protocol guide was developed with the priori table found in (Appendix II). Three observation sessions were conducted for the study. Prior to data collection, I spoke with the farm director to clarify my role as a non-participant observer who would document programming and activities without engaging or interacting with participants. ‘

The first observations took place on March 17<sup>th</sup>, 2025, during a community event where youth were invited to tour the facility, engage with animals, gardens and other facilities, and the opportunity to plant their own seeds. The second observation occurred on April 25<sup>th</sup>, 2025, during a field trip for high school students from a neighboring school. The third observation was conducted on May 21<sup>st</sup>, 2025, with youth participants from one of the farm’s programs who received a lesson on tree training from the Department of Forestry. After each observation session, all notes were re-read for clarity and transcribed into a digital document for analysis.

## **Document Analysis**

Nine documents were analyzed as part of the document analysis. The document included published articles, blogs, news articles, and internal documents shared by the farm personnel about the program. Document analysis was conducted to gather detailed information about the programs offered at the farm, the farm’s goals and vision for youth engagement, challenges faced by the farm and their solutions, stakeholders’ motivation

for creating or engaging with the farm's history and development, and the farm facilities and resources.

### **Data Analysis**

According to Merriam (1998), data analysis is “the process of making sense out of the data [which] involves consolidating, reducing, and interpreting what people have said and what researchers have seen or read- it is the process of making meaning (Merriam, 1998, p.178). The constant comparative method was used to compare data and identify similarities, differences, and patterns across all sources of data (Glaser, Strauss, 1967). This method is used in grounded theory approach as it allows categories to emerge through ongoing data analysis (Glaser & Strauss, 1967). This strategy helped to compare data from the triangulation of field notes, documents, and codes to identify emerging themes across all three data types.

Thematic analysis was used to code interview transcripts. Thematic analysis is an approach to “organize and simplify the complexity of data into meaningful and manageable codes, categories, and themes (Peel, 2020 pg.7).” interview was transcribed while simultaneously listening to the audio recording to ensure accuracy in capturing participants' responses. Once transcripts were reviewed twice and minor edits were made while preserving participants voices, they were returned to participants for approval and any necessary revisions. Each approved transcript was then uploaded to Atlas.ti for coding and theme identification (Atlas.ti, 2023).

The coding process followed three stages. First, open coding was conducted line by line on each transcript to identify patterns and ideas from the data (Marshall, Rossman, et.al, 2022). Second, axial coding was conducted to find commonalities and

points of intersection within the codes and group them together (Fielding, Lee, 1998). Finally, these groupings were then compared with field notes and documentation to create themes and subthemes. The resulting themes and subthemes were compared with existing literature to ensure validity of the findings.

### **Trustworthiness**

Trustworthiness is essential to any research design (Marshall, Rossman, et, al, 2022). To ensure and enhance credibility and validity in this study, triangulation/crystallization was employed across multiple data sources to strengthen the reliability of findings. Systematic documentation of all procedures was maintained throughout the research process, and member checking with the advisor/ PI was conducted to ensure accuracy of interpretation and eliminate bias in the analysis.

The study maintained high ethical standards through clear communication of research objectives and obtaining both written and verbally informed consent from all participants. Transparency was also ensured through interview transcripts, which were cleaned and returned to participants for accuracy and verification. All data collected through interviews, observations, and document analysis were stored securely in locations accessible only to the researcher, with digital data protected on password-encrypted computers.

## **Chapter 4: Findings**

The coding of five interview transcripts resulted in 281 individual quotes. The analysis of the quotes took place alongside data from three observations and the analysis of nine documents. The triangulation of data sources resulted in seven themes that tie into the framework of positive youth development.

### **1. What is the influence of participation in educational farm programs on the overall well-being of youth in food deserts?**

1a: How do educational farm programs influence the physical, mental, and nutritional habits of participating in youth?

1b: How do educational farm programs impact the behavior outcomes of participating youth?

1c: In what ways do educational farms empower youth to become change agents within their communities

### **Theme 1: Youth Farm as a Space for Wellness**

**Theme Overview:** Participants' experiences and engagement with the farm demonstrated how this space enabled youth to practice mindfulness and supported their health. This space was able to help with mental challenges such as stress, gaining emotional skills like empathy and compassion, and learning more about food and how it affects their physical well-being. Interview data and observation notes revealed that the farm engages youth in wellness-promoting activities.

## **Sub Theme 1.1: Mental Health**

The Youth Farm promoted mental health through interactions and engagement opportunities. Participants shared that youth often experience stress due to pressures from school and home environments. One staff member described how the farm has the capacity to positively influence youth behavior, explaining how the space could help with youth becoming more relaxed and less stressed during farm visits.

It helps them become better and thoughtful, mindful. They process things, I think, a little different systematically when they learn something here because it takes time and patience. But I... I think it helps them. It connects them a little bit. To be able to handle stress. Because they go to school, they're at home and with family. They're outside in their normal community; they come here they could almost take off the mask and the cape of trying to be superheroes in life and just breathe. So that kind of that's got to grow you. That's got to make you feel better. That's gotta be a heart chakra. That's gotta be a throat chakra. That's gotta be core memories of just I can breathe again. I can take it all off and then now I got to go back but I'm able to handle it and cope. (Cathy)

Further, both teacher participants observed the lasting impact of farm experiences on youth well-being. One teacher described how the farm provides different ways for kids to interact, noting that youth, “see how it relates to their life and the people around them, and they plug themselves in wherever they feel comfortable and I see that joy and comfort kind of come out of them” (Chris). Another teacher noted how the joy experienced at the farm could serve as a positive interruption to academic stress. She emphasized how positive farm memories could help youth reframe their school experience and maintain engagement despite academic challenges:

One of the things that has actually stuck with me the most was it's several of them asked me if we were going to be able to go back and the joy. I think there was a lot of joy. So, I think that when you experience that joy, you are healthier, you are happier, you are less stressed. You can also be more engaged with school; school doesn't feel like such a depressing and... oppressive place. It can feel like, oh, well, remember that time we

went to the farm and, like, how fun that was? so it can kind of be that one little interruption, maybe, in a story of how frustrating their day or their year might have been, um, and so I... think that that was pretty important.  
(Amy)

The youth farm incorporates mindfulness practices into its programming. Observation notes documented that farm directors and staff initiated breathing exercises before each activity. During these exercises, youth made sounds resembling bumblebees, and afterward, students expressed feeling “good” and “at ease.” The farm director explained that these breathing exercises serve as stress-relief tools, providing youth with “at least one breathing exercise that they can take home with them” (Alex). He further elaborated on the space’s mental health impact:

Then the breathing exercises. I've had plenty of youth that come back to me and say, “Alex, I do that water breathing all the time now.” You know what I mean? So just to have those tools in their pocket to be able to pull out whenever they need to. I think that has a big impact on your mental health and then simply coming out here and smelling fresh air and seeing life run around. You rarely see trash on the ground here because people protect this space. So to be able to walk around somewhere in Petersburg and not see litter, you know what I mean? I think that makes an impression on the mind, which has to have an impact on mental health somewhere down the line. (Alex)

Farms can positively impact youth mental health through direct engagement with the environment and agricultural activities. Additionally, farm staff provide youth with coping strategies and stress management techniques that they can take with them after leaving the farm.

### **Sub Theme 1.2: Emotional Health**

Youth develop positive emotional traits through engagement with farm activities. Participants described how the youth farm cultivated essential emotional skills including patience, compassion, and empathy. These emotional competencies align with positive

youth development theory, particularly the PYD framework, with specific emphasis on caring and compassion (Wium & Dimitrova, 2019).

Patience was identified as a fundamental skill developed through nurturing plants and caring for animals. Observation notes documented how the farm director and staff used educational moments to reinforce patience-building concepts. For example, when showing students the mushroom log, they explained the yearlong growing process, explicitly connecting this to the practice of patience. During the interview with the Farm Director, he shared how youth can learn patience early on by taking care of plants and animals, but they can take that skill with them later in life and used the example of having to take care of a newborn:

So, with the experience with the animals and planting the plants out, the patience they get from that, seeing it like you sow the seed and then weeks later you see it, you know, start to grow you get to learn that's a valuable lesson. That you get to learn before having a baby. You know what I'm saying? You learn that when you have a child, but it's not too late then. But you got a child now. You know, you get to learn how to practice patience. You get to learn how to nurture something with love and compassion and then the fruits of the fruits of that labor, what that feels like just by growing a plant. I think that does something for the mental. It brings in that abundance mindset. You sow the seed, and you got several seeds. A couple of months later from that one seed. So, abundance, I think helps with patience, helps with mental health and calming you down and paying attention to what's going on around you. So, if you can do that, if you realize that when you're working with the rabbits or working with plants, you seem to be at peace. Well, why is that? It's because I'm focusing on the moment. I'm focusing on what I'm doing right now, not the stress from the past. Not the anxiety of the future. I'm in the now. So, it's a way to connect people with the now. You know what I mean? So, I think that helps with mental health. (Alex)

Participants observed that youth demonstrated compassion and empathy, primarily through their interactions with farm animals. When asked about the key skills youth

developed at the farm, one teacher noted identified empathy as the most significant outcome, particularly through animal connections:

I think empathy is number one and that is really profound with connection to animals. Again, I think that's kind of an instinctual thing. You don't necessarily have to be told, or taught, or trained. Obviously, those things are important for proper handling and interactions and being safe and respectful, but... empathy is the number one that I would say (Amy).

The Farm Director echoed this, noting that youth “learn things like compassion when it comes to how to hold the rabbit gently and be compassionate when holding the rabbit” (Alex).

Observation notes documented how staff used animal interactions as teaching moments for emotional regulation and conflict resolution. When the farm director was holding a chicken that became agitated, the farm director calmed himself to soothe the animal. He used this demonstration to teach youth that remaining calm in stressful situations can help prevent conflict, drawing parallels between animal handling and human interactions. The youth took turns holding and petting the chickens and eventually the rabbits while the farm director reinforced the connection between care and nourishment, explaining that “you are what you eat, eat so it’s the soil, animals and eggs and it’s the love that you give to each.”

