

THE SUSTAINED IMPACTS OF AN AGRICULTURE-BASED YOUTH
DEVELOPMENT PROGRAM ON ALUMNI'S CONNECTION TO THE
ENVIRONMENT, FOOD, COMMUNITY AND SELF

by

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ABSTRACT

The Sustained Impacts of an Agriculture-Based Youth Development Program on Alumni's Connection to the Environment, Food, Community and Self

Shaina Salin

Garden and farm-based education programs can serve as powerful tools for engaging youth in personal development, community-building and environmental stewardship. This research examined the sustained impacts of Garden-Raised Bounty's (GRuB) agriculture-based youth development program on alumni's connection to the environment, food, community and self between two and eighteen years after program participation. The study employed a mixed-methods approach through an online survey (n=45) and semi-structured interviews (n=19). Critical food pedagogy (Sumner, 2015; Sumner & Wever, 2016; Wever, 2015) and positive youth development (PYD) (Lerner, Lerner, et al., 2005; Pittman, Irby, & Ferber, 2000) served as the analytical frameworks for this study.

Results from analysis of both datasets indicate that participation in GRuB's youth program imparts positive, lasting impacts on alumni's connection to the environment, food, community and self through measures of critical food pedagogy and PYD. Statistical tests showed few significant differences across social groups, suggesting consistent and persistent positive outcomes from participation in GRuB's program. Qualitative reports provided more detailed descriptions of alumni's experiences in GRuB's youth program, which in many cases influenced subsequent lifestyle and career decisions. Both the quantitative and qualitative datasets also highlighted the summer portion of the program as a particularly influential experience, as the length of time involved in the program did not always directly correspond with the magnitude of the program's impact. This study contributes to the literature on the sustained impacts of programs that integrate environmental, experiential and farm-based education with PYD principles. The results corroborate and extend previous research suggesting positive, lasting impacts from these types of youth engagement programs.

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Preface: Reflexivity Statement

I came to the MES program with a strong background in organic farming, environmental communication and nutrition, with a particular interest in the connection between soil health and human health. In the spring quarter of my first year, I applied to be a farm intern with GRuB, an Olympia-based non-profit organization and educational farm. I saw it as an opportunity to enhance my skills and knowledge in producing high quality, nutrient-dense food, and helping to make that knowledge and nourishment democratically available to the community. I stayed on as an intern through the summer, working alongside the Youth Crew to grow, harvest and distribute over 15,000 pounds of produce to CSA members, low-income families and seniors, and the Thurston County Food Bank.

During my internship experience at GRuB, my interests expanded beyond the ecological and human health benefits of sustainably grown food to include implications for personal and community development, as well as broader systems change. As tomato flowers turned into fruits for harvest, I also witnessed remarkable growth in the Youth Crew members themselves. Many of them demonstrated enhanced confidence, openness, maturity and appreciation for the land and food over the course of the seven-week program. Pre and post-program evaluation reports provided further evidence of positive learning and development outcomes from participation in GRuB's youth program. My own observations, combined with the well-documented benefits of garden-based education programs in general, led me to wonder how GRuB's youth program impacts alumni's attitudes toward and connection to the environment, food, community and self over the long-term. In addition, I found that very little research has explored the sustained

impacts of agriculture-based youth development programs specifically. After my internship ended and I began the thesis process in fall quarter of my second year, I approached Kim Gaffi, GRuB's co-founder and Director of Youth Programs, to see if the organization would be interested in a follow-up study with their program alumni. Luckily for me, they were, and Kim granted me the opportunity to conduct this research.

I recognize that my pre-existing interest in sustainable agriculture and social justice, as well as my previous experience with GRuB, may serve as potential sources of bias in this research. As such, I have imbued this thesis with deliberate transparency in my methodology and analysis and have strived to present the results in a manner that speaks for itself. I hope that the findings here can provide useful information not only for GRuB, but also for other farm-based youth development programs seeking to foster lasting, positive changes in their program participants.

Chapter 1: Introduction

Garden and farm-based education hold a longstanding and significant history as a means of promoting environmental awareness, food security, leadership development, community engagement, and social, emotional and physical wellbeing (Hayden-Smith, 2014; Lawson, 2005). Recent decades have seen a surge in community and school-based food and agriculture education programs, which have proliferated in part in response to an increasingly industrialized, unjust and ecologically destructive global food system. The dominant industrial food system is characterized by mass-scale, mechanized and chemical-intensive crop and animal production, with extensive processing and distribution chains primarily governed by corporate interests (Heffernan, Hendrickson, & Gronski, 1999). All too often these corporate interests stand at odds with environmental sustainability and social justice, with profit centered as the ultimate priority (Alkon & Agyeman, 2011). Both producers and consumers—arguably the most pivotal food system actors—have been largely excluded from participating in decision-making processes that shape the dominant food system, with a concomitant loss of knowledge and skills to take informed action (Jaffe & Gertler, 2006). The industrialized food system consequently perpetuates systems of privilege and oppression, which maintain class, race, and gender-based disparities in food security and health (Alkon & Norgaard, 2009). Such disparities carry attendant implications for educational attainment, employment and income, among many other factors (Brooks-Gunn & Duncan, 1997).

Youth comprise a population particularly vulnerable to adverse impacts from systemic barriers such as poverty and racism, which often lead to greater instances of youth disengagement in school and in their communities (Baker, 1977; Gross & Gross,

1977, Umholtz, 2013). Just as producers and consumers have been largely disempowered by the dominant industrial food system, the conventional US school system has left many youth marginalized and unsupported—especially low-income youth (Rains & Umholtz, 2016; Umholtz, 2013). The US public school system has employed a parochial focus on standardized testing that does not accommodate a multiplicity of learning styles or cultural backgrounds, leaving many students feeling estranged from their own learning process (Amrein & Berliner, 2003; Gruenewald, 2004, 2008; Higgs, 1995 as cited in Umholtz, 2013). As farmer and author Michael Ableman (2005) states, “Schools and farms have become a lot alike. They have both become factories, with assembly-line controls and engineered inputs, cranking out either grades and test scores or ‘food,’” (p. 178, as cited in Wever, 2015, p. 12).

As a form of environmental education, garden and farm-based education programs can engage youth in personalized, hands-on and relevant learning experiences that carry broader social and environmental impacts (Schusler & Krasny, 2010; Smeds, Jeronen, & Kurppa, 2015). This experiential learning approach, coupled with theory-informed program design, can serve as an effective means to re-engage students in their own personal development, as well as academically, civically and environmentally (Umholtz, 2013; D.R. Williams & Dixon, 2013). In addition, these programs can provide youth with the critical awareness to not only be knowledgeable about the socio-ecological issues tied to the food system, but also to actively address those issues (Sumner & Wever, 2016).

Numerous studies have highlighted beneficial outcomes from youth participation in farm and garden-based education programs, including increased ecological awareness,

social connectedness and community engagement (Broaddus, Przygocki, & Winch, 2015; Fulford & Thompson, 2013; D.R. Williams & Dixon, 2013). However, few studies have examined the longevity of these outcomes beyond program involvement—particularly how these programs influence participants’ lives in adulthood (Brigham & Nahas, 2008; Sonti, Campbell, Johnson, & Daftary-Steel, 2016). This study assesses the sustained impacts of an agriculture-based youth development program on former participants two to eighteen years after program involvement. The focus of this study is Garden-Raised Bounty (GRuB), a 501(c)3 organization and urban farm based in Olympia, Washington. The primary research question that this study explores is: *What are the sustained impacts of GRuB’s agriculture-based youth development program on alumni’s attitudes toward, and connection to, the environment, food, community and self?* More specifically, this study hones in on two sub-questions: *To what extent does participation in GRuB’s youth program foster a sustained, critical awareness of the environment and food system? To what extent does participation in GRuB’s youth program lead to long-term positive youth development outcomes?* To answer these questions, a mixed-methods study design was employed. Quantitative and qualitative perspectives were collected through an online survey (n=45) and semi-structured interviews (n=19). The theoretical frameworks of critical food pedagogy and positive youth development provided the basis for data analysis, and will be discussed in depth in the literature review (Chapter Three).

The following section will provide a brief geographic and demographic profile of Thurston County and the city of Olympia, the region that GRuB primarily serves. Chapter Two will discuss the history of GRuB, including the organization’s mission, values, and the evolution and structure of its youth program. Chapter Three provides a

review of the literature on critical food pedagogy and positive youth development, as well as other relevant literatures including environmental education, food cultivation education and related research in these fields. Chapter Four details the design of this study and the methods employed in data collection and analysis. Chapter Five discusses the quantitative results from the surveys, and Chapter Six delves into qualitative analysis of the interviews. Chapter Seven brings both the quantitative and qualitative datasets into discussion, relates the results to the greater body of literature, and provides insight for future research. Chapter Eight discusses the broader implications of this research and offers concluding remarks.

Description of the Study Context: Thurston County, WA

Thurston County, home to Washington's capital city of Olympia, sits at the southern tip of the Puget Sound in Western Washington. Prior to colonization, First Nations tribes including the Nisqually, Squaxin and Chehalis resided on and stewarded the land and surrounding waters. Today, approximately 280,588 residents comprise the population (US Census Bureau, 2017). As of 2016, 82.5% of the population identified as white; 3% identified as black or African American, 1.5% identified as American Indian or Alaska Native, 5.7% identified as Asian, 0.9% identified as Native Hawaiian or other Pacific Islander, and 5.4% identified as two or more races (US Census Bureau, 2016a). With regard to ethnicity, just 8.6% identified as Hispanic or Latino (US Census Bureau, 2016a). As of 2016, the poverty rate in the county was approximately 12% (US Census Bureau, 2016b), which is comparable to the national 12.7% poverty rate according to recent estimates (Semega, Fontenot, & Kollar, 2017).

Education, health care and social assistance professions comprise the most sizable economic sector (21.3%), followed by public administration (17.5%) and retail trade (11.7%) (US Census Bureau, 2016b). Agriculture also plays a crucial role in the local culture and economy (Bramwell et al., 2017), and the region is relatively progressive in its commitment to developing a robust, localized food system (Coit et al., 2012). Thurston County encompasses both urban and rural land, and faces mounting development pressure from projected population increases (Bramwell et al., 2017; Coit et al., 2012). Nonetheless, the county also maintains a strong conservation ethic and emphasizes the value of sustainability, which is characteristic of Western Washington. In addition, Washington State upholds legislation that charges counties with minimizing urban sprawl and conserving natural, open space (Growth Management Act, 1990). Along with local government agencies and other non-government organizations, GRuB plays a prominent role in facilitating the advancement of a local, sustainable and just food system.

Olympia.

While GRuB's work extends throughout Thurston County, the majority of the organization's projects, including youth program activities, occur within the city of Olympia. As the capital of Washington, Olympia is the legislative center of both the county and the state, which fosters ample opportunity for residents to engage in social and political activism. The city is also home to The Evergreen State College, a public liberal arts school known for its forward-thinking, interdisciplinary and student-centered approach to education. Olympia's racial demographics reflect slightly less diversity than those of greater Thurston County, with 84.6% of the population identifying as white,

1.9% identifying as black or African American, 0.8% identifying as American Indian or Alaska Native, 0.3% identifying as Native Hawaiian or other Pacific Islander, and 4.4% identifying as two or more races (US Census Bureau, 2016c). However, Olympia has a slightly larger Hispanic or Latino population (7.4%) as compared to the greater Thurston County area (US Census Bureau, 2016c). Olympia also has a higher poverty rate (17.1%) than that of greater Thurston County (Thurston Regional Planning Council, 2016). However, according to the Thurston Regional Planning Council's compilation of 2012-2016 American Community Survey Estimates, Olympia has the sixth highest poverty rate out of the county's nine jurisdictions (Thurston Regional Planning Council, 2016). GRuB's work ultimately aims to end hunger in Olympia and in Thurston County at large, which their youth program participants play an integral role in. Chapter Two will provide further background on the theoretical foundations and evolution of GRuB's youth program.

Chapter 2: Background on GRuB's Youth Program

Garden-Raised Bounty (GRuB) is a non-profit organization and two-acre urban farm that aims to foster a healthy, empowered community and equitable food system through sustainable agriculture, food education and community engagement. GRuB emerged as a unified organization from two grassroots food initiatives. Drawing inspiration from Vietnam veteran Dan Barker's Home Gardening Project in Portland, Thurston County residents Richard and Maria Doss founded the Kitchen Garden Project in 1993, which served to build free vegetable gardens at the homes of low-income individuals and families. Two Evergreen State College students, Kim Gaffi and Blue Peetz, created The Sister Holly Garden Project in 1996, which provided garden-based education to youth and seniors in the community. In 2001, these two projects coalesced to form GRuB, which has since expanded and evolved to include a number of initiatives aimed at advancing food access and justice in Thurston County. GRuB's work integrates the fields of agriculture, health, sustainability and education with youth and community leadership development. GRuB's mission is:

“To inspire positive personal and community change by bringing people together around food and agriculture...by partnering with youth and people with low incomes to create empowering individual and community food solutions, and by offering tools and trainings to build a just and sustainable food system,” (Rains & Umholtz, 2016, p. 303).

In enacting this mission, the organization works to establish empowering relationships with marginalized communities in Thurston County in a collaborative effort to create a sustainable, equitable and localized food system where “everyone has a place at the table.”

GRuB's mission stems from a set of five core values that informs the basis of their work and organizational culture:

“We believe good food is a basic human right. We believe growing, eating and gathering around healthy food is a simple and powerful way to connect people to each other and to important work in our community.

We believe that everyone is powerful regardless of current life circumstance and that our work and community thrives by including diverse experiences, cultures, opinions, and beliefs. We seek to transform the systems of privilege and oppression that keep us from reaching our full potential as a community.

We begin our work by learning what others have accomplished and what others are currently doing. We believe that we are all students and teachers and that we can accomplish meaningful and sustained social change if we work from a place of abundance, love, joy, and appreciation.

We believe that building meaningful relationships between people is a key strategy for social change. We begin all of our relationships from a place of trust, compassion, respect and honoring people where they are.

People will make powerful positive personal changes when they engage in community-building work they believe in. Powerful, lasting community change requires people who are creating solutions to issues that directly affect their lives.” (Rains & Umholtz, 2016, p. 304)

These values provide the foundation for implementing GRuB's diverse range of programs, which primarily engage pre-K through high school youth, veterans, tribal communities, seniors, and low-income families and individuals. A core facet of GRuB's programming centers on promoting youth empowerment and leadership development through their farm-based dropout prevention, employment training and alternative education program for high school youth, which is the focus of this research. While a programmatic mainstay since the organization's inception, GRuB's youth program has shifted in scope and format over time. The original version was the Cultivating Youth Employment Program (CYEP), which operated from 1999 to 2010. The CYEP provided low-income and/or disengaged high school youth, as well as out of school youth pursuing

a GED, with job training, dropout prevention support, and opportunities for social and emotional development. The program specifically served youth in three Thurston County school districts living at or below 135% of the federal poverty line and employed between ten and thirty youth per year (Rains & Umholtz, 2016). The CYEP was comprised of an eight-week summer job training program and a nine-month academic year program (AYP) that ran after school and on weekends. The CYEP engaged youth in hands-on work to combat hunger, poverty, inequality and oppression in the community—barriers that many of the youth faced directly in their own lives (Rains & Umholtz, 2016, p. 304).

Through their work on the farm and in the community, youth earned stipends and had the opportunity to earn one school credit. In addition to learning how to cultivate and distribute sustainably grown food through the farm's Community Supported Agriculture (CSA) programs, an on-site market stand and the Thurston County Food Bank, the program curriculum included a variety of workshops designed to accommodate diverse learning styles. The workshops covered a range of topics including social justice, non-violent communication and conflict resolution, public speaking, personal wellness, community development and fundamental employment skills. Crewmembers also played a key role in carrying out the mission of the Kitchen Garden Project by building raised garden beds at the homes of low-income families and individuals. Furthermore, youth had the opportunity to engage in fundraising, networking and advocacy work, including grant writing, event planning, speaking at City Council meetings, attending conferences, and hosting the National Rooted in Community Summit—a nation-wide coalition of youth food justice organizations (see Rooted in Community, n.d.). Youth who completed

the academic year program could apply to return in various summer leadership positions, including Peer Crew Leaders (PCL's), who provided peer-to-peer mentorship and support for the incoming summer Youth Crew, and Farm Assistants, who aided the Farm Manager in leading farm operations. When additional opportunities were available within the organization, youth could also apply to lead special projects or assist with administrative work. The short-term goals of the CYEP aimed to provide youth with job training and dropout prevention support, fostering empowered, hireable youth who graduated high school. In the big picture, GRuB "hoped to empower a new generation of leaders who would continue to build a more just world," (Rains & Umholtz, 2016, p. 306).

Owing to the positive personal, social and academic outcomes that CYEP alumni exhibited, the principal of Olympia High School (OHS) approached GRuB in 2009 with an opportunity to expand the CYEP into an alternative half-day high school program. This partnership with the Olympia School District enabled GRuB to grow the CYEP program into what is now known as 'Food Justice High School,' or GRuB School. GRuB School continues to offer low-income and/or disengaged youth an experiential, holistic and credit-generating education along with job and life skills, but with an expanded curriculum and more hours on-site during the school year. GRuB School engages between twenty and twenty-five youth per cohort, 50% of whom are eligible for free or reduced-price lunch and are struggling in the conventional school system; 25% of whom are struggling in the conventional school system from any income level; and 25% of whom are eligible for free or reduced-priced lunch and are doing well in school. The GRuB School program is also divided into a summer employment training and education

program that retains the basic structure, curriculum and activities of the CYEP, as well as a nine-month academic year program. Through a partnership with the Olympia School District and The Office of the Superintendent of Public Instruction (OSPI), GRuB expanded the CYEP curriculum to meet the specifications of Washington’s Career and Technical Education (CTE) requirements in 2016. This agriculture and food justice-centered curriculum provides students with the opportunity to earn core and elective credits in horticultural science, civics and entrepreneurship during the school year, as well as one credit in horticulture and natural resource management during the summer. These school district partnerships play a key role in sustaining the GRuB School program, as CTE funds are leveraged to staff the lead educator positions and as the school budget accommodates a portion of the farm’s operating expenses (Rains & Umholtz, 2016).

The GRuB School model launched in 2011 as a two-year pilot program with OHS. By 2013, the GRuB School model demonstrated numerous beneficial outcomes for first two cohorts, including increased academic engagement and performance, leadership skills, teamwork, self-confidence and efficacy, community involvement, and food knowledge and security (Rains & Umholtz, 2016). Since 2013, three more GRuB-like programs have been established in partnership with different high schools in Thurston County, and four other counties throughout the region have also adapted GRuB-like youth programs to meet the needs of their own communities (GRuB, n.d.-a).

Additionally, in March of 2018 the Washington State Legislature passed a “breakfast after the bell” bill that includes language supporting farm-based youth engagement programs like GRuB’s (GRuB, n.d.-a), which the organization and youth program

participants played a key role in advocating for. For GRuB specifically, the ultimate goal of their school program “is to grow adults who understand connections between environmental sustainability and social justice, and are invested in changing their world for the better,” (GRuB, 2017).

Despite changes in program structure and content, particularly during the school year, GRuB’s youth program has consistently centered on three interconnected themes—Farming Land, Farming Self, and Farming Community—which aim to foster environmental stewardship along with personal and community development. These themes and the activities they inform have been integral to both the CYEP and GRuB School curricula. In Farming Land, youth play an essential role in cultivating, harvesting and distributing over 15,000 pounds of produce and flowers for the organization’s market stand, CSA programs, and the Thurston County Food Bank, as well as for themselves and their families. In doing so, youth learn about sustainable farming methods including composting, soil health, cover crops, crop rotation, chemical-free pest and weed management, proper harvesting techniques and more. In addition, youth participate in field trips to other local farms to learn about the food system in a broader context and to experience various styles of sustainable farm management. Outcome objectives from Farming Land include an increased sense of environmental awareness and stewardship, increased knowledge of sustainable food systems and environmental science, and practical skills in food cultivation.

In Farming Self, youth participate in workshops including multicultural communication, teambuilding and public speaking to gain interpersonal and leadership skills as well as an enhanced sense of empowerment. A crucial component of Farming

Self is “Straight Talk,” a method of providing and receiving constructive criticism that highlights one’s strengths while identifying opportunities for further growth. In addition, youth learn job skills and receive support in academic planning and goal setting. Another aspect of Farming Self is personal wellness, wherein youth learn healthy lifestyle habits and utilize farm produce to prepare group meals with Guest Chef volunteers from the community. Outcome objectives from Farming Self include a renewed commitment to school, increased leadership and communication skills, and enhanced self-confidence and personal agency.

In Farming Community, youth lead volunteers and community groups in work on the farm and host field trips for middle, elementary and pre-school students. In addition, youth support the Kitchen Garden Project (now called the Victory Garden Project) in building community gardens and raised beds for low-income families. Youth also engage in public speaking and advocacy as GRuB ambassadors, strengthening community connections and furthering the organization’s mission within the community and local and state governments. Outcome objectives from Farming Community aim to provide youth with an increased value for civic engagement and contribution. Furthermore, the Farming Community component of GRuB’s program seeks to promote food justice by providing equitable access to nutritious, culturally appropriate food, as well as opportunities for the public to participate in developing a sustainable local food system.

In addition to Farming Land, Self and Community, the curriculum for both youth program formats has been constructed around four pillars of Relevance, Responsibility, Relationships and Rigor, or “The 4 R’s.” These tenets were adapted from The Food Project, an agriculture and food justice-based youth empowerment program in

Massachusetts whose model has inspired the emergence of numerous programs across the country that share a similar philosophy and vision (The Food Project, n.d.). In developing their program model, GRuB also incorporated tools from Stanley Pollack's Center for Teen Empowerment, as well as Thurston County's Dispute Resolution Center, Stonewall Youth, and many other organizations and professionals advancing the fields of youth and community development.

The 4 R's provide a framework for developing and evaluating program activities and outcomes. Relevance refers to the importance of engaging youth in context-based, meaningful learning that they can directly relate to and understand the broader implications of. Responsibility provides youth with the opportunity to lead crucial tasks on the farm and in the community, practice accountability, and understand the direct impacts of their decisions and actions. Relationships represent a foundational aspect of GRuB's organizational values and play a critical role in positive youth and community development (Eccles & Gootman, 2002; Pittman et al., 2000). Lastly, Rigor provides opportunities for youth to challenge themselves and expand their capacity to commit to and follow through on tasks, both individually and as a team. While not a distinct fifth R, reflection plays a central role in each aspect of the aforementioned tenets to provide opportunities for youth and staff to contemplate their experiences, recognize new learning, and identify opportunities for further improvement and growth.

Pre and post-program evaluations have demonstrated positive outcomes from GRuB's program model including increased academic success, self-esteem, socio-emotional development, and community engagement. According to GRuB's website, "From 2001-2011, only 39% of youth who entered GRuB's youth programs were on

track to graduate. Today, 90% have either graduated from high school, are on-track to graduate, and/or have earned their GED and 66% have gone on to college,” (GRuB, n.d.-b, para 2). Outcomes from the two-year pilot of GRuB School included 70% of students feeling greater self-confidence, 92% of students reporting an increased locus of control (sense of self-determination), 95% of students making advancements toward education and career goals, an overall average increases in GPA scores and earned credits, as well as a number of other beneficial results (Rains & Umholtz, 2016, p. 310). The present study aims to assess whether and how these program outcomes are sustained throughout participants’ lives as understood through the lenses of critical food pedagogy (Sumner, 2015; Sumner & Wever, 2016; Wever, 2015) and positive youth development (Eccles & Gootman, 2002; Lerner, Lerner, et al., 2005; Pittman et al., 2000). These concepts, which provide the theoretical basis for this study, will be discussed in greater depth in the next chapter.

Chapter 3: Literature Review

This chapter will provide a review of the literature that serves as a background and foundation to this thesis. To establish a broad conceptual framework, this chapter begins with an overview of the philosophical foundations of environmental education and discusses how the field has evolved over time. It then focuses more specifically on garden, farm, agriculture and urban agriculture education—which will be referred to more generally as food cultivation education—all of which share common roots with environmental education in terms of origins and desired outcomes. This section will then transition to a discussion of critical food pedagogy (Sumner, 2015; Sumner & Wever, 2016; Wever, 2015), which provides an analytical framework for this study. Critical food pedagogy is an emerging field of education that aims to cultivate not just practical food knowledge and skills, but also an enhanced awareness of the social, political, economic and ecological issues that create injustices in the food system. Furthermore, the principles of positive youth development (PYD) and community youth development (CYD) are reviewed, which both provide an additional theoretical basis for this study. This section then discusses how food cultivation education programs represent a fitting conduit for youth and community development. Finally, a review of relevant studies on youth gardening and urban agriculture programs is provided, along with a discussion of how this study contributes to the existing literature.

Preface

Environmental education represents a broad, multifaceted field of study, embodying a number of origins, subfields and evolutionary transformations that currently encompass topics from watershed restoration to community-based agriculture. As such,

numerous pedagogical threads have woven together to form the basis of environmental education. Before delving into the history of environmental education, a concept born from Western ideologies, it must be noted that humans' intrinsic kinship with the Earth and ethics of environmental stewardship hold deep roots in the traditional wisdom, knowledge, values and practices of Indigenous cultures around the world. This includes the acquisition and cultivation of food, which is a primary focus of this thesis. The impetus for environmental education as it is defined today stemmed from multiple departures from nature, driven by colonization, industrialization and urbanization. Values of environmental awareness, sensitivity and connectedness are not new concepts, but re-emerged as an awakening to an increasingly industrialized and polluted world (Gruenewald, 2004; K. Wheeler, 1975). Concepts of nature have since rightfully expanded to include the urban environment, as the vital importance of place (Sobel, 2004) and the influence of privilege and oppression on the environment and food systems have begun to take hold (Alkon & Agyeman, 2011; Bullard, 1993; Grass & Agyeman, 2002). These concepts will be discussed in more depth later in this literature review.

Philosophical Foundations of Environmental Education

The primary forebears that have come to form the basic constitution of environmental education include nature study, conservation education, outdoor education and experiential education (MacGregor, 2017; Stevenson, 2007; G. Wheeler, Thumlert, Glaser, Schoellhamer, & Bartosh, 2007; K. Wheeler, 1975). In the 19th century, nature study emerged in Europe, Australia and North America as a favorable technique for enhancing processes of learning and inquiry, emphasizing the importance of direct experience in nature in order for students to develop an intimate understanding of and

personal connection to natural systems (Jackman, 1892; MacGregor, 2017; Stevenson, 2007). In the United States, early progressive educators Liberty Hyde-Bailey and Anna Botsford Comstock forwarded the nature study movement as a form of agricultural advocacy in response to increasing urbanization and the perceived need to improve agricultural practices in order to feed a growing urban population (Comstock, 1911; Danbom, 1979; Hayden-Smith, 2014). Specifically, the nature study movement in the northeastern United States sought to re-instill rural interest in agriculture, especially in primary schools, by encouraging students to develop a personal connection to the land while enhancing their understanding of natural systems, with the goal of preparing them to become skilled, intuitive farmers (Danbom, 1979; Hyde-Bailey, 1909; Peters, 2006). Nature study provided a means of advancing scientific inquiry through personal discovery while instilling environmental sensitivity and a deeper connection to the land (MacGregor, 2017), with farms and gardens serving as primary vehicles for such learning (Kohlstedt, 2008).

Conservation education emerged in the first half of the 20th century, prompted by increasing concern about rates of natural resource extraction. As opposed to forming a distinct pedagogical practice, conservation education originated more so as a campaign to garner public support for resource conservation and the land management agencies implementing those practices (MacGregor, 2017; C.E. Roth, 1978; G. Wheeler et al., 2007).

Outdoor education provided a means of progressive educational reform, seeking to create learning experiences that transcend the classroom and connect students with the surrounding community (MacGregor, 2017). The philosophy behind outdoor education

largely stems from progressive educator John Dewey's work, and emphasized the values of experiential learning and student-centered teaching to cultivate well rounded, engaged individuals who actively participate in civic life (Dewey, 1938). Theories of experiential learning recognize that experience encompasses a continuous, reflexive interaction between individual internal processes and external cultural, social and physical environments (Dewey, 1938; Freire, 2005/1970; Kolb, 2015/1984). Experiential learning occurs through a cumulative, cyclical process of perception, critical reflection, conceptualization and action, allowing the learner to utilize present experience to build upon, challenge and transform past knowledge (Dewey, 1938; Freire, 2005/1970; Kolb, 2015/1984). In order to be most impactful, however, experiential learning requires a structured framework (Dewey, 1938), which environmental education can provide (Desmond, Grieshop, & Subramaniam, 2004). Utilizing this framework, environmental education places curricular and personal development objectives in the context of localized, real-world applications, thus making the learning process more relevant to the learner and fostering a greater personal connection to social and ecological systems (Desmond et al., 2004; Dewey, 1938; Orr, 1992).

Outdoor education informed the expansion of experiential education, not just for school students but also for teens and adults, largely advanced by the immersive, adventure-based Outward Bound School, founded during World War II (MacGregor, 2017; G. Wheeler et al., 2007). The field has since expanded to include any form of learning through experience and reflection, including wilderness education and service learning (MacGregor, 2017). The primary goal of experiential education, as with outdoor education, is to provide a holistic learning experience that promotes personal, social and

moral development along with increased knowledge and critical thinking skills (MacGregor, 2017).