### **Sub Theme: 1.3: Physical Wellbeing**

Participants described how the youth farm promotes physical well-being through outdoor engagement and physical activities. Participants emphasized the importance of getting youth outside and physically active as an alternative to indoor activities. When discussing challenges related to youth well-being, one teacher highlighted the natural benefits of outdoor physical engagement:

One is using their bodies and the energy that they have in a way that is natural, which is like being outside, feeling like the sun and the air. In a school, you're just like forced to sit a lot of times, you know, and you're inside, and you're sitting, and I think that their physical well-being is an important part of that. It's not just nature, it is this thing that we go out and like go off to the mountains or the beach or whatever kind of like adventure but it's also this thing that's just like all around us like let's get outside and let's get connected to the earth and the world. (Chris)

A farm staff member shared similar sentiments. Contrasting outdoor farm work with technology-based activities:

You're hanging out with a little clique of people who, I don't know what their thing is these days, but they like to play video games, or different influences like social media can affect a youth. I think having another option, you know if you come home from school and you're just sitting there watching TV or getting on your laptop and or you're chatting with your friends you're texting with buddies or you're not getting outdoors where there's fresh air where this is actual soil. Science that shows that getting your hands in the dirt can relieve depression is scientifically proven. I think... that very method of getting kids outside and getting them to experience nature and to experience nature growing food are just vital to their health. (Rick)

Observation notes supported these perspectives, documenting how farm staff incorporated physical preparation into activities. Before beginning a farm tour, staff led youth through stretching exercises to prepare their bodies for physical activity. Additionally, document analysis of the organization's website revealed programming specifically designed to get youth engaged and have them come in and get their hands in the soil, their bodies moving, and their hearts full as they explore everything from growing food to making healthier choices" (Petersburg Is Growing Inc., 2024).

#### **Sub Theme 1.4: Food Consciousness and Nutrition Education**

Participants shared that youth developed a more food-conscious mindset after engaging with the youth farm. Participants noted that youth had preconceptions about certain vegetables they might dislike due to different preparation methods compared to

trying fresh produce from the farm. Chris expressed that when students tried a new food, “Sometimes, some kids they try the mushroom, the fresh mushroom. I just keep thinking about these shiitake mushrooms. Half the kids were like, “gross I don't want that” and half of them were like, “That's actually pretty good. It's not weird and mushy and slimy.” It's like, well, yeah, it's because it just got picked.”

A farm staff member described experiencing youth transformation regarding food choices; sharing how one youth wanted dietary changes not only for herself but for her family:

This one little girl, she wanted to do a menu for her mom because she was tired of mom doing, like I said, TV dinners or you know, Chipotle all the time, come home with a bag and she's like, I am so tired of burgers and fries. Can you show us something different? So, I told her, I was like, okay, we're going to do, we're going to do like Caesar salads or something simple. And “she was like, yeah. I can do that”. I sent her a little text message of what ingredients to go to the market and buy. It was really, really simple, not expensive at all. And she was like, “Chef C, I did it. It was so good”. And I was like, girl. Yes. I don't know where your mama is, but I know you ate good that night and mama couldn't say no. (Cathy)

Document analysis reveals one activity with a personal chef, where they prepared dishes such as sweet potato cornbread, vegan fried rice, and lasagna soup, all packed with vegetables. Through this experience, youth not only learn about nutrition education but receive “nutritious meals that energize them to keep learning and growing” (Planting Seeds, Growing Leaders, 2025).

Participants also highlighted how the farm helps youth develop an understanding of food production. One teacher noted students' curiosity about food, stating that when engaging with his students, that when engaging with the youth, “they are so interested in

the many things that food does for our bodies and souls, I think that something that I'd love is that we could just talk about food" (Chris).

Another teacher noting the transformative power of exposing youth to food production processes:

I know that some students have exposure to that, but the simple act of being able to see food growing and being produced and being washed and cared for and harvested, and the dangers and the threats of actually just being able to grow something is really... profound, and you can't understand it until you see it. So, I think that... when students can actually experience that, they just have a much greater understanding of their world, of their food that they're eating, of the choices they're making. That can absolutely transform their health and their lifestyle choices. I think the very first thing is just exposure. I would say that farm programs transforming youth learning experiences is really just exposure. It's so important just that... students get a chance to see, to see what's happening, with both, produce and with animal production, (Amy).

Observation notes documented youth engagement and excitement with learning about what is growing at the farm. During the farm tour, youth encountered the berry orchard, they became excited and asked questions about blueberries and elderberries. Farm Staff responded by explaining the health benefits of these fruits and discussing the strategic placement of blueberry plants, demonstrating how the farm integrates nutritional education with hands-on learning experience. These are experiences that youth gained knowledge to prepare and gain knowledge themselves and their families, changing their food perspective.

## **Theme 2: Farm as a Space for Youth Development and Transformation**

**Theme Overview:** Data reflected on how the farm space serves as a catalyst for youth to discover their potential and envision their future from their engagement at the farm. Youth grow and learn life skills and develop a sense of "self-worth." The farm also

serves as a transformative environment where stakeholders observe shifts in youth perspectives and provide alternatives for at-risk youth. This theme captures the growth and development that participants observe when youth engage at the youth farm. This ties back into the PYD framework when it comes to building their sense of character (Wiiium & Dimitrova, 2019).

### **Sub Theme 2.1: Farm Supporting Youth at Risk**

Participants expressed that the farm provides space for youth engaged in risky behaviors and helps regulate frustrated youth by offering an outlet for their frustration and an alternative to criminal activities. Participants shared that this space transforms the youth mindset and provides a channel for emotions. They also noted that youth engaging in this space can see their experience as a way to generate income, with stakeholders providing support and guidance. This theme refers back to the PYD framework about how positive youth programs can prevent a range of risks that youth may face (Hinson, Kapungu, et.al, 2016).

Farm staff and teachers share how youth experience frustration and are uncertain about managing their feelings. One teacher shared how students who are frustrated or angry may struggle in a school setting, but when they have access to a space like the farm, “just having like a place where that energy can go that's changing and transformative instead of being told like you're too loud or you're too rowdy or whatever you know and then you check out.” (Chris).

One of the farm staff members shared how the youth farm and its activities can help youth when they feel angry or frustrated when asked how the farm mitigates youth criminal behavior:

It gives them something else to do. It's a change of mindset. Violence needs structure. It needs something to do, and you can have a bad day and come out here and tear up the yard all day. But now you've done something good because you broke ground that you need to throw some seeds in now because you're angry. So, you know what? You want to be all of that and angry and you need to violate something? Come on. I got some trees you need to chop you know, I got some grass you need to cut. Run that mower all the way in the ground. That's all right. But let's do something different. It gives them something to do with their hands. When you don't have anything to do you get busy doing something you ain't supposed to do. So, give them something to focus on, to look forward to and they'll be better. (Cathy)

The farm also provides alternatives for at-risk youth, particularly juvenile youth, as evidenced through document analysis and interview. Document analysis reveals that the youth farm operates a program named “Gang Culture 2 AgriCulture”, which “empowers teens to break free from the cycle of gang involvement and pursue a positive, productive path” (Petersburg Is Growing Inc.,2023). The farm uses hands-on experiences to teach youth about life skills, farming practices, and explore career opportunities. The program also fosters youth development and responsibility towards themselves and their community through service, building resilience and self-esteem (Petersburg Is Growing Inc.,2023). One of the farm staff members shared their experiences helping with the program and how it changed juvenile youth’s outlook on life:

We worked with some youth who were in I think juvenile detention and they came out and he worked with a group of had four or five of them last spring or summer. I can't remember exactly the time frame. What I saw with that program he gave them was a difference in them that they really changed their whole kind of attitude towards life and their purpose. I think they felt a gratifying experience by seeing that there is something else instead of being part of a gang or being you know just in a... state of taking drugs being depressed or you know whatever might have gotten them into juvenile to begin with. (Rick)

Participants also expressed how financial challenges can lead youth to criminal activities.

Participants shared that this could result from youth seeking ways to provide for their

families or feeling envious of peers who have money. One teacher discussed that offering up a path through the farm can provide career opportunities for their students, with the teacher intervention to help students reach their goals:

So, when Mr. Alex has said, you could come here and you could do your own work, and you could make your own money, you could do good for your community, and you could give people healthy food, and you get to keep the money and maybe... maybe you can find ways. I can work with you to figure out how to get yourself registered as a small business. Or maybe you just sell to people, but like there's ways to do this that are allowing you independence and are not gonna make anybody, any law enforcement, any criminal activity want to come after you for this. This is a good thing that you could do, and you don't need anybody else's help to do it. You don't need any money. I'll help you get started. (Amy)

The Farm director shared similar sentiments when discussing youth criminal activities and how the farm can mitigate youth involvement in crime by providing legitimate income opportunities:

The obvious is it gives them an alternative, right? That's the obvious, right? Now, when I talk to the youngins here and youngins meaning like late teens you know the cats that are out here robbing each other, the cats out here shooting at each other, all that. Like, what's going on? Talk to me, man. Why, bro? Why? Y'all were in my seventh-grade class together. Now y'all are shooting at each other. You know, six years later, like what's going on? Money. He got money. I don't, I don't got no money he does. You know what I'm saying like money. So, it's like, bet. That's why I had a conversation about money and it ain't nothing. It's energy exchange. Don't get caught up on the dollars. Like, as long as there's energy, we can get money. You get the scarcity mindset and think, oh, if he's getting the money, then I'm not going to get done and if I'm not getting none, then my family's not going to get none. We're not going to be eating. We're going to be, you know, like it just turns into this whole thing. Instead of it being, hey, how can we collaborate on getting to this? You know what I mean? How can we connect and make things happen? I think showing them how they can sow seeds and people will buy those things that come from those seeds. You know, I think that's like obvious, right? This can be a business. It can make you money. There's no need to run up in somebody's house or break into somebody's car when you're earning money legitimately. That's cool. So that's obvious but on a deeper level than that is the experience gives you that wealth mindset, that abundance mindset. I sowed a seed and

from that seed, I got several seeds. So, the mindset can be applied to any aspect of life, and I think that's the most valuable thing. (Alex)

Observations from farm activities reflect similar sentiments from the participants regarding farming as an alternative to youth criminal behavior and a legitimate income source. During one of the farm tours with high schools' students, the farm director discussed various ways students can earn income through farming such as selling produce like tomatoes, mushrooms, and herbs, explaining the growing process to students. The farm director's intention for discussing this was to show how youth that students could replicate what is grown at the farm even in their own backyards to generate income. One farm staff showed students their community plot and taught them how to grow and sell spring onions at the market. Through these experiences, youth are provided with alternatives that help them turn away from risky criminal behavior.

### **Sub Theme 2.2: Life Skills Development**

Youth also develop life skills through their farm experiences that will benefit them in the future, whether positive traits instilled and fostered at a young age or skills that will help them as adults. One of the farm staff members expressed that discipline is one of the most important skills developed on the farm, "Discipline comes first. Integrity, responsibility, accountability because something else is dependent on you to live," (Cathy). Another trait mentioned by Amy was kindness, observed when students engage with the farm:

I am thinking most about, um, a time when...there was a student that I remember um, had not necessarily... demonstrated a lot of warmth or, uh, kindness towards their classmates, and then as soon as they were around both the animals and Mr. Alex's kids just younger people there was suddenly this... like, lightness and this kindness to them. (Amy)

During the interview and observations, the farm director emphasized, “one rule on this farm for adults and youth is to treat everyone and everything the way you want to be treated” (Alex). This rule helps establish respect among youth interacting with others, peers, and community members.