In the 1960's, increasing rates of environmental degradation and pollution prompted widespread public concern and a greater perceived need for environmental education in order to address these issues. The first formal attempt to conceptualize environmental education came from professor William B. Stapp (1969) and his cohort of graduate students in a seminal paper that put forth the following definition:

“Environmental education is aimed at producing a citizenry that is *knowledgeable* concerning the biophysical environment and its associated problems, aware of *how* to help solve these problems, and *motivated* to work toward their solution,” (p. 30, original emphasis). In other words, the purpose of environmental education is to create an informed and engaged populace that actively works toward solving environmental problems.

Environmental education gained worldwide recognition in the 1970's. The UNESCO-UNEP International Governmental Conference on Environmental Education formalized the first global definition in the 1977 Tbilisi Declaration, citing the core objectives of promoting *awareness* of environmental problems, *knowledge* of environmental systems and the issues therein, *attitudes* of responsibility toward the environment, *skills* to develop strategies to address environmental problems, and *participation* in direct action to implement those solutions (UNESCO, 1978). The conference further concluded that environmental education “should consider the environment in its totality – natural and built, technological and social (economic, political, technological, cultural-historical, moral, aesthetic),” while promoting

interdisciplinary collaboration, critical thinking and a lifelong learning ethic (UNESCO, 1978, p. 27). With respect to this research, the ultimate goals of GRuB's youth program share similar objectives to those of environmental education, as the program aspires to cultivate empowered leaders who are equipped to engage in their communities, with the hopes of continuing efforts to create a more equitable society (Rains & Umholtz, 2016).

As a field, environmental education continues to evolve and adapt to the changing needs of society. Various outgrowths of environmental education include education for sustainable development, urban environmental education and urban agriculture education. Taken together, environmental education and its co-fields theoretically embody the principles of holistic systems thinking, experiential learning, interdisciplinary problem solving and participatory action to promote collective planetary wellbeing (Stapp et al., 1969; UNESCO, 1978). In practice, however, environmental education and the mainstream environmental movement have been criticized for promoting a dominant, westernized conception of the environment as pristine nature while ignoring the social, economic and political systems of power and oppression that perpetuate environmental problems and social and economic inequities (Bullard, 1993; Ceaser, 2012; Gruenewald, 2003, 2004, 2008; Kyburz-Graber, 1999; Stevenson, 2007). Environmental education scholars have responded by calling for a greater emphasis on the importance of place, authentically situating learning within the particular social, economic, cultural, and historical contexts of individual communities or regions, with the aim of enhancing student learning by engaging directly with their local environment as Dewey advocated for (Gruenewald, 2008; Orr, 1992; Sobel, 2004).

Critical environmental education frameworks.

Gruenewald (2003) puts forth the idea of a critical pedagogy of place, which integrates principles of place-based education with critical pedagogy to cultivate an appreciation for the unique ecological and cultural aspects of place while promoting awareness of the societal structures that create inequality, with the purpose of actively working to challenge those structures. Gruenewald (2003) draws from Brazilian philosopher and educator Paulo Freire's (2005/1970) seminal work *Pedagogy of the Oppressed*, which represents one of the foundational texts on critical pedagogy. In his work, Freire (2005/1970) identifies the "banking" model of education—the hierarchical, unidirectional transfer of knowledge from teacher to student—as a force of oppression. Instead, Freire (2005/1970) advocates an educational model wherein students and educators engage in mutual, dialogue-based processes of teaching and learning. Freire (2005/1970) contends that the purpose of education is to promote *conscientizacao*, or critical consciousness, which is the ability to identify and address the social, political and economic forces that create oppressive structures. According to Freire (2005/1970), critical consciousness can be acquired through praxis, or the process of reshaping reality through reflection and action. In this way, education serves as a means of liberation, extending the concept of literacy from the ability to read and write to the capacity to critically analyze and take actions to transform the world (Freire, 2005/1970; Freire & Macedo, 1987 as cited in Gruenewald, 2003).

Gruenewald's (2003) critical pedagogy of place melds the ideas of transformative, critical education with the importance of developing genuine care for one's place, as is the aim of place-based education. This pedagogical framework recognizes the historical injustices tied to place and works to conserve localized ecological and cultural tradition

in an effort to promote social and environmental healing while preventing oppressive forces from creating further harm and destruction (Gruenewald, 2003). In order to achieve this, Gruenewald (2003) links the concepts of re-inhabitation and decolonization, explaining that, “a critical pedagogy of place aims to identify, recover and create material spaces and places that teach us how to (a) live well in our total environments (re-inhabitation); and (b) identify and change ways of thinking that injure and exploit other people and places (decolonization)” (p. 9). In other words, care for one’s environment cannot be severed from concern for the historical, cultural and communal aspects of place, and must integrate environmental sustainability with social justice (Gruenewald, 2003).

With reference to this research, the theoretical underpinnings and critiques of environmental education play an important role in understanding GRuB’s youth development program in the context of food cultivation education, which will be discussed in the following section. The coalescence of nature study, outdoor education and experiential education, with respect to creating authentic and relevant learning experiences, is central to GRuB’s educational philosophy. By engaging youth in hands-on, farm-based experiences, the program aims to instill a sense of environmental stewardship while advancing students’ understanding of agro-ecological processes. Furthermore, by incorporating anti-oppression work, non-violent communication and conflict resolution into the curriculum, students engage in a critical pedagogy of place, with the goal of gaining an understanding of the societal forces that create socio-ecological harms, as well as the skills to address them in the local community and at large. This research aims to evaluate how these learning experiences influence alumni’s

current attitudes toward, and connection to, the environment, food, community and self in terms of self-efficacy, collective agency, critical consciousness and care for place. The concepts of critical pedagogy and critical pedagogy of place set a foundation for critical food pedagogy, one of the analytical frameworks informing this study, which be discussed further subsequent sections of this literature review.

Food Cultivation Education

Garden, farm, agriculture and urban agriculture-based education—which will be termed broadly here as food cultivation education—can be classified as distinct subfields of environmental, experiential and place-based education, all of which share common roots in nature study and outdoor education (Desmond, Grieshop, & Subramaniam, 2004; Smeds, Jeronen, & Kurppa, 2015). It is therefore important to understand the foundations and critiques of environmental education and the environmental movement, and how those concepts parallel the motives and critiques of various forms of food cultivation education and the food movement.

In the late 19th and early 20th centuries, food cultivation education represented an integral component of school systems in the United States, and on a broader level served as a form of building national resilience (Lawson, 2005). As discussed previously, the impetus behind the early, widespread implementation of school gardens stemmed initially from the nature study and progressive education movements, which sought to provide children with authentic learning experiences by connecting them with the natural world and surrounding community (Dewey, 1916; Kohlstedt, 2008). School gardens were prevalent in both rural and urban areas, and were adapted to meet the specifications of the particular community (Kohlstedt, 2008). Speaking to the efficacy of experiential learning

in school gardens as opposed to didactic, classroom-based lessons, Dewey claimed, “No number of object-lessons, got up as object lessons for the sake of giving information, can afford even the shadow of a substitute for acquaintance with the plants and animals of the farm and garden acquired through actual living among them and caring for them,” (Dewey, 1899, p. 20). Aside from enhancing academic learning, food cultivation education also served as a means of vocational training, leadership development and instilling a sense of civic responsibility (Hayden-Smith, 2014; Hoover & Scholl, 2007; Kohlstedt, 2008; Lawson, 2005). Food cultivation education also served to promote a “producer” ethic to combat an increasing focus on mass consumerism, to integrate urban and rural interests, and to re-establish a widespread connection with sources of fresh food (Hayden-Smith, 2014, p. 90). However, it is also critical to note that garden-based education was also used as a tool for cultural assimilation for immigrants and Native Americans, with the goal of inculcating middle-class, Euro-centric ideals of morality, work ethic and patriotism (Hayden-Smith, 2014; Kohlstedt, 2008; Lawson, 2005). In Native American boarding schools for example, the garden curriculum employed a strict agenda, providing “little room for self-expression or creative collaboration among the pupils” (Kohlstedt, 2008, p. 71). Self-expression and creative collaboration are crucial elements of experiential learning that many youth agriculture programs embrace today, and which GRuB integrates as a core component of its youth program curriculum.

In the early 1900s, food cultivation education received significant support from national agricultural and gardening organizations, as well as federal and legislative support. World War I represented a time of increasing concern for national security, in which food security played a central role (Hayden-Smith, 2014). Initiatives such as the

United States Student Garden Army (USSGA) galvanized students to grow food as “soldiers of the soil.” (Hayden-Smith, 2014; Lawson, 2005). “Liberty gardens” cropped up not only in schools but also in public spaces, on front lawns, in windowsills, and in workplaces (Hayden-Smith, 2014). These efforts served to bolster the domestic food supply as agricultural production focused on exporting goods to relieve food shortages in allied countries (Hayden-Smith, 2014; Lawson, 2005). Support for school gardens began to fade after World War I due to shifts in national priorities (Lawson, 2005), and though World War II brought about a short-lived revival of victory gardens, the overall focus of education shifted toward technology and athletics (Sealy, 2001, as cited in Desmond et al., 2004). However, during the Great Depression, urban gardens still served as sites of food cultivation education, providing work-relief to the unemployed as well as general subsistence in individual households (Lawson, 2005).

The next wave of public interest in food cultivation education arose in the 1970s as a response to increasing environmental and social concerns, representing a form of grassroots activism to combat rising food prices and urban disinvestment, reconnect children with natural systems, and strengthen community social relations (Lawson, 2005). In the 1980s, school gardens witnessed a downturn due to conservative social and economic policies (Gaylie, 2009), although entrepreneurial gardens providing employment training opportunities for youth and adults flourished during this time period in response to economic conditions (Lawson, 2005). School gardens emerged yet again in the 1990s as the political climate brought about reinvigorated interest in progressive education and concern for the environment (Desmond et al., 2004). California has served as a leading advocate of school gardens, and in 1995 launched an initiative to incorporate

a garden into every public school in the state (Desmond et al., 2004; Lawson, 2005). The USDA's national Farm-to-School program has further bolstered the role of food cultivation and food systems education in K-12 settings, connecting small and mid-scale farmers with local schools and communities to improve the nutritional quality of school lunches, teach youth about food systems, and engage them in process of growing food (Feenstra & Ohmart, 2012). Agriculture-based youth employment programs also proliferated throughout the 1990s (Lawson, 2005), and have continued to crop up in urban and rural areas across North America in recent years. Many of these programs integrate youth and community development philosophies, which will be discussed further in a subsequent section of this literature review.

Overall, the aims of food cultivation education—particularly garden-based education in either rural or urban settings—share many commonalities with environmental education in terms of promoting environmental knowledge, awareness and stewardship, all of which contribute to ecological literacy (Desmond et al., 2004; Orr, 1992). Further goals include facilitating enhanced “academic skills, personal development, social and moral development, vocational and/or subsistence skills and life skills” and civic engagement (Desmond et al., 2004, p. 20), also common objectives of environmental education that overlap with the goals of the GRuB's youth development program.

Food systems education.

Related to food cultivation education, food systems education has emerged as a rising field in recent decades, predominantly in college and university settings (Galt et al., 2013; Hilimire, Gillon, McLaughlin, Dowd-Uribe, & Monsen, 2014). Food systems

education transcends disciplinary boundaries, providing a comprehensive outlook on the entire supply network of food, fiber and fuel, which encompasses the production, processing, distribution, sale, consumption, disposal and renewal of such products (Hilimire et al., 2014). While the literature tends to refer to food systems education in the context of post-secondary education, this does not necessarily mean that the framework is solely reserved for higher education settings. Food systems education encompasses food cultivation education, including garden-based learning in K-12 schools, as well as informal, community-based education through food justice organizations (Meek & Tarlau, 2016).

Food systems education shares many of the pedagogical principles that inform environmental education, including experiential learning, systems thinking and interdisciplinary approaches (Galt et al., 2013; Valley, Wittman, Jordan, Ahmed, & Galt, 2017). The goal of food systems education, at least in a post-secondary educational context, is to provide students with the knowledge, skills and attitudes to confront the complex and interrelated social, environmental and economic issues within food systems through collective action, which involves effective communication, collaboration, critical reflection, and an ability to take multiple viewpoints into account (Valley et al., 2017). However, in agreement with critical food scholars Meek and Tarlau (2016), I argue that these principles and pedagogical approaches should be applied in food systems education throughout educational settings and divisions, tailored to different stages of cognitive development. Such exposure has the potential to empower youth to discuss and take action around socio-ecological injustices at an earlier age. Educating and engaging youth in efforts to address these issues make them a key part of the solution.

Critical Food Pedagogy

In accordance with critiques of the mainstream environmental movement, critical food scholars assert that the mainstream food movement has focused too narrowly on consumer choice, nutritional behavior modification and environmentally sustainable food production practices (Guthman, 2008a, 2008b; Meek & Tarlau, 2016). While these are important issues that warrant attention and practice, they do not directly address the underlying social, political and economic factors that shape food systems and form the roots of the inequalities therein (Alkon & Norgaard, 2009; Allen, 2008; Gottlieb & Fisher, 1996; Levkoe, 2006; Meek & Tarlau, 2015, 2016). Industrial agricultural practices and the policies that support them have led to pervasive socio-ecological degradation through soil erosion, chemical pollution, fossil fuel dependence, habitat and biodiversity loss, corporate consolidation and labor exploitation (Gliessman, 2015). Low-income communities and communities of color disproportionately experience the injurious nature of the dominant food regime, as structural racism and policies based on principles of deregulation and privatization have influenced urban planning, land ownership, access to fresh, affordable food, and the availability of public programs (Alkon & Agyeman, 2011). As environmental justice scholar Robert Bullard (1993) asserts, “the environmental crisis simply cannot be solved effectively without social justice,” (p. 23, as cited in Gruenewald, 2003, p. 6), nor can the current food system crisis.

In an aim to address this from an educational standpoint, educators have deliberately begun to integrate critical perspectives into curricula around food and food systems in an effort to engage students as more socially and politically conscious food system actors—as producers, consumers and problem-solvers (Valley et al., 2017).

Critical food pedagogy, founded on the educational philosophy of critical pedagogy and tied to transformative learning, represents a broadly applicable approach for elucidating the complexities of the social, environmental and political elements of food systems (Sumner, 2015; Sumner & Wever, 2016; Wever, 2015). Sumner (2015) first proposed this concept, fastening a critical lens to the emerging concept of food pedagogies, which encompass the numerous formal and informal opportunities for teaching and learning centered around food (Flowers & Swan, 2015). As Sumner (2015) states, “critical food pedagogies can be found at a range of scales, from the individual through the local to the national and the global. In addition, they aim to promote progressive change through more balanced relationships, greater equality, redistributed power and cultural tolerance,” (p. 204). School nutrition and farm-to-school programs, school gardens, agricultural youth employment programs, universities, farmers’ markets, and community supported agriculture programs all represent sites where critical food pedagogy has the potential take root and flourish (Sumner & Wever, 2016; Wever, 2015).

Critical food pedagogy stems from the notion that education is a fundamentally political process, as education provides a foundation for how people engage in society (Freire, 2005/1970; Sumner, 2015; Sumner & Wever, 2016; Wever, 2015). Sumner and Wever (2016) define critical food pedagogy as: “A pedagogical approach that discourages acceptance of the status quo and encourages critique of our unsustainable food system and the creation of alternatives that are more environmentally, socially and economically sustainable,” (323). This rejection of the status quo incorporates Freire’s (2005/1970) notions of critical consciousness and praxis, or the ability to recognize societal injustices and actively work to change the circumstances that perpetuate them.

These notions are also tied to transformative learning, or “...learning that results in a fundamental change in world view,” prompted by a disorienting experience that leads to critical reflection and a re-evaluation of how one perceives and engages in the world (Mezirow, 1991, 2009; Sumner & Wever, 2016, p. 324). In essence, critical food pedagogy provides a means to become conscious of the problems within the food system, to critically reflect on these issues, and to devise and implement transformative solutions.

Food literacy.

Also inherent in critical food pedagogy is the concept of food literacy (Sumner, 2015; Sumner & Wever, 2016; Wever, 2015). Numerous recent efforts in scholarship have aimed to define food literacy, and though a consensus has not been reached, many common themes have emerged. In a comprehensive review of the academic and grey literature on food literacy, Truman, Lane, & Elliott (2017) identified six dominant themes that provide a framework for what constitutes food literacy: skills and behaviors, food/health choices, culture, knowledge, emotions, and food systems (p. 367). According to the authors,

“Skills and behaviors describe physical actions or abilities involving food; *food/health choices* describe actions associated with informed choices around food use; and *culture* describes societal aspects of food. *Knowledge* refers to the ability to understand and seek information about food (i.e., nutrition education); *emotions* cover the influence of attitudes and motivation; and *food systems* describes understanding the complexity of food systems (i.e. environmental impact, food wastage, food risk/safety, and so forth,” (Truman, Lane, & Elliot, 2017, p. 367).

These elements illustrate the broad range of factors that contribute to food literacy, from cognitive and behavioral aspects to emotional, cultural and socio-ecological implications.

Building from the range of definitions in the literature, scholars have begun to

develop benchmarks for assessing food literacy (Goldstein, 2014, 2016; Wever, 2015). In her Master's thesis, Goldstein (2014) identified and divided measures of food literacy into two paradigms: the neoliberal consciousness paradigm, focused on individual behavior modification, personal skills and consumer habits, and the critical consciousness paradigm, which encompasses a holistic, systems-oriented form of food literacy that inspires social and political action. Wever's (2015) Master's thesis expanded on Goldstein's (2014) benchmarks in an effort to transcend the apparent dichotomy that the proposed paradigms present, offering a more holistic and fluid understanding of food literacy and critical food pedagogy.

Drawing from Goldstein's (2014) work and Sumner's (2013) application of Habermas' (1971) three learning domains to food literacy, Wever (2015) developed additional food literacy benchmarks that align with empirical/analytic, historical/hermeneutic and critical/emancipatory forms of learning. Empirical/analytic knowledge refers to the practical skills and awareness that an individual must possess in order to source, prepare and consume food (Sumner, 2013; Wever, 2015). This empirical/analytic knowledge corresponds with what Goldstein (2014, 2016) would refer to as the neoliberal consciousness paradigm, and what Truman, Lane and Elliot (2017) would generally characterize as skills and behaviors, food/health choices, and knowledge. The historical/hermeneutic realm of food knowledge includes a socio-cultural perspective, encompassing emotions tied to food as well as different cultural, social, linguistic and media-driven connotations of food (Sumner, 2013; Truman, Lane & Elliot, 2017; Wever, 2015). Critical/emancipatory knowledge refers to the holistic, action inspired critical consciousness that Goldstein (2014, 2016) described in her work, which

includes a critical awareness of the social, political, economic and ecological factors that shape the food system and lead to disparities in justice (Sumner, 2013; Wever, 2015).

Using Goldstein's framework as a foundation, Wever (2015) also integrated measures of ecological literacy, critical pedagogy of place, and transformative learning to formulate food literacy benchmarks in each learning domain. These benchmarks are reproduced in Table 1, and are used as an analytical framework in this study.

Table 1: Benchmarks of Food Literacy

(Reproduced from Wever (2015, p. 49). Normal text represents the benchmarks that Goldstein (2014, p. 53) developed, and italicized text represents Wever's (2015) additions)

Empirical/Analytic Knowledge and Skills	Historical/Hermeneutic Knowledge and Skills	Critical/Emancipatory Knowledge and Skills
<ul style="list-style-type: none"> • Increased nutrition knowledge • Improved cooking skills • Cooking more meals from scratch; ability to cook for oneself • Ability (and desire) to purchase healthy foods • Improved food safety behaviors • Ability to budget/plan meals • Increased consumption of fruits and vegetables • Interest in trying new foods • Confidence and motivation to use food knowledge to make healthy choices • Ability to make informed decisions and judge marketing, new products and quality of food • Ability to influence family/friends in purchasing/cooking/eating decisions • Satisfaction, creativity, confidence, resilience because of food knowledge and skills • Ability to cook with substitutes • Knowledge of where food comes from and various food terminology (e.g. GMO) • <i>Ability to read and interpret food labels</i> 	<ul style="list-style-type: none"> • <i>Knowledge of one's food culture</i> • <i>Understanding of food as a catalyst for community building</i> • <i>Knowledge of how food's role in society has changed over time</i> • <i>Knowledge of unhealthy relationships to food</i> • <i>Ability to understand and dissect food advertising</i> • <i>Ability to analyze the role of food in media such as television, movies, literature, etc.</i> 	<ul style="list-style-type: none"> • Knowledge and awareness of the multiple dimensions of food (broader engagement) • Ability to reflect critically on food and the food system, interest in seeking change • Awareness of socio-political impacts of the food system and ability to analyze associated discourses • Interest in active citizenship as it relates to food • Ability or attempts to disrupt current food system through informed actions • Exercising food-related behaviors that support a democratic, socially, economically <i>and ecologically</i> just food system • Knowledge and awareness of food and agricultural systems and their relationship to environmental health • <i>Knowledge and/or skills related to ecological relationships, processes, cycles, patterns, and context</i> • <i>Knowledge of the plants and animals that affect the ecological aspects of growing food</i> • <i>Sense of connection to and care for a particular socio-ecological place, expressed through human, non-human and food-based relationships</i> • <i>Evidence of critical reflection in support of transformative learning</i> • <i>Evidence of critical discourse in support of transformative learning</i> • <i>Critical knowledge of the social and economic forces of a society that affect food.</i>

Wever (2015) clarifies that these three domains of learning are not hierarchical in value, but instead are nested within one another, each domain representing an essential element of food literacy. According to Wever (2015),

“Within this framework, individualistic learning is not negative or misguided—it is merely one component of a larger concept, and necessary for but not sufficient to comprise food literacy... Thus understanding these forms of knowledge as components of a larger concept of food literacy removes the false dichotomy of situating individualistic learning opposite that of collective learning, and does not force the concept of food literacy into boxes or a linear continuum,” (p. 38).

As such, each of the three domains of food literacy comprises a crucial aspect of critical food pedagogy, which together can create a dynamic interplay of reflection and action to work toward positive change in the food system (Wever, 2015).

Food justice.

Food justice represents another important concept related to critical food pedagogy. Although the rhetoric of the alternative food movement ostensibly claims to integrate issues of social justice, it has lacked in practice, perpetuating the exclusion of marginalized communities by centering on ideals derived from middle class, white culture (Allen, 2010; Guthman, 2008a, 2008b, 2011). Guthman (2008b, 2011) characterizes these ideals as “colorblind” and “universalist,” noting a substantial paucity of multicultural and historical sensitivity, a lack of awareness of white privilege, and an overall disregard for a plurality of perspectives on the part of the alternative food movement. In contrast, the food justice movement recognizes the institutionalized race, gender and class-based inequalities responsible for creating societal disparities in health, food access, and participation in the food system (Alkon & Agyeman, 2011; Alkon & Norgaard, 2009).

According to Alkon & Norgaard (2009) food justice represents “a theoretical and political bridge between scholarship and activism on sustainable agriculture, food security, and environmental justice,” (p. 289)—movements that have traditionally been advocated for in isolation from one another despite their common temporal roots. The food justice movement arose in tandem with the environmental justice movement, born out of the Civil Rights movement in the 1960s and 1970s with the aim of addressing hunger in inner cities (Gottlieb & Fisher, 1996), the Black Panthers’ Free Breakfast Program for school children playing a key role in this (Gottlieb & Joshi, 2010). However, scholars have since noted that solely focusing on equitable food access, as definitions of food security typically emphasize, renders too narrow a definition for food justice (Clendenning, Dressler, & Richards, 2016; Loo, 2014).

Allen (2010) identifies two forms of equity that are essential to bringing food justice to fruition: “material equity (that is, the distribution of resources) and process equity (that is, inclusion and democratic participation),” (295). Levkoe (2006) concurs that limiting the definition of food security to food access does not adequately address food justice, and argues that the concept of Community Food Security provides a more comprehensive approach to food justice in terms of addressing access to resources, collaborative decision-making, community resilience, and environmental, social and economic sustainability. In this sense, the food justice movement is a conduit for transcending the person-as-consumer paradigm to facilitate democratic participation in the food system (Levkoe, 2006). To fully achieve food justice, local food projects must include marginalized populations in decision-making processes (Allen, 2010).

To achieve food justice on a broader scale, Allen (2008, 2010) argues that institutions,

including schools and hospitals, can play an important role in advancing social justice and food access. Allen (2008) further contends that schools have a responsibility to teach social justice and provide students with the critical thinking skills to take action against food system and greater societal inequities.

Regarding the present study, the GRuB School Program incorporates critical food pedagogy through various means, and the organization as a whole strives to promote food justice. However, as with any organizational program, not all goals are realized and not all participants fully engage. The GRuB School Program, formerly the Cultivating Youth Employment Program, aims to integrate critical food pedagogy by working to engage youth in understanding systems of power and oppression that shape their experiences and in taking collective action to address hunger, poverty and inequality in their community. GRuB's organizational emphasis on social justice and democratic participation within food systems aims to forward the principles of food justice. In both program formats, GRuB has also provided opportunities for youth to connect to the national food justice movement through the Rooted in Community Summit—a national coalition of youth-centered food justice organizations. In addition, youth in both programs have had the opportunity engage in advocacy work to forward GRuB's mission by speaking at City Council meetings.

On an institutional level, GRuB's partnerships with local school districts provides a dual intervention of two dominant, conventional systems—the school system and the food system. Through this partnership, GRuB School seeks to enhance students' educational experiences and sense of self-worth through direct participation in the food system, while increasing local access to nutritious food. In the expanded curriculum of

GRuB School, youth have had opportunities to engage in political advocacy on the local and state levels to promote legislation that integrates farm-based alternative education and drop-out prevention programs like GRuB's into more school districts. In sum, this exposure to critical perspectives on food systems provides an analytical framework through which to assess alumni's long-term takeaways from their experiences working and learning with GRuB. Specifically, this study will utilize the food literacy benchmarks (Goldstein, 2014, 2016; Wever, 2015) to assess how engaging in critical food pedagogy translated to food literacy in each of the three domains of learning over the long-term.

Youth Development Theories: Positive Youth Development and Community Youth Development

Along with critical food pedagogy, additional fields of theory that inform this study include positive youth development (PYD) (Eccles & Gootman, 2002; Lerner, Lerner, et al., 2005; J.L. Roth, Brooks-Gunn, Murray, & Foster, 1998) and community youth development (CYD) (Perkins, Borden, Keith, Hoppe-Rooney, & Villarruel, 2003; Pittman & Wright, 1991; Sutton, 2007; Sutton et al., 2006). While food cultivation education has always incorporated aspects of personal development, positive youth development and community youth development add additional layers of intentionality and support.

PYD and CYD are closely linked fields, as CYD represents an expansion and evolution of PYD concepts. Before delving into a description of CYD, it is important to build a foundational understanding of the principles of PYD. Since the late 1980s, positive youth development has emerged as an effective conceptual framework for adolescent enrichment and growth, providing youth with the necessary self-assurance,

skills and knowledge to successfully segue into adulthood (Eccles & Gootman, 2002; J. J. J.L. Roth & Brooks-Gunn, 2003a, 2003b). PYD takes a multifaceted approach to promoting personal growth, addressing the physical, psychological, social, cultural, historical and environmental aspects that influence human development (Lerner, Almerigi, Theokas, & Lerner, 2005). The PYD philosophy stands in contrast to a long-held, clinical conception of youth as “problems to be managed,” and rather considers young people as “resources to be developed” (J.L. Roth et al., 1998, p. 442). As such, the PYD approach recognizes youth as valuable members of society, anchoring its focus on enhancing the strengths and assets inherent in youth as opposed to preventing problematic behavior (Pittman & Wright, 1991; J.L. Roth et al., 1998). This ideology evolved from a seminal statement by Karen Pittman, a leading youth development practitioner: “Prevention is not synonymous with development; a problem free young person is not necessarily a fully-developed, capable young person,” (Pittman & Wright, 1991, p. 61). It is important to note, however, that what constitutes fully developed and capable will depend on different social and cultural contexts (J.L. Roth & Brooks-Gunn, 2016).

The PYD field has not come to consensus on what constitutes an effective youth development program, as programs must be tailored to best serve the needs of their community (J.L. Roth & Brooks-Gunn, 2016). However, there are general characteristics that youth development programs can draw from. In a widely cited review of community-based youth development programs, Eccles & Gootman (2002) outline eight essential aspects of promoting PYD: physical and emotional safety; a balanced and stable structure; emphasis on cultivating authentic, trusting relationships; fostering a sense of

belonging in a community; promoting positive standards of behavior; promoting individual and collective agency and sense of purpose; skill development; and combining the forces of family, school and community to support these goals (9-10). Other youth development scholars have further distilled these criteria to three distinct features: positive and lasting relationships between youth and adults; engaging youth in activities that promote life skill development; and providing youth with opportunities to participate in and lead meaningful community-based activities (Lerner, 2004; J.L. Roth & Brooks-Gunn, 2003a).