The farm is also using its space to foster life skills that youth can use later in life or upon entering the workforce. Document analysis revealed the farm’s mobile market stand, which brings local produce to neighborhoods in food deserts while serving as a youth development tool. The farm employs youth as managers and interns, with the market director providing, “providing hands-on experience to youth and young adults, equipping them with essential skills in marketing, customer service, and farmstand operations (Petersburg Is Growing Inc, 2024).

Another program providing life skills is through the Young Pharaohs of Petersburg program, a year-round youth fellowship that empowers high school students to discover their potential and prepare to lead their community with integrity wisdom (Petersburg Is Growing Inc. 2024). This program offers youth opportunities to explore entrepreneurship and financial literacy through projects such as how to start their own business and managing a community fund (Petersburg Is Growing Inc, 2024). One of the farm staff members described planned activities for the Young Pharaohs:

One of the things that we're going to be working on with the Young Pharaohs is to know how you go to a job interview and how you conduct yourself in an interview. I think one of our other board members is specifically going to sort of a class or a session with them on how do you dress? how do you talk? How do you prepare yourself for the interview and Lord knows I could jump on that myself. (Rick)

The data showed that youth have the opportunity to gain life skills, such as soft skills and preparation for the workforce through engagement at the farm.

### **Sub Theme 2.3 Youth Empowerment and Potential**

Participants shared how the youth farm serves as a space for fostering empowerment and helping youth recognize their potential in achieving goals and obtaining new skills. Through these farm experiences, youth gain confidence and see potential within themselves and their community while experiencing empowerment through stakeholder engagement. This aligns with the positive youth development framework emphasis on community engagement empowering youth to reach their full potential.

Youth have opportunities to reach their full potential when engaging at the youth farm. When asked about how the farm shapes youth potential, Chris shared that when youth are “allowed to be drawn toward the thing that interests them, but also clearly connects to the bigger picture, it's easier for them to see their potential, too, like this is my potential for how I could help with this thing you know and...I think that's a really important part of just figuring out in a community.” (Chris). The youth farm’s non-formal structure gives the youth chances to explore and apply real-world experiences compared to a traditional school setting.

Rick shared the same connection about how this space helps youth see potential within their community:

I think getting those youth to understand what we do and how transformational it can be will help them be able to take that back to their neighborhoods, their own communities and keep the transformation. This was shown from observations when the farm director gave the option to do

whatever they want in terms of activities after the farm tour to have them step out of the “education mindset and to just engage in life (Rick).

Regarding empowerment, participants shared how this space builds confidence (Rick, Alex) and fosters autonomy among youth. Empowerment helps youth with making informed decisions and become active within their communities through supportive environments. When asked about youth learning and personal development through the farm, Cathy shared how the farm uplifts and empowers youth:

Because they get out here and they're like. They're doing it all by themselves. It gives them power. Like I did that, it's empowering me, I am growing. You're not feeling like somebody was standing over them always constantly watching them and making them feel less thin. It's empowering out here to be able to play and watch it grow. (Cathy)

In similar context, Alex shared how youth at the farm develop a sense of empowerment to make their own decisions and understand the impacts on themselves and their community:

They get some experience while they're here. I feel like if they take that in just a little bit, they'll be empowered enough to make decisions on their own well-being, and you can't beat that. I feel like that's you're no longer depending on somebody else to decide on how you're going to live. You're deciding on it now. You might have to figure out where to go get those tools from those resources, like where you're going to get that fresh food from but at least now, you're a step closer to that, to your goal. So, I see it at... I see it on two levels. As an individual, they're realizing that they can have an impact on themselves. They can take control over their own well-being but then step outside that box. They can figure out how to play a role in this local food system that will help others make their decision in choosing how they choose about going about their landing. (Alex)

The farm provides youth with the opportunity to be empowered and to be themselves in this space while also developing a sense of independence. They are also able to see the potential within themselves in this space and how they can make a difference.

### **Theme 3: Youth Connection and Discovery on the Farm**

**Theme Overview:** This theme emerged as participants shared how the farm can be used for youth development. Since the farm is an experiential space, participants shared that when youth engage in this space, they often get exposed to things like produce, which they may never see outside the grocery, or new experiences when engaging in farm activities. Participants also shared how the youth farm can be used to build relationships and connections, not just with each other but connection being knowledge that the youth make with their experiences. Referring to the Positive Youth Development Framework, this farm ties back to the literature at how positive youth development can happen through socializing systems such as the youth farm (Development Services Group, Inc., 2014).

#### **Sub Theme 3.1: Exposure and New Experiences for Youth**

Participants shared similar views with how the farm provided exposure to food and activities that youth have not had the opportunity or never tried before. They also expressed how youth gained new experiences as well that enabled youth to explore that experience more if they enjoyed it and foster personal growth.

Multiple participants expressed that youth who come on the farm do not know where their food comes from and that the farm offers opportunities for youth to be exposure to fresh produce. For example, Chris describes his experience with his students when they engage at the farm, and they are having the opportunity to explore and try new things:

I have seen a lot of kids like take and try things that they don't always get a chance to like try a mushroom straight out of the off the log where it was grown or um trying all sorts of different herbs like that's another thing

that's really cool to watch them just explore like this is where flavors you know come from. (Chris)

Rick shared the same perspective of youth having the opportunity to try new things when he discusses the benefits of growing your own food and how it helps youth who may not see produce grow in person, instead “They may have had a school lunch that has like overcook broccoli mix with some rice and something else. They probably didn’t know what it is and they probably didn’t like it.”

Participants also shared how they are bringing these new experiences to youth engaging in this space. Tying back to youth having exposure to local produce, Cathy offers an experience for youth to cook meals with the produce they learn about:

I'm just showing them little things like you can just do this or will you do chicken meatballs that have more veggies than chicken in it. And they're like, “are you sure?” “Yeah, and I throw a little sauce on it. It's just tomatoes and Italian dressings. And they kill it. So, for me, that's my job.

From observation notes, there were multiple instances of youth having new experiences and learning more about where their food comes from. For example, the farm director had youth to get some rosemary asking them to feel it, touch it and eat it and describe how it made them feel. Another experience was when youth were removing the weeds during an activity and did not know how to use a certain tool, they were provided. Farm staff helped youth to learn how to use the tool and prepare a raised bed, providing youth with new experience for them.

### **Sub Theme 3.2: Youth Engagement in the Farm Environment**

Participants shared their views on how the farm can be beneficial and serve as a tool for youth development. Some participants shared that the farm provides a way for them to feel free and have fun. The farm director also explained that he wanted the space

to empower youth, helping them develop positive lifestyles and become positive community members.

Participants, especially the teachers, expressed that at the farm, youth have a sense of freedom compared to being at school. For example, Amy expressed that at the farm it gives youth a change of freedom to try things out and that being on the farm brings “in an open air with a lot of things going on around you, a lot of stimulus, I think that you get a chance to kind of explore.” Chris also shared that at the farm he does not have to worry about his students behaving inappropriately as it gives them the time to explore for themselves:

I don't have a fear ever when we go to the farm that my rowdy kids are going to be rowdy because they know that's going to be a space where they are going to get to explore. And that's usually where they have all these questions and energy, and they're not allowed to ask them in a lot of places in school. (Chris)

In that same sense, Alex also shares the importance of what the space was designed for when asked about the demographic of youth he works with:

Any youth, I mean, specifically this space was specifically designed for Petersburg youth. I wanted them to have a sense of pride. When it came to this space. But of course, the space is for all youth, and I'm not talking about kids that are in school. I'm talking about anybody that still feels young at heart. You know what I mean? So that could be a 70-year-old who still wants to hold on to their youth. I want this to be a space that they feel like they can reconnect with that. But the majority of the groups that come through here are school-aged children. (Alex)

Amy shares the same sentiment when it came to how this space is being used and how impactful it can be not just for youth, but for others in the community and can be used as a space for engagement:

I think that people are... drawn to spaces where they feel good, where they get something from it, so, like you know, whether it be something

tangible, like a meal, or, uh, produce, or a skill. Or it can just be a feeling like, feeling connected, feeling positive, meeting new people. Um, and then from there, then you can create transformation. You can organize, you can, share knowledge, you can discuss important topics, you can do any kind of community building or political involvement, I mean, all of that can occur. Um, you know, with... I think of those things, and I think about transformation tools but then I think that before you... get to any of that, people need to feel good there, and feel... wanted and feel interested, and so I think that would be important. (Amy)

Participants expressed that the farm provides an environment for youth to be themselves and have a sense of freedom outside of school. They also shared that the farm can also have youth engage with the community and strengthen that community support through multiple programs and initiatives.

### **Sub Theme 3.3: Connections and Relationships Formed Through the Farm**

Participants also shared about how the farm helps to form connections with not only one another, but with the land and can be used to create and build relationships. When it comes to connections being formed, and relationships being bonded, Chris, Amy, and Alex, all presented different ways that connections are made at the farm. Chris shared that at the farm, his students forming connections and he witness them “talk about different stuff from like their family, different foods and stuff and it opens conversations rather than be like “Whoa, that’s weird, you eat that?” Amy shares how perspective of connections being made at the farm in terms of youth gaining a sense of connection from engagement at youth farm and in the future, they hold on to that connection when they are out in the world:

I think, is the... again, it's the connection piece. Being able to feel connected to something, tethered is really, really cool. My hope is that they can feel that, and in the future, that could be kind of like a little... compass, if they're ever in a community space or with a certain person, or on a team, or at a job, and they get that little feeling, again, like,” oof this... this reminds me of Mr. Alex's Farm”. It's like, okay, well, that's a

good place, and that's a good measure of feeling... good about yourself and about the people that you're around. If they can have that and then carry that with them as kind of like a... Yeah, like a North Star almost, I think that's a really powerful thing, because once we can feel that, then we know in our bodies, like, oh, okay, I like this, this feels good. So, then you can kind of seek it out, too as you go forward. (Amy)

Alex shared that he sees a connection that is form within the community itself in terms of food and who is growing that food and the consumers:

So, I see it as them recognizing that it's not just about farmers growing food and us eating food, there's a connection there. We're in the community because they grow the food that we eat, and we pay for the food that they grow, so we're in community. (Alex)

Opportunities for connections to be formed at the farm are supported by field observation notes. When youth and other guests arrive at the farm for an event or activity, the farm director creates a welcoming environment by asking what their name was and how they were doing. The Farm Director also encourages youth to call each other brother and sisters to build connections.