The most common framework to measure PYD program outcomes emphasizes five primary goals, the “Five Cs,” which include fostering Competence, Confidence, Connection, Character and Caring (Lerner, 1995 credits Little, 1993 as an originator of this framework; Pittman, Irby, & Ferber, 2000; J.L. Roth & Brooks-Gunn, 2003a, 2003b). Competence refers to skill development in social, cognitive, academic, occupational and cultural arenas, including interpersonal communication, decision-making, work ethic, career goal-setting and multicultural awareness (Lerner, 1995, 2004; Lerner, Lerner, et al., 2005; J.L. Roth & Brooks-Gunn, 2003a, 2003b). Confidence encompasses aspects of self-esteem, personal agency and identity; Connection refers to fostering authentic, mutually beneficial relationships with peers, adults, community and institutions; and Character involves moral and ethical development including traits such as responsibility, integrity and valuing diversity (Lerner, 1995, 2004; Lerner, Lerner, et al., 2005; J.L. Roth & Brooks-Gunn, 2003a, 2003b). Last, Caring regards sympathetic and empathetic consideration of others (Lerner, 2004; Lerner, Lerner, et al., 2005; J.L. Roth & Brooks-Gunn 2003a, 2003b).

This model has demonstrated consistent reliability and generalizability in terms of assessing program outcomes across multiple stages of adolescence, although the degree to which youth integrate these characteristics will differ based on the context of the program and the individual's internal and external circumstances (Bowers et al., 2010; Conway, Heary, & Hogan, 2015; J.L. Roth & Brooks-Gunn, 2016). A sixth C, Contribution, can result from developing the first five Cs, which manifests in the forms of increased self-care, concern for others, and civic engagement, thus connecting personal growth to broader community benefits (Lerner, 2004; Pittman et al., 2000). Contribution represents a significant component of PYD that previously held less emphasis in the field. As PYD programs gained traction throughout the 1990s, Pittman (1999) amended the original PYD byword with the addendum: "Problem free is not fully prepared. And fully prepared is not fully engaged," (1). In her article, Pittman (1999) describes the critical importance of youth investment and involvement in their individual growth, as well as the development of the communities they live in and society as a whole.

Making tangible community differences through civic engagement provides youth with a vehicle to develop leadership skills and the Six Cs, while simultaneously benefitting the community at large (Perkins et al., 2003). Youth civic engagement lays the foundation for the principles of community youth development (CYD), which can lead to PYD outcomes, albeit through various means. In general, CYD emphasizes the essential roles of youth in community development and community in youth development (Irby, Ferber, Pittman, Tolman, & Yohalem, 2001; Kemp, 2011; Perkins et al., 2003; Sutton, 2007; Sutton et al., 2006).

Different community youth development programs emphasize varying levels of

civic engagement, however. Sutton and colleagues (2006; Sutton, 2007) define a spectrum of community youth development programs, from social integration focusing on individual development (PYD) at one end, to civic activism emphasizing social transformation at the other, with community improvement initiatives comprising an intermediate range. While each form of community youth development program provides significant benefits, Sutton (2007) and Kemp (2011) argue that CYD programs with a greater emphasis on PYD tend to eschew critical examinations of the social inequities built into the fabric of society, and that the standard PYD framework may not necessarily be attuned to different cultural needs, despite the purported PYD emphasis on context (Lerner, Almerigi, Theokas, & Lerner, 2005). On the other hand, more transformative community youth development programs incorporate a greater awareness of the social, economic and political structures that create and perpetuate injustice, and engage youth with their communities to redress those structures (Kemp, 2011; Perkins et al., 2003; Sutton, 2007; Sutton et al., 2006). Empowering youth through impactful, civic participation puts the principles at the core of democracy into practice and works toward creating a more inclusive and equitable society (Kemp, 2011; Sutton, 2007).

With Farming Land, Farming Self, and Farming Community as the organization's three core themes, GRuB's program provides a balanced integration of positive youth development and community youth development. The program's emphasis on positive adult-youth and peer relationships, constructive and straightforward communication, and supportive environments all encompass the principles of PYD, while the community engagement aspect of GRuB's youth program incorporates CYD. While GRuB seeks to inspire social transformation, a primary focus is youth development, situating GRuB in

the community improvement arena closer to the social transformation end of the spectrum (Kemp, 2011; Sutton, 2007; Sutton et al., 2006). While GRuB may clearly be classified as a CYD program, the organization specifically identifies PYD as a foundation of its youth development philosophy. In addition, the well-established benchmarks of the Six Cs provide a standard measure through which to assess the long-term outcomes from participation in GRuB's youth program. As such, the PYD framework will serve along with critical food pedagogy as an analytical lens for this study.

Review of Studies on Community-Based Youth Agriculture Programs

Community-based youth agriculture programs provide a fitting conduit for critical food pedagogy and positive youth and community development. Whether in schools or through community organizations, these programs provide opportunities to foster greater resilience on individual, community and greater environmental scales by promoting civic engagement, youth leadership, food justice, community food security, and by practicing and teaching environmentally sustainable food cultivation techniques (Ceasar, 2012; Heiges, 2017; Krasny & Tidball, 2009; Levkoe, 2006).

Research has demonstrated that environmental education programs that integrate youth development philosophies with environmental action can successfully achieve the goals of both (Schusler & Krasny, 2010; Schusler, Krasny, Peters, & Decker, 2009).

Schusler et al. (2009) define environmental action as “a process of co-creating environmental and social change that builds individuals’ capabilities for further participation contributing to personal and community transformation,” (p. 16), demonstrating the potential for environmental programs to foster youth and community development with potential long-term impacts. Moreover, youth participation in

community-based programs has been associated with greater dedication to civic action throughout life, as well as increased motivation in work and school (Irby et al., 2001).

As discussed previously, food cultivation education has a long history of promoting personal development, leadership skills, vocational training and community building (Hoover & Scholl, 2007; Lawson, 2005). As such, the immediate benefits of garden-based education in schools are well documented for a number of variables, including improvements in academic achievement, diet and nutrition, environmental attitudes, social connectedness and personal growth (Ruiz-Gallardo, Verde, & Valdés, 2013; Skelly & Bradley, 2007; D.R. Williams & Dixon, 2013). Similarly, involvement in extracurricular community-based agriculture programs have demonstrated favorable youth and community development outcomes including civic engagement, relationship building and identity formation (Broaddus, Przygocki, & Winch, 2015; Fulford & Thompson, 2013; Hung, 2004; Lerner & Lerner, 2013; Sonti, Campbell, Johnson, & Daftary-Steel, 2016).

Yet, while the literature demonstrates numerous benefits of youth agriculture programs, such programs have not escaped critique. Weissman (2015) notes a tendency for youth agriculture programs to perpetuate neoliberal ideologies of market-driven and individual choice-based solutions to systemic problems. This is an important critique to consider, especially in relation to critical food pedagogy and food justice. Studying urban agriculture projects in Brooklyn, New York, including those that incorporate youth programming, Weissman (2015) found that these projects primarily operate within capitalist constructs, seeking to leverage change through market-based strategies and individual consumer behaviors as opposed to political action. Weissman (2015) contends

that maintaining these neoliberal strategies ultimately weaken the prospects of bringing political transformation to fruition. Nonetheless, Weissman (2015) states that, “Although current trends indicate that urban agriculture youth programming works to (re)produce neoliberalism and undercuts the political efficacy of Brooklyn’s urban agriculture, these projects simultaneously produce openings for building political solidarities,” (351).

Integrating critical perspectives into youth programming curricula, even while operating within the larger system, has the potential to foster greater awareness and agency among youth participants to carry forward as they engage in the world. Regarding critical food pedagogy, Sumner and Wever (2016) state,

“Such a perspective can counter the neoliberal ideology supporting the current dysfunctional food system and raise critical consciousness about more sustainable alternatives...Critical food pedagogy also involves cultivating an emancipatory approach with respect to food, which can help individuals and social groups develop new types of knowledge that contribute to resistance, greater freedom and agency to shape their world” (Sumner & Wever, 2016, p. 323-324).

Combining critical food pedagogy with positive youth and community development has the potential to equip and empower both individuals and communities to enact positive change in the food system and in society as a whole.

Despite valid critiques, the benefits of engaging youth in food cultivation programs are multifold. To assess academic achievement improvements from school-based garden education programs, D.R. Williams and Dixon (2013) reviewed 48 studies between 1990 and 2010 that measured direct and indirect outcomes on student performance. The authors’ analysis demonstrated that the vast majority of school gardening programs yielded significantly improved outcomes primarily in science, as well as mathematics and language arts. Beyond academic objectives, the authors found commonalities among studies regarding improvements in outcomes including nutrition,

environmental sensitivity, and personal efficacy. However, most of the studies assessed student outcomes in primary education settings, while outcomes for high school students remained the least examined. Furthermore, the authors noted a collective shortfall of research integrity among the suite of studies, citing a general lack of research transparency in regards to methodology, sampling and validity. Moreover, D.R. Williams and Dixon (2013) noted an overall sense of bias in the research, as most of the studies were conducted by researchers who were actively engaged in the field and with an avid interest in the benefits of education through gardening. While the study's outcomes were generally favorable, there is clearly a need for more systematic research in this field.

Fulford and Thompson (2013) examined the impacts of a community garden-based youth internship program in Winnipeg, Canada on youth and community development outcomes. The authors based their assessment on the program's Circle of Courage framework, a youth development model comparable to the framework of the Six Cs, but deeply informed by Native American philosophy and with a direct focus on decolonization and anti-oppression work (Bendtro, Brokenleg & Van Bockern, 1991, 2005 as cited in Fulford & Thompson, 2013), indicating elements of critical food pedagogy. Through semi-structured interviews with youth and staff, as well as observations and film-based participatory research, the authors found that interns gained leadership and job skills, developed a greater sense of self-esteem, experienced improved nutrition and food security, developed a critical understanding of the food system, demonstrated enhanced environmental awareness and sensitivity, and cultivated a deeper connection to their community—all desired youth development outcomes. Interviews with program staff members revealed that these benefits extended to the broader

community, and that the youth interns played a significant role in imparting these benefits—demonstrating the immediate relationship between community youth development programming and positive outcomes on multiple fronts (Fulford & Thompson, 2013). However, including community members' perspectives in this study could have strengthened its conclusions.

Similarly, Broaddus, Przygocki, and Winch (2015) conducted a year-long case study of a youth urban agriculture internship program to assess key program elements for engaging and retaining youth participants, identifying leadership opportunities, authentic relationships, team work and mutual processes of teaching and learning as the most effective components that resulted in positive outcomes. These program elements and results align with the principles and desired outcomes of positive youth development through program involvement, but again only portray short-term outcomes from immediate program experience. Nonetheless, short-term indicators gleaned from studies such as Fulford and Thompson's (2013) and Broaddus et al. (2015) provide a comparative foundation for longer-term studies such as the present one.

One of the longest running studies of youth development outcomes through program participation comes from 4-H, a well-established, nation-wide agriculture-based youth development program. This sequential longitudinal study began in 2002, surveying fifth graders involved in extracurricular youth development programs including 4-H, and assessed outcomes based on the Five Cs (Lerner, Lerner, et al., 2005). The study specifically sought to establish an empirical connection between involvement in community-based youth development programs and PYD outcomes, and to determine how these variables relate to youths' propensity for Contribution. The first wave

demonstrated that both involvement in youth development programs and evidenced PYD indicators were significantly associated with Contribution; however, PYD outcomes were not significantly related to particular youth development programs for this sample (Lerner, Lerner, et al., 2005). The ninth and most recent wave of the study, completed in 2013, included students who participated in at least two years of the study and encompassed participants in grades 5-12 (Lerner & Lerner, 2013). The comprehensive report produced from this study indicated that youth involved in 4-H programs exhibited significantly greater rates of PYD outcomes and rates of contribution than youth enrolled in other extracurricular activities, which were not defined in this wave (Lerner & Lerner, 2013). While this study further corroborates the benefits of continued engagement with agriculture-based youth development programs over longer developmental time frames, it does not assess the impacts of such programs beyond present involvement.

A growing number of Master's theses have pursued the question of how youth agriculture and food education programs can foster critical awareness around food issues. Stinson (2010) explored the potential of incorporating a food-systems focus into high school curricula to promote food literacy in students, finding that the students gained an enhanced understanding of the personal, social and ecological implications of food—particularly when exposed to food studies through different classes utilizing various approaches. In a case study of Toronto's Food Leadership for Youth (FLY) program at The Stop Community Food Center, Goldstein (2014) assessed how participation in the program advanced food literacy in both the neoliberal and critical levels of consciousness. Goldstein (2014, 2016) found that despite the program's intentions to foster a more critical and holistic understanding of food system issues, more practical

skills and knowledge based on individual choice and consumption comprised the primary takeaways for participants. In her study, Wever (2015) expanded and applied a critical food pedagogy framework to assess learning outcomes from participation in School Grown, an integrated, agriculture-based youth employment and school program in Toronto. Her findings indicated that program participation facilitated elements of critical/emancipatory learning with regard to food literacy, although historical/hermeneutic and empirical/analytical food literacy constituted the most prominent outcomes (Wever, 2015). Additional outcomes included improved interpersonal skills, renewed academic engagement and job skills (Wever, 2015). Examining the experiences of returning interns at East New York Farms!, a youth urban agriculture program that employs a similar philosophy to GRuB's, Delia (2014) found that the interns' narratives provided strong evidence of positive youth development outcomes and increased critical consciousness as understood through the lens of a critical pedagogy of place (Gruenewald, 2003).

Relatively few studies in the grey or peer reviewed literature have examined the long-term influences of agriculture-based youth development programs. One follow-up study in the grey literature comes from The Food Project, an agriculture and food justice-based youth empowerment program in Boston. The Food Project curriculum has informed numerous other food and agriculture youth development programs and served as a model from which GRuB drew inspiration for its own distinct program. To assess the long-term outcomes from participation in The Food Project's youth employment program, Brigham & Nahas (2008) conducted interviews with thirty program alumni to identify the most impactful aspects of their internship experience. The alumni had entered

the program at age fourteen or fifteen and were between eighteen and twenty-four years old at the time of the interviews (Brigham & Nahas, 2008). The long-term takeaways that the alumni expressed included a positive work ethic, an empowered sense of leadership, a greater appreciation for diversity, a heightened understanding of social justice issues, a deeper appreciation for food, and an enhanced understanding of sustainable agriculture—although the first five outcomes were most prevalent across interviews (Brigham & Nahas, 2008).

Few follow-up studies on agriculture-based youth programs appear in the peer-reviewed literature as well. Hung (2004) interviewed former interns from East New York Farms!, assessing their connection to place, sense of self, engagement with the community and other salient program impacts between four and six months after their internship experience. The former interns highlighted increased leadership capabilities, greater knowledge and skill in food cultivation, an enhanced and empowered sense of self, and a deeper sense of connection and contribution to their community as a result of the program (Hung, 2004). Sonti et al. (2016) conducted a follow-up study on the same program in New York, surveying fifty alumni who had completed the program one to nine years prior. The variables of assessment included alumni's academic and career paths, levels of civic engagement, as well as their attitudes and behaviors regarding the environment, food, health, community, and sense of self (Sonti et al., 2016). The results of the study demonstrated overall positive impacts in each arena, with interns largely attributing these outcomes to involvement with the program (Sonti et al., 2016). This thesis expands upon this study by extending the timeframe since program participation. Furthermore, this study includes interviews in addition to survey questions, integrating

two forms of follow-up program evaluation used in previous studies (Brigham & Nahas, 2008; Sonti et al., 2016). With this mixed-methods approach, this study sought to gain deeper insight about how respondents' experiences at GRuB may have had a lasting influence on their lives.

As the literature on program evaluations for environmental education and youth development programs indicates an overall paucity of systematically conducted follow-up studies (Carleton-Hug & Hug, 2010; Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; J.L. Roth & Brooks-Gunn, 2016; Stern, Powell, & Hill, 2014), this thesis seeks to address that need. The present study utilizes the survey instrument from the study by Sonti et al. (2016) to provide a basis for comparison, with modifications to make questions specific to GRuB alumni. This study also builds upon the survey instrument to assess current beliefs about and levels of engagement with issues related to food systems and the environment. Because youth development programs must be examined in context (J.L. Roth & Brooks-Gunn, 2016), it is important to assess how programs with similar practices and objectives relate through different geographic, social and cultural frames of reference. Moreover, the relative lack of retrospective studies that specifically assess how community-based urban agriculture programs influence long-term youth development outcomes, as well as critical consciousness regarding environmental and food system issues, necessitates further research and substantiates the present study.

Conclusion

To conclude, this literature review provided an overview of the history, development, goals and critiques of environmental education to establish a conceptual foundation for this study. This review then provided an overview of the philosophies and

evolution of food cultivation education, which includes garden, farm, agriculture and urban agriculture education, and described the parallels to environmental education and GRuB's youth program. A discussion of food systems education followed, with a focus on the theoretical and practical framework of critical food pedagogy as measured by the three domains of food literacy. This review then discussed the principles of positive youth development and community youth development to establish a conceptual basis of youth development philosophies, with PYD serving as an additional analytical framework for this study. Finally, this chapter reviewed the relevant research on agriculture-based youth development programs, describing how they form a comparative basis for this study, as well as how this thesis will build upon the existing literature. The methods for assessing the long-term outcomes from participation in GRuB's youth program will be discussed in the following chapter. The results will be examined through the complementary lenses of critical food pedagogy (operationalized through the benchmarks of food literacy) and the Six Cs of positive youth development.

Chapter 4: Methods

This study follows the research tradition of retrospective program evaluation, a common approach in long-term environmental education studies (Liddicoat & Krasny, 2013). According to Liddicoat and Krasny (2013), "...Retrospective evaluation research focuses on a clearly defined experience, and in cases where memory research is included in such studies, often goes deeper than the general EE program to focus on the specific activities," (292). In carrying out this study, a convergent parallel mixed methods design was employed (Creswell, 2014), using surveys and semi-structured interviews conducted with former participants in GRuB's youth program. A mixed method study design incorporates both quantitative and qualitative modes of inquiry, which together allow for a more holistic understanding of a research question by obtaining, analyzing and comparing data from various perspectives (Creswell, 2014). A convergent parallel mixed methods design implements simultaneous quantitative and qualitative data collection, in which:

"...A researcher collects both quantitative and qualitative data, analyzes them separately, and then compares the results to see if the findings confirm or disconfirm each other. The key assumption of this approach is that both qualitative and quantitative data provide different types of information—often detailed views of participants qualitatively and scores on instruments quantitatively—and together they yield results that should be the same," (Creswell, 2014, p. 219).

This study design was implemented in order to gain an enhanced understanding of the most salient and impactful aspects of GRuB's youth program in the four arenas of environment, food, community and self. The quantitative survey approach sought to reveal how those perspectives may relate or differ based on program format and duration of program involvement, among other variables. By incorporating a qualitative element

through semi-structured interviews, this study aimed to garner more personal, context-based perspectives from participants' experiences. Taken together, this study then examined how the significant findings from the survey analysis related to the conclusions drawn from qualitative analysis.

From 1999 until 2011, GRuB's Cultivating Youth Employment Program (CYEP) ran after school and on Saturdays as a job training, dropout prevention and youth empowerment program. The current GRuB school program was initiated in 2011 as an alternative high school day program in partnership with the Olympia School District, which still incorporates many job-training and personal development aspects of the CYEP—particularly in the summer program. GRuB School is an extension of the CYEP in that it provides an expanded, food justice-oriented curriculum that aligns with Washington's Career and Technical Education frameworks, thereby enabling students to earn core high school credits.

Due to the necessity to reach alumni who were at least eighteen years old, as well as the relative newness of the GRuB School program, outreach efforts included alumni from both program formats. This strategy not only maximized the sample pool and potential response rate, but also allowed for a comparison of the two program formats. Comparing alumni's responses from the CYEP and GRuB School provided insight about how changes in the youth program structure and curriculum may have influenced participants' experiences.

Sampling and Recruitment

A multifaceted, multi-phased, purposive sampling strategy was utilized for this study. In order to be eligible to participate, alumni had to be eighteen years of age or

older, have completed at least one summer or academic semester in either GRuB School or the CYEP, and not be currently employed at GRuB. These inclusion criteria were chosen to maximize the sample pool for this study and to assess how different forms of program involvement influence the perceived lasting impacts. Alumni who met the inclusion criteria were identified utilizing GRuB's records of youth program participants. Recruitment efforts were focused on GRuB alumni from or before the 2014 cohort to ensure that participants would be eighteen or older. However, some alumni from the 2015 and 2016 cohorts were eighteen years old and opted to participate.

Eligible participants were cross-referenced in the organization's database to obtain contact information. A master spreadsheet of eligible participants was created in Microsoft Excel with accompanying contact information, if available. Alumni for whom contact information was available were recruited by email and/or phone using the information from the database. Those who were recruited by phone were asked for a current email address and sent a link to the survey along with a recruitment flyer that provided more information about the study. However, some contact information proved to be out of date, which has been identified as a common difficulty in conducting program follow-up studies (Sonti et al., 2016). Respondents who completed the survey received a \$20 gift card of their choosing, delivered either by e-mail or postal mail. At the end of the survey, respondents could indicate whether they would be willing to participate in a thirty- to sixty-minute interview for an additional \$30 gift card, and if so, to provide contact information. Research expenses were covered by the researcher's personal education savings fund.

In an effort to overcome missing or inaccurate contact information for alumni,

social media was used as an additional recruitment strategy. Announcements about the study were posted in GRuB's alumni Facebook group along with the recruitment flyer and a link to the survey. Additionally, in an effort to minimize response bias, individuals on Facebook whom could be verified as alumni but were not a part of the alumni Facebook group were direct messaged with a link to the survey. Kim Gaffi, GRuB's co-founder and current Director of Youth Programs, conducted initial outreach through email and social media, and she and other GRuB staff provided substantial support with follow-up recruitment efforts.

The survey was active from January 11th to March 4th, 2018. Of 304 alumni in the database, 276 were eligible to participate. Of those eligible alumni, 187 were successfully contacted. Forty-five respondents submitted the survey, yielding a reasonable 24% response rate. A total of nineteen interviews were conducted from the pool of respondents. Evergreen's Institutional Review Board approved this research for ethical conduct prior to initiating the study.

Data Collection Procedures

Survey.

The survey instrument derived from a follow-up study on a youth internship program in Brooklyn, New York that shares a similar philosophy and mission to GRuB's on agriculture-based youth and community development (Sonti et al., 2016; also see Falxa-Raymond & Campbell, 2013). The researchers who designed the survey granted permission to utilize and adapt the instrument for this study. Elements of the instrument were modified to tailor the survey to GRuB's program, and additional questions about issues related to food and the environment were developed to gain a more comprehensive

understanding of alumni's beliefs about and participation in such matters. The survey was built and administered online using Google Forms.

Interviews.

Interviewees were selected on a first-come, first-serve basis from respondents who completed the survey and indicated interest in participating in an interview. Due to timing constraints, the total number of interviews was limited to nineteen. While a randomized selection of interviewees after closing the survey may have been more favorable, the relatively short timeline for completing the study necessitated a continuous interview process while the survey remained active to allow adequate time for transcription, coding and analysis. Interviewees were contacted by phone and/or email using the information they provided on the survey form. Interviews were conducted by phone or in person. Each interview was audio-recorded using built-in iPhone recording software and transcribed verbatim.

Measures

Survey.

Dependent variables

A total of thirty questions comprised the survey instrument, consisting of quantitative multiple-choice questions, Likert-type scales, and open-ended quantitative and qualitative questions. Adapted from those implemented by Sonti et al. (2016), the survey questions inquired about alumni's involvement with GRuB, their education, career paths, and recreational activities, as well as levels of general civic engagement. The *Food, Health and Environment; Community; Self; and Communication and Decision-Making* scales from Sonti et al.'s (2016) survey sought to measure alumni's attitudes and

behaviors within these realms with Likert-type rankings of Never, Rarely, Every Once in a While, Sometimes, and Often. For the purposes of this study, the *Food, Health and Environment* scale was slightly modified to include only Food and Environment measures; as a result, one item from the original instrument (“I am physically active”) was excluded from this survey.

Sonti et al.’s (2016) survey provided an ample opportunity to quantitatively measure positive youth development outcomes (PYD) through the items in the *Community, Self and Communication and Decision Making* scales. In addition, the *Food and Environment* scale provided a means to assess the empirical/analytic domain of food literacy with regard to critical food pedagogy. New survey items were developed to create the *Food and Environmental Policy Beliefs* scale, which aimed to measure alumni’s beliefs about and engagement with issues related to food and environmental policy, sustainability and justice. This scale reflects the historical/hermeneutic and critical/emancipatory domains of food literacy, as critical food pedagogy and food literacy encompass practical knowledge along with broader cultural and critical awareness (Goldstein, 2016; Sumner & Wever, 2016; Wever, 2015). However, it is important to note that this scale placed most emphasis on the critical/emancipatory domain of food literacy. The *Food and Environmental Policy Beliefs* scale implemented five-point Likert scale measurements that ranged from Strongly Disagree to Strongly Agree, with Neutral serving as the middle ground. Although previous researchers have argued that quantitative assessments of food literacy can render over-simplified analyses of the data (Goldstein, 2014, 2016), the mixed-methods approach employed in this study provides a more comprehensive examination of food literacy due to the combined

quantitative and qualitative perspectives.

In addition, the *Food and Environmental Civic Engagement* scales were developed to assess alumni's participation in food and environmental issues based on activities in the scale measuring general civic engagement. Sonti et al. (2016) adapted the general civic engagement measures from Fisher et al. (2011, as cited in Falxa-Raymond & Campbell, 2013), and in turn these measures were derived from a compilation of common national surveys on civic participation (Falxa-Raymond & Campbell, 2013). However, while the general *Civic Activity* scale measured civic participation in the last twelve months, the *Civic Engagement in Relation to Food and Environment* scales utilized the Likert-type rankings of Never, Rarely, Every Once in a While, Sometimes, and Often to obtain a more fine-grained assessment of how frequently alumni engage with these issues. See Appendix A for the full version of the administered survey, with annotations indicating scale items removed through inter-item reduction analysis.

Independent variables

The independent variables assessed in this study included socio-demographic controls such as age, gender, race, low-income background, and education, as well as programmatic variables including program type, duration of program involvement, whether or not alumni returned in a leadership position, and number of years since program involvement. Although additional employment opportunities within the organization were at times available to alumni, this study only included the Peer Crew Leader and Farm Assistant positions for statistical analysis, as these positions work most directly with the youth program. Race and ethnicity were initially measured using categories from a proposed 2020 Census revision (Cohn, 2016). However, race was

collapsed into a binary variable for statistical analysis (white and racially diverse), as there were not enough responses in each of the racial categories to assess them all independently. The racially diverse category encompasses people of color as well as mixed race people¹. The full list of racial categories can be found on the survey in Appendix A.

In evaluating levels of civic engagement related to food and the environment, composite scores for general civic engagement were also included as an independent variable. Including general civic engagement as an explanatory factor in these two regression models seemed appropriate, as alumni's propensity for public participation in a broader sense would likely influence their level of engagement with food and environmental issues.

A significant body of research has demonstrated an association between certain socio-demographic variables and environmental attitudes. For example, younger individuals, females, whites, and people with higher educational attainment have been shown to exhibit greater environmental concern as measured by the New Ecological Paradigm Scale, a standardized measure of environmental attitudes (Liere & Dunlap, 1980; McMillan, Hoban, Clifford, & Brant, 1997). PYD research has not yet determined distinct relationships between socio-demographic variables and PYD outcomes, as the context-based interactions among individuals, programs and other socio-environmental factors play a significant role in determining what and how PYD outcomes are fostered (J.L. Roth & Brooks-Gunn, 2016), and as PYD outcomes can be subject to different cultural interpretations (J.L. Williams & Deutsch, 2015). However, research has

¹ The researcher recognizes the limitations of categorizing race in binary terms and apologizes for any inadvertent misrepresentation. The terminology was chosen in an effort to avoid perpetuating white-centered categorizations of race (i.e. "non-white"), as recommended by Madowitz & Boutelle (2014).

demonstrated that youth at greater risk, as determined by socioeconomic status, race, ethnicity and academic performance among other factors, tend to benefit more from participation in PYD programs (J.L. Roth & Brooks-Gunn, 2016).

It is also important to consider programmatic variables to determine whether differences in program structure and/or participation influence various PYD outcomes and environmental attitudes. For example, Sonti et al. (2016) found that differences program curriculum influenced the *Food and Environment* composite scores of the alumni in their study. In addition, the researchers found that duration of program involvement influenced alumni's *Communication and Decision-Making* scores (Sonti et al., 2016). Table 2 presents the independent control variables measured in this study and the formats in which they were analyzed. Table 3 displays the programmatic independent variables considered.

Table 2: Independent control variables

Variable	Format
Gender	Binary (0 = Male or other gender identity, 1 = Female)
Race	Binary (0 = White, 1 = Racially diverse)
Low-income Background	Binary (0 = No / Prefer Not to Say, 1 = Yes)
Educational Attainment	Ordinal (3 = Bachelor's degree or higher; 2 = Associates degree or certificate program; 1 = High School or GED; 0 = None yet completed)
Age	Continuous
General Civic Engagement (used only to analyze Civic Engagement in relation to food and the environment)	Continuous (Check all that apply; composite score calculated from civic activities checked)

Table 3: Independent programmatic variables

Variable	Format
Program Type	Binary (0 =CYEP, 1 = GRuB School)
Length of Time in Program	Categorical (0 = one summer; 1 = one academic semester; 2 = two academic semesters; 3 = one summer and one semester; 4 = Full year (one summer and two semesters))
Years Since Program Involvement	Ordinal (0 = 2-5 years; 1 = 6-10 years; 2 = 11-14 years; 3 = 15+ years)
Returning Position	Binary (0 = No, 1 = Yes)

Interviews.