When it comes to relationship building, Chris and Amy share how their students interact and work with one another when they are engaging at the farm space compared to when they are in the classroom. Chris shares his view that youth can build teamwork skills at the farm because of multiple tasks and having a goal in mind. He shares that when it is back at school, it's completely different from group roles in a classroom." He expressed that the youth farm can help instill "collaboration" to youth if they keep practicing there. Sharing similarities when it comes to the differences in the classroom and the youth farm, Amy shares how a change of environment opens ways for her students to talk and engage with one another:

I would also say that the ability to just talk with each other is really pretty interesting to see the ways when you change the environment that

someone is in. You put them in a place where you are all literally on equal ground, that communication can start to flow in ways that it doesn't necessarily in other places or spaces, or with other people, especially if you have the opportunity. I have a couple students who have gone back and actually continued to work with Mr. Alex. (Amy)

Alex shares an interesting perspective when it comes to relationship building and saw an opportunity for how the farm can be use as a space for educators to build relationships with their students. Educators already face challenges such as emotional strain and burnout, long working hours, and limited resources and support. Teachers go through a lot and still are the ones who prepare the next generation of youth. Alex shared that he sees that educators need help and one way was using the farm:

But I have learned that our educators need help. I knew that as an educator before I jumped out the classroom, but I've been out the classroom for a while. They still need our help. You know what I mean? Not that they don't do their job well. It's just their job is getting more and more challenging. This is the way to help them. You know what I mean? When they can just kind of walk around and enjoy themselves too while you'll learn with their students. I think that's super important. I learned that too. That when educators learn with those who they're educating, it makes that relationship a lot stronger. (Alex)

## **2. What are the primary motivations for stakeholders to engage in creating and supporting an educational farm in a food desert?**

2a: How do different stakeholders perceive the success and impact of the educational farm on the community and themselves?

2b: How does collaboration between farmers, educators, and community organizations enhance the effectiveness of educational farms?

### **Theme 4: Stakeholder Motivations**

**Theme Overview:** Participants expressed multiple experiences and explained why they wanted to engage with the youth farm. Some participants shared having experience with

farming during college (Amy, Chris), while others pursued farming or agriculture-related activities from other careers, but had a passion for gardening or just food. (Cathy, Rick, and Alex). What motivated the participants ranged from innovative ways to teach students and leaning towards non-traditional methods, having youth to learn where their food comes from and practice mindfulness, or guiding youth in becoming active and positive forces in their community.

#### **Sub Theme 4.1: Teacher Motivations**

Both teachers shared how impactful having an educational farm as a resource for youth learning and engagement. They described that this is a space where you can engage with and connect to the land and with one another. One teacher expressed understanding the power that they have as a teacher, they use it to provide youth with opportunities like going to the farm:

Then I was like, okay, well, now that I am in this... It's a position of power. Being a teacher is a position of power, but now that I... have that power I was like, well, I want to be able to have students experience that too. See what a farm is like, see what it takes to grow food, how... important and careful you have to be with animals, and that... you know, milk doesn't just appear, and ice cream doesn't just appear. Those came from an animal's body. (Amy)

The other teachers share similar sentiments when discussing their background working at an urban farm and having the opportunity to help them to learn how to grow their own food. He explained that he valued the importance of having a space where communities like the farm could come together and how that lead him to teaching:

And that's kind of to the thing I was saying about schools. That's part of why I wanted to teach. So, when it became like, oh, I really could start to

bring these two parts of the world and my world together, I felt really excited about getting to do that. (Chris)

Both teachers also shared their hopes for the future of educational farms and described the shift that needs to be changed in the traditional education system. Chris expressed that he wanted more youth to engage at the farm and wanted to see in the future if learning could be connected to non-traditional methods in the future:

I would love if that was more if we could push all of the learning to be connected to stuff like that that's non-traditional because I think that's where that's where I can see kids like making connections to the stuff that like is going to stick. They will continue to talk about when we go back to school or even when they leave the class. That's the kind of stuff that they really learn deeply, not just like memorizing for the test or, you know, remember until they're done writing that essay or whatever the case may be. (Chris)

Amy shares the same sentiment about how traditional methods is narrow and standardized and the farm could open youth to explore and broaden their knowledge:

Unfortunately, I think that our... traditional educational setting in this country has moved a lot closer to a prioritization of outcomes and... standardized, uh, expectations. Learning can be so much more fun than that and I think learning should be organic. I'm getting emotional, because it just makes me really sad. Um, so I think that the farm program is so... important... it's an important kind of... thing for them to experience, because... every day, all day, they are... kind of taught, like, this very specific curriculum. Again, like, some teachers do a really good job of integrating interesting activities, or choice for, like, projects and assignments and stuff like that, but... a lot of what students are expected to do today is very standardized, very specific, kind of a... narrow-minded... kind of outcome. (Amy).

Teachers expressed that they had similar experiences with farming prior to teaching, showcasing having prior knowledge of these spaces. This led to teachers using their role as a teacher to have students share similar experiences and to have youth engaged at the farm.

## **Sub Theme 4.2: Staff Motivations**

Staff also shared their motivation for having a hand in youth engagement at the farm, what they are looking forward to in the future and what motivates them. Cathy shared how it motivated her to see youth trying the meals that she cooks, which were new dishes the youth never tried before. Cathy shares her experience with youth when she is having a cooking activity, and they usually hesitate to ask for seconds. She also believes that the next generation and so on will continue to learn to do better:

And it motivates you just to... just to do go even harder because they wanted and once, they come out of that shell of being, okay, maybe I shouldn't say anything because maybe I can't ask for a second bowl and then when you start seeing them to burst out, I'll be like, oh okay. You're getting comfortable. Now let's take it a little step and see what else I can push you to. And they're like eating it up. That's the part where you're like, okay, this is not going to be like the last generation because this generation is learning how to be better, eat better, do better, try harder and just not try for somebody else, but try for them. And that's where they need to be more self-loving. That's what they get here. (Cathy)

Rick also shares similar sentiment when discussing his passion to work more with the youth. Having previously been a teacher himself, he always enjoyed working with youth, and at the farm he runs an activity where he reads to the youth. Now in being close to retirement, he still wants to do this kind of work:

The next-door elementary school I've told Alex, you know, if you need me to come down here, I would love to participate with you to help encourage them to become more involved, I feel like I've got a lot to do and I'm looking forward to that because I'm at the age where I'm close to retiring. Within a year or two, I probably will be at least mostly retired, if not fully retired. So, this is kind of what I wanted to right now. I can't really think of anything else that I'd rather do, I just love it so much. (Rick)

This was also supported through observation when another one of the older farm staff members was talking to the youth on the field trip. Youth were actively listening to the farmer as he told them that he has high hopes for the youth and uplifted the youth in that

they are smart and have the opportunity to get an education, when during a time he could not obtain.

### **Sub Theme: 4.3 Farm Director Motivation**

The farm director discussed in great length what inspired and motivated him to create and develop the youth farm, how he envisions this space to be used and what impact it will have on the youth. The farm director also started out as an educator in Petersburg and went to a conference and learned about what a food desert was and let him down the path to where he is now. He emphasized that this work is what he intends to stay in and express that he only got engaged when he was an adult:

I've learned that this is what I want to do for the rest of my life. You know what I'm saying? I want to work with the land. I want to serve the land. I want to serve my community, and I want to do it with my family. You know what I mean? I've learned, like I said, everything that I think the youth have learned, but a big thing that people might not guess from an adult is I learned where our food comes from in the process. I mean, of course, I knew it came from a farm. But I had no idea what it took for a farmer to grow that food and then what it took after that. (Alex).

Observation notes showed that Alex continues to express that sentiment that he only got into agriculture when he was an adult. He shares with the youth about how his experience started at the farm without prior knowledge or growing up on the farm, which students acted in awe and shock. This helped to instill a connection to the youth who may feel they are in the same boat and no matter what age they are, they are still able to engage in agriculture.

Alex also discusses his goals for this space for the youth. He emphasized that he wants the farm to be used as a way to not only for youth to have a productive lifestyle, but also make a difference in their community:

I mean, the goal, I hope, and I pray that the goal is to make productive citizens right, period. Not scholars, not the greatest researchers, not 90% of our kids going to college like I think you know we've seen that that ain't always the plan. The goal here is not to teach you to be a farmer. The goal is to encourage you to be an environmental steward that goes for anywhere. Not just the farm, but maybe the greater community. You see trash in your neighborhood, pick it up. It could be smaller than that. It could be your bedroom. That's your environment, steward that thing. Vacuum that floor, sweep that floor, make that bed, clean them windows, organize that closet, right? Like, not because your mama told you to but because it will make for a more productive life. (Alex)

In terms of the future of educational farms, Alex shared that he hoped to see educational farms build up just like other resources in schools:

In a perfect world, you will be giving this to the school system. In a perfect world, they will be using this like they use any other classroom or like they use a gymnasium. Every kid in Petersburg would have come to this farm at some point in their school history, hopefully several times (Alex).

The farm director shared his reason for starting this farm and hopes for the farm to be a place for youth to learn and positive community members, with the goal that one day this space can be implemented into the schools.

## **Theme 5: Obstacles or Challenges When Engaging with the Farm**

**Theme Overview:** Participants shared challenges they face having youth engage at the farm. The one of the challenges that participants, especially teachers, faced were transportation and full integration of the farm experience to the classroom. Participants also shared challenges that they face within the school when it comes to traditional methods and youth well-being. They also shared about challenges they see youth facing such critical thinking when it comes to core subjects like Math and English and lack of curiosity.

### **Sub Theme 5.1: Systemic Challenges with School**

Participants, particularly the teachers, shared multiple barriers that they face with the school from engaging with the youth farm. Both Chris and Alex shared that sentiment when it came to barriers may interfere with youth engagement. Alex stated that when he was trying to create the farm space, he “encountered more challenges and barriers when I was in the school system trying to do this” On the other hand, Chris shared that when it came to youth and exploration, he thinks “when schools’ really creates barriers, it’s like shutting kids down.”

One barrier that participants talk about is the way the school system either deprecates knowledge that the youth have and limits students to only one way of teaching. Chris shares one struggle when it comes to teaching and that the: “school system has a lot of systematic issues that I see from a lot of students. The way it treats them or devalues some of things that they come in knowing or the ways they express what they know.” This could impact youth confidence with their knowledge but could also make them lose that spark in creativity and sharing what they know with others. Amy shared the same sentiment as Chris when it comes to this barrier that limits youth creativity and knowledge sharing. When asked how the farm program intersects with learning beyond the traditional setting, Amy shares that the youth farm offers ways to explore and do things differently compared to the traditional public education, which can be limited:

I think that when you get out into a different environment, or specifically on a farm, there's so many ways of doing things. I think that that's a huge lie that we're telling students that there's only one way to do math, there's only one way to be a good writer, and there's just... that's just not true. Um, and so... the intersection there is that, like the farm experience allows students to see and think “oh, wait, I can do things differently, or I can do things... this way or that way.” Our current... traditional public education

system is just really not set up to support them in that way. So, I think we spend a lot of time telling them that they're not good enough, or they didn't get it right, or this is wrong, and like...that just kills creativity, and it kills curiosity about actually... being able to create something or contribute something. So, the intersection there is that there's a gap. We have that gap in our school, and I like being able to go somewhere where they can actually experience that and see that there's more than one way to do things and one way is not necessarily wrong. You're not hurting yourself or anybody else, then... It's okay. (Amy)

From the observations, after the farm tour, the farm director gave youth the opportunity to explore the youth farm, whether that be helping the farm staff remove weed, making herb bouquets out of recycled bottles, or playing with the animals. This provided youth with the ability to choose and explore what interests them the most. When it comes to youth having the opportunity to share knowledge, one youth expressed that she has knowledge on liquid compost, and the farm director encouraged her to share what she knows with the other youth that were in attendance.

Another barrier that the teachers shared was transportation and getting buses to have young people come to the youth farm. One teacher expressed it is one of her biggest challenges and shared that its “not anybody's fault or challenge, except. just the risks associated with you know, loading kids onto a bus and taking them off school grounds”. She also mentions that some youths don't have the money for the transportation to go on the trip because “there isn't money that just exist in public education for random, fun activities in the school day” Mr. Alexand parents provide assistance for youth to go, but there are other challenges she face such as “logistics of getting a bus scheduled, and transportation is really difficult, and we're low on bus traffic. I mean, there's, like, there's all these other pressures that, um, are just way beyond my two field trips a year to Mr. Alex farm.”

Chris also shares the same sentiment when discussing barriers, such as transportation may make their trip at the farm short, but youth still engage with the farm, “I think when we're there for longer, I think there have been a couple of times where we were just rushed. The bus was late. We had to go somewhere else and that's fine. They still get to see a bunch of cool stuff.”

The participants shared challenges in the school system that limit students when it comes to multiple ways to gain knowledge and their creativity. They shared that the farms have the ability to help with those challenges, but they face barriers such as transportation to engage with the space.

### **Sub Theme 5.2: Stakeholder Perspectives on Barriers Facing Youth**

Participants shared their perspective and experience on seeing how youth are facing barriers when it comes to learning and development at school when it comes to core subjects. Participants shared that the barriers also stem from the structure of traditional public education but also considering technology. Another barrier that engaged was the barrier with youth in terms of how schools tackle youth wellbeing.

Participants shared similar sentiments when it to the challenges that they see pertaining to youth health and wellness. Tying back to theme 1 when it comes to wellbeing, some youth faces stress from either home or school. If they are stressed, it could affect their academic performance or just not in the mood to engage with learning. Amy expressed that she sees this as a challenge when youth are not feeling good when asked about how the farm addresses systematic challenges of youth well-being:

The systemic challenge, I think starts with individual health and wellness. Which again, that curiosity of your food and your environmental choices

is huge because if you don't feel good, then you can't... be good, do good. So, I think I think we have to address that initially. We have to address supporting kids, feeling good, healthy, and feeling confident. (Amy)

Alex expresses what Amy mentioned when it comes to youth not having mental health:

Not seeing the vision. Not having mental health or the words I use, mindfulness, not having things like mindfulness and emotional intelligence as a priority. You know, like being a little bit more focused on let's keep him out of jail. Let's make sure that It's not even getting good grades. Let's make sure they show up to school like some other organization, some other parts of the system or more focused on those things. (Alex)

Participants share the need for support to youth and their wellbeing, which shouldn't be only practiced at the farm, but also in other environments such as schools and other organizations to work together to help with youth wellness. Rick shared this sentiment when discussing the school lunch program:

A lot of times the school lunch program is kind of another challenge that I think is a battle that the people who want to get healthy food into schools are still fighting, but the opportunity to see and grow your own lettuce and to taste it right out of the garden. The herbs. you can go over there and try the mint, you could see you could see what it tastes and feels like and see how it grows. (Rick)

Another challenge a participant sees as a barrier when it comes to youth development is the emergence of technology. Technology is currently shaping how we see education in terms of AI and students interacting with one another through technology. Both teachers shared that technology is also becoming a barrier facing youth today. Amy expressed that youth being exposed to technology and social media caused a disconnect with one another:

I think one of the greatest... issues facing young people today, facing youth, facing students, is disconnection. I think that that is a product of the pandemic. It's a residual, very painful part of that, but I also think just the uninhibited access to technology and social media is... is also... kind of supporting disconnection because it offers us a feeling of connection, we

think we're being connected, but if you are not actually meeting up with people in real life, like I did with Mr. Alex, where I saw about him on social media, but then I was like, okay Well, it's one thing for me to sit here at my house and read about this stuff, but am I actually going to go there? (Amy)

Participants identified barriers to youth development including the strict traditional school structures, poor mental health support, and technology-related disconnection. They emphasized that stressed youth cannot learn effectively, making well-ness and emotional support important for academic success. Participants agreed that supporting youth wellbeing requires collaboration between farms, schools, and community organizations rather than focusing solely on attendance and avoiding trouble.

### **Theme 6: Community Impact**

**Theme Overview:** This theme emerged from the analysis regarding the impact that the farm has on the community. Being that the farm is located in a food desert, the farm is also providing a way to bring local fresh produce to the community and learning how to survive in a food desert. Participants shared how the community is now getting involved with the programs and events that are held at the farm. Participants also shared how the community wants to support youth as well, which helps to give youth a sense of culture and connection when it comes to their own community. When youth feel that they have a support system through their community, it will have a positive influence on them.

#### **Sub Theme 6.1: Farm and Community Impact**

Participants shared how the community has started to become more engaged with the farm space. Cathy shared that the farm had prior challenges when it came to the

Petersburg local government, and they were not providing enough support. However, Cathy shared that once more the community started to engage with the farm, relationships started to get better:

Well, we're getting better with the city of Petersburg. I think they're coming around. I think they're understanding that the importance of a farm in the city, in a food desert, to teach, to help grow to build community, to educate, to do more than just facilitate in a sense. (Cathy)

In the same notion, Alex also shared how the community showed interest in wanting to engage more at the farm:

I learned that the community wants to do things like this. They may not want to run their own farm, but they want to get outside and work with other people. The community wants community, which is crazy because they're already a part of the community, but we don't always we don't always move in that way. Yeah, I'm going to work. Yeah, I'm running to you at the grocery store, but when are we carving out time to be with each other and people are seeking that whenever we have an event here, it's a great turnout because people are looking for an opportunity to connect with the land and with each other. (Alex)

This growth in turn leads to organizations coming and supporting the farm initiative.

Alex stated that with having the community around as well as the cooperation of the local organizations, Alex thought that the farm was shaping to be a “bridge or conduit” in bringing everyone together.

In following with having the community and everyone together, Amy mentions that having a space like the farm can foster community knowledge. She expressed that the farm can be used for everyone to come together and share their knowledge:

Community knowledge is so important for just the transfer of both skills and also wisdom from both formal knowledge to informal knowledge. So, I think that creating a space, he's got a kitchen there, he's got a fire pit those kinds of things, again, it doesn't really matter where you come from or what you've been exposed to or experienced, humans come together around fire. Humans come together around food. He... he has created...

just the format for that, so that people can gather and share there. I think that's really powerful. (Amy)

From document analysis, the farm published a blog stating that the area has been impacted by cuts to the Local Food Purchase Assistance (LFPA), which has affected farmers, families, and food programs in the community and the farm shared that are there to help and support them during this time (Rooted in Resilience, 2025). This sub-theme showcases that not only does the community support this farm initiative, but the farm, in turn, offers its support to help each other.

### **Sub Theme 6.2: Community Impact on Youth**

Participants shared how just by getting the community involved also encourages youth to engage as well and even make changes to the community themselves. For example, Alex shared how the youth farm made youth more confident and involved with doing more with their community:

The youth come here and say, hey, we need more of this. Cool. I get to go back and tell city council or whoever I get to talk to We had youth come through and they said they want more of these. They want smaller versions of these in their neighborhoods. They want free libraries in their neighborhoods. They want gardens in their neighborhoods because they can't all ride their bikes here to do gardening. They want to be able to leave their house on a Saturday morning, go work in the garden and go back home. You know what I mean? So it makes it so that as a community, we're thinking outside the box. We're able to grow outside that box as a community.

In that same sentiment, Chris also saw a change with his students who also want to make changes and see what their community has to offer. He expressed that his students usually want to leave out the area after they graduate, but having them engage in the youth farm, it opens to his students how they can envision and transform their community:

So many of my students say they want to leave. Um, like that is like the norm, And I see this. It doesn't necessarily, like, I'm not going to say it's like some magic moving moment where they're like, and now I stayed and transformed my community or something like that. But they do, I can see that they're like, this is different from what people say about my home, you know, like this is people providing for people in a cool way and I've got some kids who have... You know, who just have really taken that to heart and want to help those around them and help themselves in really cool ways. (Chris)

The community also wants to engage more with the farm, and that also includes them wanting to help youth. Youth having to face challenges such as crime and food insecurity in Petersburg, Alex shared how the community sees how it is affecting them and wants to support:

They want to support the youth, and that's important for the youth to know because a lot of them feel like they've been given up on. That's just what it is. You know what I mean? So, and it's not that they've been giving up, I do not believe the police department, city council, school system has given up on our youth. I just feel like we are, and I'm included in it. We're giving up on the old ways of doing it because times have change, and if you don't change with the times, you're just going to be out of here. (Alex)

The community recognizes the youth and their struggles and is willing to step in and provide the support that the youth need. In turn, this shows the youth that the community has their back and wants to help them succeed. The farm helps offer a way for the community to come together with youth to build on that relationship and demonstrate that they care.

### **3.What competencies and learning outcomes are emphasized in an educational farm program for youth?**

3a: How do educational farms use innovative teaching methods to engage and enhance learning experiences?

## **Theme 7: Building Learning Spaces between Farm and School**

**Theme Overview:** Literature demonstrates that youth education farms have the potential to provide students with hands-on, experience-based learning that contributes to their academic development in school (Fifolt, Morgan, et. al, 2018). Participants reflected on the connection between farm and school experiences, describing how farm activities can be applied to classroom learning. Learning outcomes and competencies for youth can be achieved through farm engagement, as various aspects of farming- such as math and science- directly connect to school curricula.