Semi-structured interviews were conducted to obtain more nuanced perspectives of the long-term takeaways from participation in GRuB’s youth development program.

The interviews provided a deeper understanding of the direct relationship between alumni's experiences at GRuB and the perceived lasting influences on their lives. The interview protocol consisted of eleven sets of questions, some of which included additional sub-questions to guide the interview process and to facilitate clarification or elaboration of responses.

The interview questions were organized thematically, covering the four areas of interest in this study—environment, food, community and self. Some interview questions were drawn from the open-ended survey questions found in Sonti et al., (2016) [see Falxa-Raymond & Campell (2013) for the original, expanded evaluation and survey instrument in full], and others were inspired by Wever (2015). Introductory and concluding questions sought to acquire more general information about alumni's experiences, including why they joined the GRuB program they participated in, how long they were involved, and what the most salient aspects of program participation were in general. Overall, the interview questions were developed to assess how involvement in GRuB's programs may have resulted in long-term changes in alumni's outlooks, behaviors and engagement on personal, social and broader societal levels. Qualitative variables of interest included reported instances of personal development, enhanced connection to community, and greater awareness of and involvement with issues related to the environment and food. See Appendix B for the interview protocol.

Data Analysis

Surveys.

Following Sonti et al. (2016), Cronbach's alpha was calculated for each set of questions from the *Food and Environment*, *Community*, *Self*, and *Communication and*

Decision-Making scales to evaluate the reliability of each scale as applied to the sample in this study. Inter-item reduction analysis was performed to obtain the strongest Cronbach's alpha score for each scale. Sonti et al. (2016) previously reported Cronbach's alpha scores of 0.71 for *Food, Health and Environment*; 0.52 for *Self*; 0.78 for *Community*; and 0.69 for *Communication and Decision-Making*. Cronbach's alpha scores for the same scales in this study were 0.79, 0.82, 0.78, and 0.78, respectively. The higher Cronbach's alpha scores in the present study indicate greater reliability of each scale with this sample. Composite scores for each section were then calculated from the remaining items that comprised the most reliable scales.

**Table 4: Descriptive statistics for dependent variables
(N = 45 unless otherwise noted)**

<u>Scale</u>	<u># of items</u>	<u>Cronbach's</u>		<u>Range</u>	<u>Mean</u>	<u>SD</u>
		<u>alpha</u>	<u>n</u>			
Food and Environment	5	0.79	45	5-25	23.73	1.92
Community	9	0.78	45	9-45	36.51	5.78
Self	12	0.82	45	12-60	54.04	5.44
Communication and Decision Making	6	0.78	45	6-30	26.67	3.59
Food and Environmental Policy Beliefs (N = 44)	12	0.87	44	12-60	55.27	5.03
Food Civic Engagement (N = 44)	14	0.92	44	14-70	29.70	10.87
Environmental Civic Engagement (N = 40)	14	0.94	40	14-70	26.60	11.47

Inter-item reduction analysis was also performed on the *Food and Environmental Policy Beliefs*, *Food Civic Engagement*, and *Environmental Civic Engagement* scales to obtain the most dependable measures, and composite scores were calculated from the most reliable items in each scale (see Table 4). It is important to note that the high Cronbach's alpha scores for both the *Food and Environmental Civic Engagement Scales* may be indicative of redundancy among the questions asked, as well as the large number of items in the scale (Tavakol & Dennick, 2011). However, the removal of any items did not lower the score below 0.90, the suggested maximum (Tavakol & Dennick, 2011).

A series of independent samples t-tests and one-way analysis of variance

(ANOVA) were performed to determine significant differences in the dependent variables based on several independent variables, including gender, level of education, program type (CYEP or GRuB School), and whether or not alumni returned in a leadership position. Mean composite scores between GRuB School and CYEP participants were also compared utilizing an independent-samples t-test. Last, a series of multiple linear or logistic regression models were estimated for each of the dependent variables. Diagnostics were performed on each regression model to assess whether the model met the assumptions of regression. Specifically, each model was analyzed for multicollinearity, normality of error, and equality of error variance. Overly correlated independent variables were identified and some were removed from the model. In this case, Age, Program Type and Years Since Program Involvement were highly correlated. As this study aims to assess the sustained impacts of program participation, Years Since Program Participation was kept and Program Type and Age were removed from the models. The only two models that did not meet the assumptions of regression were the *Food and Environment* and *Communication and Decision-Making* scales. For these models, the composite scores were transformed into ordered categories according to the quartile values of each distribution and ordinal logistic regression models were estimated. Statistical analysis was performed using JMP software. An alpha value of 0.05 served as the significance level for all statistical tests.

Interviews.

All interviews were transcribed verbatim for analysis, including fillers and intonations. Qualitative data analysis took the form of a closed coding approach, as the overarching research question for this study specifically sought to analyze the long-term

impacts of GRuB's youth program on alumni's attitudes toward, and connection to, the environment, food, community and self. Moreover, the sub-research questions of this study aimed to assess the extent to which participation in GRuB's youth program fostered critical consciousness around issues related to food and the environment in addition to positive youth development outcomes. As such, this study was designed with pre-set themes and indicators based on the food literacy benchmarks of critical food pedagogy (Goldstein, 2014, 2016; Wever, 2015) and the Six Cs framework of positive youth development (Lerner, Lerner, et al., 2005; Pittman et al., 2000). This approach did not preclude the emergence of new themes, as the coding process allowed for patterns that had not been previously determined to arise.

Prior to initiating coding, all transcripts were reviewed to provide a neutral baseline and general perspective of the content. Each transcript was then examined in greater depth, and the broad themes of Environment, Food, Community and Self served as the starting points for generating codes. Within those themes, quotations that pointed to evidence of positive youth development and critical food pedagogy were identified and coded respectively. This closed coding process elucidated the most prominent themes regarding how former GRuB program participants felt the program had or had not influenced their lives, their relationship to community, and their environmental worldviews. The primary findings from the interviews were then compared to the survey results to assess how the two datasets supported or contradicted one another.

Chapter 5: Quantitative Results

Descriptive statistics for the socio-demographic characteristics of this sample are reported in Table 5. Of the forty-five alumni who responded to the study, twenty-eight identified as female (62%), sixteen identified as male (36%), and one respondent identified as another gender identity (2%). Twenty-eight respondents identified as white (62%) and seventeen respondents identified as a person of color and/or mixed race (38%), a breakdown that reflects the general population of Thurston County. The respondents' ages ranged from eighteen to thirty-five years old, with an average age of twenty-five. Forty-one respondents (91%) identified as coming from a low-income background, a logical outcome considering that GRuB's program has primarily served low-income youth. As for educational attainment, eight respondents had completed a Bachelor's degree or higher level of education (18%), twelve had completed an Associates degree or certificate program (27%), twenty-two had earned a high school diploma or GED (49%), and three had not yet completed high school or a GED program (7%).

**Table 5: Descriptive statistics for participant demographics
(n = 45 unless otherwise noted)**

<u>Variable</u>	<u>Categories</u>	<u>N</u>	<u>%</u>
Gender	Female	28	62%
	Male	16	36%
	Other gender identity	1	2%
Race	White	28	62%
	Racially diverse	17	38%
Low-income Background	Yes	41	91%
	No / Prefer not to say	4	9%
Educational Attainment	Bachelor's degree or higher	8	18%
	Associates degree or certificate program	12	27%
	High school or GED	22	49%
	None yet completed	3	7%
Age (n = 43)	Minimum	18	
	Maximum	35	
	Mean	25	
	Range	23	

Descriptive statistics for the programmatic characteristics of the survey respondents are displayed in Table 6. CYEP alumni comprised a slight majority in this sample (60%) as compared to GRuB School alumni (40%), which is reasonable considering that the GRuB School Program is new relative to CYEP. The greatest percentage of respondents were only involved in the program for one summer (38%), while 33% had completed a full year. Nine respondents participated for one summer and one academic semester (20%), and four participated for only two academic semesters (9%). As for time since program involvement, the data indicated a fairly even representation of the program's evolution. Fifteen respondents had participated in the

program two to five years prior (33%), eleven had participated six to ten years prior (24%), eleven had participated eleven to fourteen years prior (24%), and eight had participated fifteen or more years prior (18%). Fifteen respondents returned as a Peer Crew Leader or Farm Assistant in a subsequent year (33%).

Table 6: Descriptive statistics for program participation (n = 45)

<u>Variable</u>	<u>Categories</u>	<u>N</u>	<u>%</u>
Program Type	Cultivating Youth (1999-2010)	27	60%
	GRuB School (2011-2016)	18	40%
Length of time in program	One summer	17	38%
	One academic semester	0	0%
	Two academic semesters	4	9%
	One summer and one academic semester	9	20%
	Full year	15	33%
Years since program involvement	2-5 years	15	33%
	6-10 years	11	24%
	11-14 years	11	24%
	15+ years	8	18%
Returning position	Yes	15	33%
	No	30	66%

The quantitative portion of this study aimed to examine how different socio-demographic and programmatic variables were related to alumni’s sustained attitudes toward and connection to the environment, food, community and self. Specifically, the survey sought to determine explanatory factors that significantly correspond to critical food pedagogy and positive youth development outcomes. The *Food and Environment*

scale contained measures relevant to the empirical/analytic domain of food literacy, while the *Food and Environmental Policy Beliefs* scale included measures primarily relevant to critical/emancipatory food literacy, and to a lesser extent historical/hermeneutic food literacy—all of which are encompassed in the theoretical framework of critical food pedagogy. In addition, the *Community, Self,* and *Communication and Decision-Making* scales were comprised of PYD indicators linked to the Six Cs: Confidence, Competence, Character, Connection, Caring and Contribution.

Descriptive Statistics

Food and environment: Indicators of critical food pedagogy.

The data indicate that GRuB alumni overall maintain strong empirical/analytic food literacy skills and generally positive attitudes toward food and the environment. Ninety-six percent of the alumni surveyed reported having a good idea of where their food comes from, eating fruits and vegetables, and trying to reduce waste sometimes or often. Ninety-three percent of alumni reported cooking sometimes or often, and 98% of alumni reported caring about nature and the environment sometimes or often. Interestingly, 55% percent of alumni reported that they still garden sometimes or often. For the item “I eat fast food,” 75% percent of alumni indicated doing so every once in a while, rarely or never.

Alumni also exhibited some historical/hermeneutic food literacy, although the survey did not emphasize this domain. However, 82% of alumni agreed or strongly agreed that all people should have access to culturally appropriate food, which is a core aspect of the historical/hermeneutic domain of food literacy. The respondents further

demonstrated a fairly high level of critical/emancipatory food literacy through their survey responses, though the data most strongly support empirical/analytic food literacy. For example, 87% of the alumni surveyed agreed or strongly agreed that the dominant industrial food system has serious negative environmental consequences, while 71% agreed or strongly agreed that organic agriculture is always more sustainable, even on an industrial scale. While organic standards prohibit the use of most synthetic pesticides and fertilizers, industrialized organic agriculture can still perpetuate social and environmental problems including labor and pollution concerns, especially when co-opted by the same large corporations that dominate conventional food (Guthman, 2004). Nonetheless, 84% of respondents agreed or strongly agreed that they were concerned about the rights of farmworkers, indicating a critical/emancipatory understanding of social issues embedded in the food system. Furthermore, 95% of alumni agreed or strongly agreed that equal access to healthy food is a current problem in our society, and 91% agreed or strongly agreed that agriculture, social justice and environmental health are all connected, further exhibiting critical/emancipatory awareness of food system issues.

Interestingly, 64% of alumni agreed or strongly agreed that consumer choice is the best way to influence food policy, reflecting what Goldstein (2014, 2016) refers to as the neoliberal consciousness paradigm. At the same time, 84% agreed or strongly agreed that activism is important for food policy change and 93% agreed or strongly agreed that collective action creates the most effective change, indicating a broader, critical consciousness about leveraging change in the food system. Indeed, these approaches are not mutually exclusive, and informed, collective consumer decisions can instigate food system change (Friedland, 2008; Jaffe & Gertler, 2006). In addition, 96% of alumni

agreed or strongly agreed that all people should have an equal opportunity to participate in decision-making processes about their food systems, which further demonstrates critical/emancipatory food literacy in terms of understanding the importance of democratic participation in food systems. Table 7 presents descriptive statistics of alumni's top issues of concern related to food and the environment. Equal access to healthy food represented the most prevalent concern, with 89% of alumni selecting this response. Farmworkers' rights represented the second-most identified issue of concern (42%), and creating more localized food systems rounded out the sample's top three primary issues of concern (29%).

Table 7: Food and Environmental Issues of concern*

<u>Issue</u>	<u>n</u>	<u>%</u>
Equal access to healthy food	40	89%
Farmworkers' rights	19	42%
Creating more localized food systems	13	29%
Reducing corporate influence over food policy	10	22%
Increasing educational opportunities about the environment and food system	10	22%
Reducing corporate influence over environmental policy	9	20%
Government support for small and mid-size farmers	6	13%
Government support for sustainable farming practices	6	13%
Increasing opportunities for public participation in food systems	5	11%
Reducing agriculture's impact on climate change	5	11%

*Respondents could select up to three responses, so the total percentage exceeds 100%

However, when it comes to civic engagement in food and environmental issues, the data were largely skewed toward minimal participation. The mean composite score for *Food Civic Engagement* amounted to 30 out of a possible score of 70, while the mean composite score for *Environmental Civic Engagement* came to 27 out of a possible score of 70 (see Table 4 in previous chapter). These results suggest that while GRuB alumni possess a reasonably high level of critical/emancipatory awareness about food and environmental issues, this does not necessarily translate into political praxis.

PYD outcomes.

Community

On the whole, respondents demonstrated fairly strong evidence of sustained PYD outcomes. Fifty-three percent of the survey respondents reported taking leadership roles in their community sometimes or often, which demonstrates Confidence and Competence. Forty-nine percent reported participating in community activities sometimes or often, which indicates Connection and Contribution. Notably, 84% of alumni reported feeling connected to a larger community sometimes or often, and 69% reported never or rarely feeling disconnected from the people around them—both of which strongly support a sustained capacity for Connection on an interpersonal and larger institutional level. In addition, 98% of alumni reported feeling comfortable interacting with people of different races, genders and abilities sometimes or often, demonstrating a strong, collective value for diversity, which is an indicator of Character (Lerner, Lerner, et al., 2005). Moreover, 82% of alumni reported feeling capable of making change in their community and beyond, which further supports an overall sense of Confidence and Competence within the sample.

Self

Respondents also demonstrated a generally positive concept of self. Ninety-one percent of alumni considered themselves to be good leaders and believed they have a lot to be proud of sometimes or often, and 82% reported feeling good about themselves sometimes or often. However, only 54% of alumni reported never or rarely having low self-esteem, which indicates that levels of self-confidence can waver. Nonetheless, 76% of alumni reported feeling like they have a sense of purpose in life often, which is a significant indicator of Confidence. In addition, 70% reported often feeling motivated at

work and/or school, which demonstrates sustained characteristics of Competence and Character. Furthermore, the majority of alumni reported often enjoying new experiences, whether learning new information (84%), learning new skills (91%), or trying new things (84%), which the literature identifies as important developmental assets (Lerner, Lerner, et al., 2005).