### **Sub Theme 7.1 Farm to School Connection**

Participants shared how youth experiences and activities at the farm can be tied back to classroom learning. At the youth farm, students work outside rather than at classroom desks, engaging in hands-on activities and lessons in an outdoor environment. One teacher expressed how being at a farm provides opportunities for youth to explore and expand beyond traditional classroom thinking:

I can see how every single class could plug into the farm, but... it's like once you get outside of the traditional classroom setting, there's some freedom for kids to explore. So, I think that as far as learning, it's very hands-on. It's very exploratory, and it's very rooted in like discovering knowledge and that doesn't necessarily mean scientific discovery of a new thing, but just like, oh, that's how that plays into that. That's how these two things are connected. (Chris)

Through hands-on experience, students can reflect on their farm experiences and apply what they learn to school subjects. The farm director shared how youth can use their farm experiences and apply them to school learning:

Maybe later on in school they learn something, and they can apply that back to the farm “oh shoot bro I remember bro saying that on the farm, I remember him saying that, you know, food scraps break down into soil.

Oh, this makes sense now with earth science class, how rocks or how dirt was formed, like that makes sense (Alex)

Another teacher shared similar sentiments about using the farm as a tool for bridging farms and school learning discussing how subjects beyond science and math can be taught through hands-on experience.

I think that there's a lot of opportunities for content areas to be able to embrace, um, hands-on learning in all different areas of a farm... I mean, a farm also... contains every subject that you could learn in school, too, um, from marketing to biology and chemistry to law, to communication, uh, media, art, I mean, like, there's... everything is happening on a farm, and so it's like... Yeah, I think they're really important. (Amy)

This is supported through document Analysis revealed that one of their programs, “Mini Hands 4 Light Work”, brings youth from a nearby elementary school and the YMCA after-school program to the farm to develop new ideas and ways to connect to their community while learning new skills and knowledge. Among these new skills. Youth learned about soil science through preparing beds for the growing season (Planting Seeds, Growing Leaders, 2025). This provides hands-on experience that reinforces classroom learning about soil health and plant growth, creating a connection between knowledge and practical application.

### **Sub Theme 7.2 Learning Outcomes**

Participants, specifically teachers, discussed learning outcomes they were able to address when sharing farm experiences with their students. Learning outcomes, especially in STEM subjects, are common when engaging in agriculture related education (Scherer, McKim, Wang et, al 2019. The farm director shared how the farm is experiential and what they learn at the farm can be applied to STEM subjects such as math and science:

That experiential education, you know what I'm saying? That's a big deal in the education period. In some classes is a lot harder, like math is kind of hard to give them that. You know what I mean? But...this experience on the farm kind of connects those things. So, when you're building out a raised garden bed, you have to take measurements. Well, there goes the math. We have to pay attention to the life in the soil. There goes science. We encourage the youth here to practice mindfulness before they do anything on the farm so there goes the health part. So, I see it as a way of giving them an opportunity to experience the education that they're receiving in school and seeing how it applies to real life. (Alex)

However, both teachers mentioned learning outcomes and competencies that extend beyond STEM subjects. One teacher, who teaches English, uses the farm to teach students about redlining. The teacher detailed how students reading *A Raisin in the Sun* connect to farm-based learning:

So... from like an English perspective, we talk about research. We talk about critical thinking and text analysis, honestly, because it's connecting to texts, like *A Raisin in the Sun* and the historical reality of redlining and then to the current work of food deserts and all access to food for my co-teacher like partner teacher. She's a math teacher, and often with her geometry students, she talks about math and mapping as well as space, like on the farm. Is it square-foot gardening? Is it like area what's all these like shapes and stuff? So, there are those competencies there. (Chris)

This is supported by observation data during a field trip when the farm director discussed interest-based bargain. The teacher reflected with the students about vocabulary they were learning in class such as “disinvest” and “redlining” and providing them an example like Walmart- explaining that money spent there doesn't return to to the community, while buying local does reinvest in the community.

Another set of competencies that a teacher highlighted related to workplace readiness skills. This teacher instructs a CTE (Career and Technical Education) with competencies related to family and consumer science. The teacher shared that having the

youth engaged at the farm enabled her to accomplish 38 of the roughly 80 competencies she has for two courses.

Thirty-eight competencies for both of the courses that I teach are related to workplace readiness skills, is what they're called. It's all of those soft skills... I mean, I think at one point or another, throughout the day, we scratched the surface on almost every single one of those topics. Because of the course area that I'm in we are actually related to family and consumer sciences. Which does have an importance and a basis in family development and so understanding your personal role as an employee and your role as, like, a family member, or... what your personal and professional life balance looks like even something as specific as that is, like, one of the things that I'm supposed to teach, and I'm like, how do I teach that? That's so complicated to understand but, like Mr. Alex talks about that, was, you know, how do you... How do you involve. I mean, his kids are there with him, and his wife is there with him, and, like, being able to... build something together and just being able to see that as a demonstration of what balancing family and work can look like. Um... It was pretty cool. I think that... yeah, I think competencies, it was, like, basically the first 38. Um, I think we have 80, so it's almost half of them.”  
(Amy)

The results show that teachers can achieve their lesson goals and competencies at the farm. The farm provides a way to intersect with multiple subjects such as Science, English, and Family Consumer Sciences.

## **Chapter 5: Discussion**

The purpose of this study was to explore how educational farms serve as tools for addressing youth well-being among residents of food desert communities through stakeholder perspectives. Data collection included in-depth interviews with stakeholders who engage with or partner with the farm, observational field notes from farm programming activities, and document analysis of media coverage, including newspapers and articles featuring the farm. Through comprehensive thematic analysis with the framework of positive youth development, findings revealed that the educational farm provided multiple benefits for youth development, including improvements in physical and mental health, opportunities for personal growth and potential discovery, intervention for youth at risk of engaging in problematic behaviors, and meaningful connections between hands-on agricultural activities and academic learning. The study also illuminated stakeholder motivations for engagement with the farm and demonstrated substantial community support for the initiative. Overall, findings indicated that the educational farm generates positive impacts for both individual youth participants and the broader Petersburg community, suggesting its value as a community-based intervention in food desert environments.

### **Research Questions:**

**1. What is the influence of participation in educational farm programs on the overall well-being of youth in food deserts?**

This study demonstrated that educational farm programs offer opportunities and benefits that contribute to youth growth and development in several ways. The findings

indicate that farm participation supports youth health through improvements in both mental and physical well-being, enhanced nutrition education, and the development of personal skills including confidence and empathy.

For at-risk youth populations, the farm functions as an alternative intervention pathway while simultaneously providing workforce development opportunities, including exposure to agriculture as a viable income source and the acquisition of customer service skills. From an educational perspective, the farm serves as an experiential learning environment that facilitates the practical application of classroom knowledge through hands-on agricultural activities.

Furthermore, the program promotes community engagement by connecting youth with supportive community networks that foster their continued growth and development. These multidimensional benefits suggest that educational farm programs can serve as comprehensive interventions for addressing the complex needs of youth in food desert communities.

### **1a: How do educational farm programs influence the physical, mental, and nutritional habits of participating in youth?**

From observations, documents, and interviews, it was perceived by stakeholders that the farm has a positive impact on the physical, mental, and nutritional habits of youth. When it came to mental health, participants saw it as a space outside of home and school for youth to relieve stress and experience feelings of "joy." Having farm experience also gave youth something to reflect upon. For example, Amy shared that the remembrance of the farm space can be used as a "little interruption" when youth may be frustrated. Youth

also learned breathing exercises during farm activities as a technique they can use to relieve stress. These results add to other literature that found engaging in outdoor environments can influence mental health (Audate, Fernandez, et al., 2019; Fifolt & Morgan, 2018). There was also an emergence of emotional health when students went to the farm and engaged with the animals or nurtured plants. Schreuder, Rijnders, et al. (2014) found similar connections when the authors discovered that youth found meaning in working with animals. These experiences demonstrate the development of two key Positive Youth Development components: Character, as youth learn responsibility and discipline through caring for living beings, and caring, as they develop empathy and nurturing behaviors toward animals and plants.

When it comes to physical health, participants shared that the farm served as a way to get youth outside instead of being in school, where they are "forced to sit a lot of times" (Chris), and they get to engage in activities such as stretching exercises. Lachowycz, Jones, et al. (2012) support this data regarding how green spaces increase physical activity. Participants also shared that youth learn about nutrition education and become more food conscious. By providing youth with the chance to try products they had never had before, it allowed them to explore healthier food options. An example of this was when Cathy shared her story of a youth who wanted her and her mother to eat healthy food rather than unhealthy foods such as TV dinners. This result is shared through the literature where involvement with these green spaces can result in youth trying new foods and eating healthier (Duncan, Collins, et al., 2016, Lautenschlager, Smith 2007).

**1b: How do educational farm programs impact the behavior outcomes of participating youth?**

The educational farm demonstrated a significant influence on at-risk youth and those who engaged in juvenile delinquency. Participants shared that this space serves as an alternative not only for emotional regulation, but also as a way to envision new opportunities for income generation through agricultural practices, supported by the community and farm staff. As Cathy emphasized, "violence needs structure," and rather than youth engaging in activities that may lead to trouble, they can redirect their energy toward productive farm activities such as cutting grass.

Participants discussed the "Gang Culture 2 AgriCulture" program's work with teens from juvenile detention, describing how the program had "changed their whole kind of attitude towards life and their purpose." Providing programs like those offered at the farm helps youth recognize alternative pathways beyond activities that could place them in harm's way. This finding aligns with McCabe's (2014) research on how urban agriculture and community gardens can serve as effective interventions for youth violence prevention. This transformation reflects the positive youth development framework for youth through skill development and fostering positive connections that redirect youth toward positive behaviors and community engagement.

**1c: In what ways do educational farms empower youth to become change agents within their communities**

The results demonstrate that the farm employs multiple opportunities for youth empowerment. Participants reported that this environment facilitates confidence building

(Rick and Alex) and enables youth to develop autonomous decision-making skills. This was evidenced when Cathy explained that within this space, youth operate with minimal supervision and have the opportunity to independently tackle various activities. The farm also provided youth with opportunities to recognize their capacity for community-level change. For example, Chris noted that students in his county typically plan to leave the area after graduation. However, once they experience this agricultural environment, they are able to envision ways they can contribute to improving their own communities. This finding aligns with existing literature, found that youth engaged in farm internships gained a sense of independence and confidence through agricultural practices, ultimately developing aspirations to transform their local environments (Hung 2004, Broaddus, Przygocki et. al., 2015). The findings also align with the theoretical framework for building individual confidence and fostering contribution as youth become invested in improving their communities rather than leaving them.

## **2. What are the primary motivations for stakeholders to engage in creating and supporting an educational farm in a food desert?**

Participants expressed diverse motivations for engaging with youth at the educational farm. Some participants, particularly the teachers, brought prior farming experience to their educational roles. Now that they are in the position of educators, as Chris put it, "two parts of the world and my world together," they want their students to also have the chance to engage in these farm to explore and tie what they learn into the classroom. Other participants shared that they want youth to know where their food comes from, as many never had that experience. The farm provides those opportunities, as shown from observations where the farm director had youth interact with the herbs at

the farm. This is supported by literature from other studies when it comes to community motivation to engage youth within these community-based educational opportunities (Bass, 2019; Rodgers, 2011).

**2a: How do different stakeholders perceive the success and impact of the educational farm on the community and themselves?**

While there is limited data from this study to have a strong response to the question, participants reported observing significant transformations in youth during their engagement with the farm environment. Stakeholders noted behavioral and attitudinal changes, particularly in the youth's perspectives on community improvement possibilities. For instance, participants observed youth taking initiative by requesting the farm director to establish additional gardens in their neighborhoods or advocating for their interests at city council meetings. Amy mentioned that one student who previously demonstrated little kindness toward classmates began to show "a lot of warmth, or uh, kindness towards their classmates" as a result of engaging with the farm director's family and the animals. Through these experiences, youth developed a sense of connection, which is a core component in the positive youth development framework. Most farm participants shared similar experiences of witnessing personality changes in youth through farm engagement. This finding aligns with Fifolt and Morgan's (2018) research, which demonstrated that relationships are built through this process. Relationships developed through connections with the farm director himself, as youth became interested in returning to volunteer or intern at the farm.

**2b: How does collaboration between farmers, educators, and community organizations enhance the effectiveness of educational farms?**

The study results revealed that the community demonstrates a strong interest in engaging with and supporting the educational farm. The analysis indicates that stakeholders view this space not only as a youth development resource but also as a mechanism for addressing food insecurity, given the farm's location within a food desert. Community members recognize their environmental context, and as Cathy noted, the city is beginning to understand that the farm is needed to "teach, help grow to build community, to educate, to do more than just facilitate." The farm director described the facility as serving as a "bridge or conduit" for bringing the community together. Community members also express desire to support youth utilizing this space, as they witness firsthand the challenges these individuals face. Community stakeholders are aware of youth violence and food insecurity issues and want youth to understand that community support and assistance are available.

#### **4. What competencies and learning outcomes are emphasized in an educational farm program for youth?**

The results showed that this educational farm provides an authentic learning environment that connects youth to hands-on learning experiences related to what is learned at school. Agriculture usually has strong ties to math and science subjects, as evidenced in the data where students are able to learn about soil science through the breakdown of food scraps (Alex). Amy also mentioned that the farm touches other subjects such as "biology and chemistry to law, to communication, uh media, art." One subject that emerged that has not been explored was English, when Chris connected the farm experience to the book *A Raisin in the Sun* which he is teaching in his class. Amy also mentions that she is able to tackle 38 out of the 80 competencies

for family consumer science across her two classes. Literature that supports this finding includes Smeds, Jeronen et al. (2015), who concluded in their study that farm education provides spaces for authentic learning environments as part of youth education.

### **3a: How do educational farms use innovative teaching methods to engage and enhance learning experiences?**

The results show that the farm provides experiential education for youth to engage in hands-on learning and explore different areas of the farm, ranging from interacting with animals to working with plants. The farm director explains this in the data when he noted that while some subjects like math can be harder to learn in traditional classroom settings, the farm helps youth make connections through hands-on experience. For example, students might build a raised bed to learn geometry concepts (Chris). This space allows what is being taught in the classroom to be applied in an outdoor environment like the youth farm.

The farm also provided opportunities for youth to gain life skills. Participants shared that through this space, youth were developing a sense of "discipline" when it came to understanding what goes into raising animals and growing plants. Data also shows that the space provides opportunities to develop work-life skills such as marketing and customer service, which can be beneficial for their future careers. Similar findings have also been documented in McArthur, Hill, et al.'s (2010) study, where youth were also able to gain science, work, and life skills.

## **Limitations**

Limited stakeholders' diversity constrained this study; all participants are already actively engaged with the educational farm. This selection bias may have resulted in perspectives that favor the program, potentially overlooking critical viewpoints from less engaged community members or those with a cautious perspective of the educational farm. The research design originally intended to include a broader range of stakeholders, including district superintendents and representatives from neighboring after-school programs; however, these key informants were unavailable during the research timeframe, further limiting the comprehensiveness of data collected and reducing the diversity of perspectives captured. The absence of youth voices also represents a significant limitation, as the study relied entirely on adult perspectives about youth experiences and outcomes. Future research should prioritize direct youth participation to validate adult observations and capture experiences that may not be visible to the adults.

Another limitation was only using one site for the study, which restricts the generalizability of findings, as results may reflect location-specific factors rather than broadly applicable patterns. The educational farm's unique characteristics, including its urban setting, community demographics, and organizational structure, may not be translated to other contexts. Factors such as the farm's specific partnership with local schools, availability of resources, and community socio-economic compositions tied to this specific location may influence stakeholder experiences and program outcomes. The results of the study offer important understanding that can inform future research and practice, though additional studies across varied settings would strengthen the broader applicability of the insight.

## **Recommendations for Practice**

Educational institutions should prioritize strengthening partnerships with educational farm initiatives to enhance student learning experiences. Participants in this study highlighted how educational farms provide valuable outdoor learning opportunities that can alleviate academic stress while offering hands-on experiences that complement classroom lessons. Teachers should collaborate with farm educators to develop integrated lesson plans that align agricultural activities with curriculum standards, creating meaningful connections between learning and academic content (Sikorska-Wolak, Zawadka, 2016)

Communities should actively support and engage with educational farm initiatives as valuable assets for collective well-being. Research findings and existing literature (Rahm, 2002, Rodgers 2012), demonstrate strong community support for educational farms, recognizing their dual benefits of youth development and community building through organized events and gatherings. Strategic partnerships with local stakeholders- including farmers, markets, restaurants, and community organizations- can strengthen program sustainability and expand educational opportunity. Sustained community investment and participation are essential for ensuring the long-term viability and impact of these educational spaces.

Governmental entities should provide support for educational farm programming through strategic funding and grants, infrastructure development, and policy initiatives. This includes offering transportation assistance for schools accessing farm-based education and providing land use incentives that recognize the multifaceted benefits of these spaces. Results indicate that educational farms serve as crime prevention tools,

therapeutic environments (Schreuder, Rijnders, et. al. ,2014), and community gathering spaces, justifying public investment in their development and maintenance. Additionally, agencies should establish policies that facilitate farm-to-school programs, enabling educational farms to contribute fresh produce to school nutrition programs.

### **Future Research**

Future research should incorporate diverse stakeholders' voices to capture a comprehensive understanding of educational farm initiatives. This would include hearing perspectives from engaging community members, parents, youth participants, local organizational partners, university professionals, and government representatives. Hearing perspectives from other stakeholders would provide insight into how different groups perceive and value educational farms, revealing potential barriers, benefits, and opportunities that might otherwise be hidden.

Further research investigating the sustained effects of educational farm programs on youth development represents a critical gap in the literature (Fifolt, Morgan 2018, Rodgers, 2012). Future studies should employ quantitative longitudinal designs, including pre- and post-program assessments that track youth engagement over extended periods. These future studies could utilize instruments measuring knowledge acquisition, environmental attitudes, social-emotional development, and academic outcomes. Implementing systematic data collection through surveys, skill assessments, and behavioral observations would establish evidence-based understanding of program effectiveness.

Given that this study was in an urban environment, future research should examine educational farm initiatives within rural settings. Rural contexts present unique opportunities and challenges, including different community dynamics, resource availability, and youth engagement patterns. Comparative studies between urban and rural educational farms could illuminate how geographic and socioeconomic factors influence program implementation stakeholders' participation, and youth outcomes.

### **Conclusion**

Food deserts represent complex manifestations of systemic inequality that disproportionately impact minority and low-income communities. Educational farms emerge as powerful interventions that address not just nutritional challenges but broaden social and developmental needs of youth and their communities.

These spaces serve as transformative environments that simultaneously combat food insecurity, reduce crime, provide educational opportunities, and foster community engagement. By creating spaces where youth can grow fresh produce, learn critical life skills, and develop meaningful relationships, these agricultural interventions offer comprehensive solutions to the multifaceted challenges of food deserts.

Addressing food deserts requires comprehensive, community-centered approaches that recognize food access as a fundamental human right. Educational farms represent more than agricultural intervention, they are strategies of community resilience, cultural preservation, and youth empowerment. The future of nutritional equity demands interdisciplinary collaboration and a commitment to creating sustainable, community-

driven solutions. By investing in educational farms that nurture youth development, we can address nutritional challenges, educational disparities, and social inequities.

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## Appendix

### Appendix I: Recruitment Email

My name is Kayla Surley, and I am a second-year master's student in the Agricultural, Leadership, and Community Education department (ALCE) at Virginia Tech. I am conducting a research case study on the Petersburg Oasis Community Farm. The purpose of this study is to investigate how educational farms in food desert areas can promote better lifestyles and impart valuable skills to underrepresented youth regarding health, environment, and community. Focusing specifically on Petersburg, Virginia, the study will explore stakeholder perspectives and primary motivations for involvement.

I am inviting farm staff, teachers, administrators, and after-school staff (18 and over) who work, partner, or collaborate with the farm.

Participants will be asked questions to understand the impact, implementation, and transformative potential of educational farm programs in food desert communities.

Interviews will be conducted in person or via Zoom, based on participant preference. Sessions will be audio-recorded in person or audio and video recorded on Zoom.

Participation is completely voluntary. All personal information will remain confidential. You may withdraw from the study at any point without penalty.

This study has been reviewed by the Virginia Tech Human Research Protection program.

If you would like to participate or have any questions, please contact:

- Kayla Surley
- Skayla@vt.edu
- Dr. Donna Westfall-Rudd
- mooredm@vt.edu

## **Appendix II: Observation Protocol**

### **Observation Protocol**

The purpose of observations is to learn how youth who reside in food deserts are engaging in an educational youth farm and will examine daily operations, youth activities, and program implementation. These observations will provide a critical lens through which to understand how youth engage with the farm or garden environment. The observational component will allow the researcher to capture informal interactions, learning processes, and the subtle ways participants interact with and derive value from the educational farm setting.

During the program/ activity, the following questions will be used to guide the observations and focused areas:

#### **Program Implementation**

1. How do farm directors and staff structure farm activities?
2. What strategies are established for youth engagement?

#### **Youth engagement observations**

1. How are youth interacting with the farm environment?
2. How do staff facilitate youth involvement in farm activities?/

#### **Learning Process**

1. What teaching strategies do teachers/ staff use in the farm setting?
2. How do staff connect farm activities to educational objectives
3. What learning outcomes are the staff attempting to achieve?

#### **Interactions**

1. How do the farm director, teachers, and staff interact with youth?
2. What communication patterns emerge during farm activities
3. How do staff support learning and skill development?

#### **Skill Transfer and Development**

1. How are agricultural skills being demonstrated and taught?
2. What problem-solving approaches are staff and youth using?
3. How do staff contribute to youth learning?

#### **Program Adaptation and Responsiveness**

1. How do staff adjust activities based on youth needs?
2. How do staff connect farm activities to community needs?

## **Appendix III: Interview Protocol**

### **Interview Protocol**

Note: This interview protocol will have small modifications for the farm director, farm staff, teachers, and administrators as they will have their own specific questions.

Hi, my name is Kayla Surley, and I will be running an interview with you for today. To start things off, I would like to remind you that at any time during the interview should you feel uncomfortable, you are free to quit without any repercussions. You also have the right to refuse any questions that you do not wish to answer. Furthermore, we will not collect nor disclose any sensitive or identifiable information about you.

The purpose of this study is to investigate how educational gardens in food desert areas can promote better lifestyles and impart valuable skills to underrepresented youth regarding health, environment, and community. The specific area of focus is Petersburg, Virginia. The study will explore the perspectives of stakeholders to understand their primary motivations for involvement.

Will you be okay with being recorded? Do you have any other questions for me before we start?

### **General Questions:**

1. Could you share your personal journey that led you to engage with Petersburg Oasis Youth Community Farm which is located in a food desert?
2. Could you describe the demographic of youth you are involved with?
3. How do you perceive farm programs transforming youth learning experiences?
4. In what ways do these programs validate youth's cultural identity and community knowledge?
5. Could you describe the types of skills youth develop by participating in the farm program?
6. How does the farm reshape youths' understanding of food, health, and wellness?
7. How do you perceive the program addressing systemic challenges of youth well-being?
8. How have you observed changes in students' mental health and social interactions through the farm program?
9. Tell me about the relationship and connections you've observed emerging through this farm initiative?
10. How do the farm programs create space for youth to discover and develop their potential?
11. How do you observe students' learning and personal development through farm interactions?
12. Describe a moment when you witnessed a youth's transformation through farm participation.
13. Are there any barriers you have encountered in implementing, partnering, or participating with educational farm programs?

14. How do agricultural learning experiences potentially mitigate risks of youth criminal behavior?
15. How can educational farms become sustainable community transformation tools?
16. What meaningful experiences have shaped your understanding of farm programs?

**Farm Director:**

1. What type of youth programming and activities occurs at the farm?
2. In your experience, how do the farm program intersect with learning beyond traditional educational settings?
3. Could you elaborate on the unique learning opportunities the farm provides?
4. How do educational farm programs align with broader educational strategic goals?
5. How do you evaluate the impact of these programs on overall student outcomes?

**Farm Staff:**

1. What type of youth programming and activities occurs at the farm?
2. Could you elaborate on the unique learning opportunities the farm provides?

**Teacher:**

1. In your experience, how do the farm program intersect with learning beyond traditional educational settings?
2. How do educational farm programs align with broader educational strategic goals?
3. How do you evaluate the impact of these programs on overall student outcomes?
4. What competencies do students develop through educational farm participation?

Thank you for taking the time to meet with me today. I appreciate your insights and the opportunity to learn more about your role. Do you have any questions or final questions for me before we conclude? I'm happy to provide any additional information that might help you. You will receive a copy of the transcript and will be asked for your approval. Thank you again for your time.

### Appendix IV: Priori Table

Research Question	Proposition	Supporting Literature	Questions:
<p>What are the primary motivations for stakeholders to engage in creating and supporting an educational farm in a food desert?</p>	<p>Bass (2019) demonstrates how Black leaders' dedication to urban food equity initiatives can motivate stakeholders by showcasing the importance of overcoming systemic challenges. This commitment to fostering youth development and community engagement provides a compelling framework for understanding the motivations behind supporting food justice efforts.</p>	<p>Bass, R. T. (2019). A Narrative Inquiry of Black Leader Self-Determination for Urban Food Justice: A Critical Race Theory Perspective.</p>	<p>Interviews:            Could you share your personal journey that led you to engage with Petersburg Oasis Youth Community Farm which is located in a food deserts?             Are there any barriers you have encountered in implementing, partnering, or participating with educational farm programs?             What meaningful experiences have shaped your understanding of farm programs?             Observations:            How do staff adjust activities based on youth needs?             How do the farm director and staff structure farm activities?</p>
<p>How do different stakeholders perceive the success and impact of the educational</p>	<p>Bagdonis, Hinrichs, and Schafft (2009) explore how farm-to-school initiatives foster civic engagement,</p>	<p>Bagdonis, J. M., Hinrichs, C. C., &amp; Schafft, K. A. (2009). The emergence and framing of farm-to-school initiatives: Civic engagement, health and local agriculture. <i>Agriculture and Human Values</i>, 26, 107-119.</p>	<p>Interviews:            How do you perceive the farm program transforming youth learning experiences?             Could you describe the</p>

<p>farm on the community and themselves?</p>	<p>improve health, and support local agriculture. This study can inform perceptions of the success and impact of these initiatives by highlighting how they enhance community well-being and stakeholder involvement, including perspectives from school nurses and parents, through improved food environments and local agricultural support.</p>		<p>types of skills youth develop by participating in the farm program?</p> <p>Describe a moment when you witnessed a youth' transformation through farm participation.</p> <p>Tell me about the relationship and connections you've observed emerging through this farm initiative?</p> <p>Observation: What strategies are established for youth engagement?</p>
<p>How does collaboration between farmers, educators, and community organizations enhance the effectiveness of educational farms?</p>	<p>Davies et al. (2004) discuss the challenges and strategies in fostering local agri-environmental cooperation among farmers and other stakeholders. This study can inform how collaborations between farmers, educators, and community organizations enhance the effectiveness of educational farms by highlighting the importance of</p>	<p>Davies, B., Blackstock, K., Brown, K., &amp; Shannon, P. (2004). Challenges in creating local agri-environmental cooperation action amongst farmers and other stakeholders. <i>The Macaulay Institute, Aberdeen.</i></p>	<p>Interviews:</p> <p>How can educational farms become sustainable community transformation tools?</p> <p>Observations: How do the farm director, teachers, and staff interact with youth?</p> <p>How do staff support learning and skill development?</p> <p>How do staff contribute to youth learning?</p> <p>What communication patterns emerge during</p>

	collective action and overcoming coordination challenges to achieve shared environmental and educational goals		farm activities
What competencies and learning outcomes are emphasized in an educational farm program for youth?	Nzaranyimana (2020) investigates how an urban farming program at the Felege Hiywot Center promotes life skills, entrepreneurship, and healthy eating intentions among minority youth. This study emphasizes competencies such as leadership, business acumen, and nutritional awareness, highlighting the program's role in fostering these essential skills and outcomes for youth	Nzaranyimana, T. (2020). Exploration of the Role of an Urban Farming Program in Promoting Youth's Life Skills, Entrepreneurship, and Healthy Eating Intentions for Minority Youth Attending Felege Hiywot Center, Indianapolis (Doctoral dissertation, Purdue University).	<p>Interviews:</p> <p>In your experience, how do the farm program intersect with learning beyond traditional educational settings?</p> <p>How do educational farm programs align with broader educational strategic goals?</p> <p>What competencies do students develop through educational farm participation?</p> <p>How do you evaluate the impact of these programs on overall student outcomes?</p> <p>How do you evaluate the impact of these programs on overall student outcomes?</p> <p>How do educational farm programs align with broader educational strategic goals?</p> <p>In your experience, how do the farm program intersect with</p>

			<p>learning beyond traditional educational settings?</p> <p>Observations: How are agricultural skills being demonstrated and taught?</p> <p>What problem-solving approaches are staff and youth using?</p> <p>What teaching strategies do teachers/ staff use in the farm setting? How do staff connect farm activities to educational objectives</p> <p>What learning outcomes are the staff attempting to achieve?</p>
<p>How do educational farm programs influence the physical, mental, and nutritional habits of participating in youth?</p>	<p>Lautenschlager and Smith (2007) investigate the beliefs, knowledge, and values of inner-city youth regarding gardening, nutrition, and cooking. The study showcased how by giving youth the experience of</p>	<p>Lautenschlager, L., &amp; Smith, C. (2007). Beliefs, knowledge, and values held by inner-city youth about gardening, nutrition, and cooking. <i>Agriculture and Human Values</i>, 24, 245-258</p>	<p>How does the farm reshape youths' understanding of food, health, and wellness?</p> <p>How do you perceive the program addressing systemic challenges of youth well-being?</p> <p>How have you observed changes in students' mental health and social</p>

	gardening and cooking can improve their dietary habits.		interactions through the farm program?  Observations: How are youth interacting with the farm environment?  How do staff facilitate youth involvement in farm activities?
How do educational farm programs impact the behavior outcomes of participating youth?	McCabe (2014) discusses how community gardens can reduce youth crime and stabilize neighborhoods by promoting civic engagement and neighborhood pride. The studies highlight how community gardens programs can positively influence youth behavior and foster community engagement by improving social skills, and community engagement.	McCabe, A. (2014). Community gardens to fight urban youth crime and stabilize neighborhoods. <i>International Journal of Child Health and Human Development</i> , 7(3)	Interviews:  How do agricultural learning experiences potentially mitigate risks of youth criminal behavior?  How do you observe students' learning and personal development through farm interactions
In what ways do educational farms empower youth to become change agents within their communities	Hung (2004) explores how the East New York Farms! project engages local youth in community development and urban agriculture. This study	Hung, Y. (2004). East New York Farms: Youth Participation in Community Development and Urban Agriculture. <i>Children, Youth and Environments</i> , 14(1), 56–85. <a href="https://doi.org/10.1353/cye.2004.0027">https://doi.org/10.1353/cye.2004.0027</a>	Interviews:  In what ways do these programs validate youth's cultural identity and community knowledge?  How do the farm

	<p>demonstrates that educational farmers empower youth and other stakeholders by fostering a sense of self, enhancing perceptions of their neighborhood, and highlighting the integral role of youth as agents of change in building sustainable communities.</p>		<p>programs create space for youth to discover and develop their potential?</p> <p>Observations:</p> <p>How do staff connect farm activities to community needs?</p>
<p>How do educational farms use innovative teaching methods to engage and enhance learning experiences?</p>	<p>McArthur et al. (2010) explore how gardening programs for youth develop science, work, and life skills, emphasizing hands-on learning and mentorship. The study demonstrates that outdoor spaces like farms engage students and enhance learning experiences through innovative, hands-on teaching methods that make education more relevant and impactful.</p>	<p>McArthur, J., Hill, W., Trammel, G., &amp; Morris, C. (2010). Gardening with youth as a means of developing science, work and life skills. <i>Children, Youth and Environments</i>, 20(1), 301-317.</p>	<p>Interviews</p> <p>What type of youth programming and activities occurs at the farm?</p> <p>Could you elaborate on the unique learning opportunities the farm provides?</p>