Communication and decision-making

The alumni surveyed also reported strong communication and decision-making skills. Ninety-three percent view themselves as good communicators sometimes or often, and 91% feel comfortable discussing difficult decisions with friends or adults sometimes or often, which demonstrates a collective sense of social and cognitive Competence. In addition, 80% of alumni reported feeling comfortable talking issues out with others when they get upset, which further demonstrates a strong capacity for social Competence. Furthermore, 76% of alumni often consider multiple viewpoints and perspectives before making a decision, while only 2% of alumni often let peer pressure influence their decisions, which provides additional evidence for a high level of cognitive Competence among the group. Moreover, 91% of alumni reported speaking up or taking action when they see a problem sometimes or often, while the remaining 9% reported doing so every once in a while. The reportedly high frequencies of speaking out or taking action against observed problems demonstrate a solid sense of Confidence, Competence, Caring and Contribution within the sample. The following sections will statistically unpack the potential explanatory factors that may contribute to sustained critical food pedagogy and PYD outcomes.

Inferential Statistics

Independent samples t-tests.

Statistical analysis began by examining each independent variable in relation to each dependent variable: in this case, the relationship between each socio-demographic and programmatic variable and the composite scores detailed in Table 4. A series of independent samples t-tests were conducted to assess significant differences in composite scores according to gender identity, race, low-income background, and program type (CYEP or GRuB School). Neither gender identity nor program type exhibited a significant relationship with any of the composite scores. This finding stands in contrast to previous studies that have shown females to have more favorable environmental attitudes (Liere & Dunlap, 1980; McMillan et al., 1997), as well as the study by Sonti et al. (2016), which found that females in their sample were more likely to have lower *Self* scores. In addition, Sonti et al. (2016) determined that changes in program curriculum subsequently corresponded to higher *Food and Environment* scores. The *Food and Environment* mean composite scores for CYEP and GRuB School alumni both amounted to 23.7 out of a possible total of 25. That the two program formats showed no significant differences in any of the mean composite scores suggests that the program has fostered consistent outcomes for its youth participants, despite changes in curriculum and structure.

In examining variation in mean composite scores based on race, the only significant difference appeared in the *Communication and Decision-Making* scale. The mean score for alumni who identified as white ($M = 27.36$, $SD = 3.14$) differed significantly than the mean score for alumni who identified as a person of color and/or

mixed race ($M = 25.53$, $SD = 4.08$), $t(1) = 1.69$, $p = 0.049$. These results are presented in Table 8.

Table 8: Independent samples t-test for Communication & Decision-Making and Race

	Race								
	Total sample				Racially diverse		White		Prob > t
	Mean	Min	Max	SD	Mean	SD	Mean	SD	
Communication & Decision-Making	26.67	16	30	3.59	25.53	4.08	27.36	3.14	0.049

However, it is important to note that common PYD constructs may not manifest in the same way across different races, ethnicities and cultural backgrounds. It is well established that communication styles differ across cultures (Mindell, 2014). As J.L. Williams and Deutsch (2015) explain,

“...A youth’s racial and/or ethnic background as a characteristic of the youth can directly influence the interactions the youth has in a [youth development program] (e.g., program culture that is aligned, or not, with a youth’s racial or ethnic cultural norms and expectations) which then may increase or reduce the potential effects of that program on youth development” (205-206).

As such, these results do not necessarily indicate that alumni in the racially diverse group are less capable of communication and decision-making, as this difference may be attributed to contextual differences that the survey did not capture.

A Welch’s t-test, which accounts for unequal variances and unequal sample sizes, revealed a statistically significant difference in mean composite scores for the *Self* scale between alumni who identified as coming from a low-income background ($M=53.81$, $SD=5.63$) and those who did not or preferred not to say ($M=56.50$, $SD=1.29$), $t(1)=2.47$,

p=0.023. Research on the relationship between self-esteem and growing up in poverty supports this finding, as the experience of chronic stress associated with poverty in adolescence has been linked with lower self-concept in adulthood (Mossakowski, 2015; Orth, 2017). Nonetheless, the alumni identifying as coming from a low-income background averaged a reasonably high composite score (53.81 out of 60). These results are presented in Table 9.

Table 9: Welch's t-test for Self and Low-income background

	Low-income background								
	Total sample				Yes		No/Prefer not to say		Prob > F
	Mean	Min	Max	SD	Mean	SD	Mean	SD	
Self	54.04	36	60	5.44	53.81	5.63	56.50	1.29	0.023

Analysis of variance tests.

A series of one-way ANOVA's were conducted to assess differences across educational attainment, length of time in the program, and years since program involvement on each of the composite scores. No significant mean differences were detected for educational attainment or length of time in the program. An initial significant mean difference arose in examining the relationship between years since program involvement and *Self* scores—however, the groups displayed unequal variances, and a Welch's ANOVA did not reveal any significant mean differences.

Regression models.

After analyzing significant relationships among each of the independent and dependent variables in isolation, a series of regression models were generated.

Regression models estimate the relationship of each independent variable with a dependent variable, holding all other factors constant. Because the *Food and Environment* and *Communication and Decision-Making* scales did not meet the assumptions of regression, ordinal logistic regression was used instead of linear regression. The composite scores for these two variables were collapsed into ordered categories ranked low, medium and high based on their relative distributions. Table 10 presents the ordinal logistic regression models, and odds ratios are reported. In this analysis, any statistically significant coefficient that is greater than one signifies that the variable corresponds with a greater likelihood of having a lower composite score, while significant coefficients less than one indicate that the variable corresponds with a greater likelihood of having a higher composite score².

The ordinal logistic regression model of the *Food and Environment* scale revealed participation in the summer program as a significant factor. Alumni who participated only during the academic year were almost nine times more likely to have a lower composite score (odds ratio: 8.864) than alumni who participated in the summer program only. This is a logical outcome, as youth spend more hours on the farm during the summer, which provides more direct experience with food in the environment. Although not statistically significant, it is interesting to note that regardless of how long alumni were involved in the program, those who participated in the summer were more likely to score higher on the *Food and Environment* scale than alumni who participated only

² It is important to note that different statistical programs use slightly different parameters to compute ordinal logistic regression coefficients and odds ratios, which affects interpretation. Typically, odds ratios above one are interpreted as the likelihood of a variable ending up in a higher category, while odds ratios less than one are interpreted as the likelihood of a variable ending up in a lower category (i.e. with SPSS and Stata). However, for SAS statistical programs, including JMP, the interpretation is reversed. See Grace-Martin (2013) for a detailed explanation.

during the academic year based on their relative odds ratios. It is important to note that small sample sizes can mute potentially significant effects that would appear were the sample size larger (du Prel, Hommel, Röhrig, & Blettner, 2009). In addition, statistical significance does not always correspond with practical significance, as large sample sizes can produce statistically significant results that do not carry much meaning in the real world applications (Whitlock & Schluter, 2015). As such, it is important to also consider confidence intervals when evaluating the significance of data, which takes into account the magnitude of the effect, and whether that effect occurs within the probable range of values for the entire population (du Prel et al., 2009; Whitlock & Schluter, 2015).

With this in mind, several additional factors hovered just above the threshold demarcating statistical significance (around or below 0.08, but above 0.05). Returning Position emerged as a nearly significant factor, with a p-value of 0.068 and an odds ratio of 0.463, 95% CI [0.198, 1.000]. While the confidence interval does overlap with 1, or the null value, indicating a lack of statistical significance, Szumilas (2010) states that, “Nevertheless, it would be inappropriate to interpret an [odds ratio] with a 95% CI that spans the null value as indicating evidence for lack of an association between the exposure and outcome,” (227). In other words, despite not being statistically significant, alumni who returned in a summer leadership position were about 54% more likely to have higher scores on the *Food and Environment* scale. This is a logical outcome, as leadership positions typically occur during the summer. As the summer program involves the most intensive hands-on farm experience during the peak of the season, these results point to the value and salience of experiential learning over the long-term. In addition, respondents who identified as female were about 45% more likely to have higher *Food*

and Environment scores at a level of near-significance (odds ratio: 0.541, $p=0.085$), 95% CI [0.253, 1.091]. Unlike the t-tests discussed earlier, the result from this regression model corresponds with previous research that has found that females are more likely to uphold positive environmental attitudes (Liere & Dunlap, 1980; McMillan et al., 1997).

Ordinal logistic regression for *Communication and Decision-Making* also revealed some interesting associations. Years since program participation emerged as an influential variable. Alumni who had been out of program for fifteen or more years were nearly ten times more likely to have lower composite scores for this scale (odds ratio: 9.836) than alumni who had been out of the program for eleven to fourteen years. This indicates a possible fifteen-year threshold for sustained improvements in communication and decision-making skills, although a conclusive determination cannot be drawn from the data.

However, a near-significant relationship also arose between alumni who had been out of the program between eleven and fourteen years and those who had been out for six to ten years that confounds the previous finding. Alumni in the eleven to fourteen-year range were about 82% more likely to score higher on the *Communication and Decision-Making* scale than alumni in the six to ten-year range (odds ratio: 0.184) at a p -value of 0.078, 95% CI [0.026, 1.122]. This indicates a non-linear relationship between years out of the program and relative scores for this scale. Educational attainment also arose as a significant variable, wherein alumni who had earned an Associate's degree or job training certificate had 93% greater odds of scoring higher on the *Communication and Decision-Making* scale. This is a logical outcome, as post-secondary education provides further opportunity to hone these skills.

Table 10 displays the ordinal logistic regression model results. For ordinal logistic regression, McFadden's pseudo R^2 is reported, which provides an indication of how well the model fits the data, or how much the variability in the dependent variable is explained by the regression model (UCLA Statistical Consulting Group, 2011; Whitlock & Schluter, 2015). The *Food and Environment Scale* has a pseudo R^2 value of 0.133, meaning the model explains about 13% of the variation in composite scores for this variable. The *Communication and Decision-Making Scale* has a pseudo R^2 value of 0.194, which indicates that the model explains about 19% of the variation in composite scores. While these may seem like relatively low pseudo R^2 values, it is important to note that R^2 values under 50% are common in social science studies, as human attitudes and behaviors are difficult to predict (Stone, Scibilia, Pammer, Steele, & Keller, 2013). In addition, higher R^2 values do not always mean that the model represents a good fit to the data (Stone et al., 2013).

Table 10: Ordinal logistic regression models of Food and Environment and Communication and Decision-Making scores by socio-demographic characteristics (controls), length of program involvement, years since program participation and returning position. Odds ratios and standard errors (in parentheses) are reported.

Controls	Food and Environment	Communication and Decision-Making
Female	0.541 (1.247)	1.009 (0.351)
Racially diverse	0.927 (0.356)	1.721 (0.392)
Low-income background	0.835 (0.539)	1.427 (0.624)
Education ^a		
HS/GED (<i>None completed ref</i>)	0.459 (1.453)	2.414 (1.612)
Associates or certificate	0.560 (0.867)	0.070** (0.989)
Bachelor's degree or higher	1.287 (0.954)	5.479 (1.030)
Length of Time in Program (<i>One summer ref</i>)		
Two academic semesters	8.864* (1.074)	0.606 (0.875)
One summer + one semester	0.448 (0.689)	0.755 (0.695)
Full year	1.029 (0.967)	3.000 (0.719)
Years Since Program Participation ^a		
6-10 years (<i>2-5 years ref</i>)	2.376 (1.196)	5.570 (1.181)
11-14 years	1.229 (0.891)	0.184 (0.959)
15+ years	0.818 (0.943)	9.836* (1.046)
Returning Position	0.463 (0.422)	1.332 (0.418)
n	45	45
Prob > ChiSq	0.450	0.089
Pseudo R ²	0.133	0.194

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

^aOrdinal variable: Each subsequent level references the preceding level. Base level is provided in table.

Ordinary least squares (OLS) linear regression models were estimated for the remaining five dependent variables that did meet the assumptions. No significant or near-

significant factors were detected for the *Food and Environmental Policy Beliefs* composite score, although the respondents scored reasonably high on average (55 out of 60). In addition, no significant or near-significant variables were identified in the *Community* scale. Years since program involvement resurfaced as a significant factor in the *Self* model. Those who had been out of the program for fifteen or more years were more likely to score nearly eight points lower on the *Self* scale ($\beta = -7.779$, $p = 0.003$) than alumni in the eleven to fourteen-year group. No additional near-significant factors were detected. The *Community* and *Self* regression models are presented in Table 11. The very low adjusted R^2 values of -0.246 and 0.045 for the *Community* and *Self* models, respectively, indicate that these models have little practical significance in predicting variation in composite scores.

Table 11: Ordinary least squares (OLS) regression models of Community and Self scores by socio-demographic characteristics (controls), length of program involvement, years since program participation and returning position (unstandardized beta estimates).

Controls	Community	Self
Female	0.455	-0.086
Racially diverse	-0.140	0.726
Low-income background	-1.387	-2.392
Education ^a		
HS/GED (<i>None completed ref</i>)	3.091	2.621
Associates or certificate	2.729	2.345
Bachelor's degree or higher	0.249	-1.704
Length of Time in Program (<i>One summer ref</i>)		
Two academic semesters	-1.414	0.089
One summer + one semester	1.455	-0.550
Full year	-1.634	-0.551
Time Since Program Participation ^a		
6-10 years (<i>2-5 years ref</i>)	-2.759	-2.040
11-14 years	0.371	2.85
15+ years	-1.634	-8.390**
Returning Position	1.089	0.717
n	45	45
Prob > F	0.7878	0.2546
Adj. R ²	-0.246	0.045

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

^aOrdinal variable: Each subsequent level references the preceding level. Base level is provided in table.

Additional OLS models were estimated for the *Food* and *Environmental Civic Engagement* scales, although these models included alumni's composite scores for *General Civic Engagement* as an independent variable. Not surprisingly, *General Civic Engagement* was the only significant factor predicting both the *Food* ($\beta=2.924$, $p < 0.0001$) and *Environmental* ($\beta=3.100$, $p < 0.0001$) *Civic Engagement* composite scores. However, educational attainment represented a near-significant variable for

Environmental Civic Engagement, with those who had completed an Associates degree or certificate program more likely to score about seven points higher on this scale ($\beta=6.800$, $p=0.089$), 95% CI [-1.074, 14.073]. This variable did reach statistical significance when general civic engagement was not factored into the model. The full regression model is reported in Table 12. The adjusted R^2 value indicates that the independent variables account for approximately 45% of the variability in *Food Civic Engagement* scores and approximately 51% of the variability in *Environmental Civic Engagement*, adjusted for sample size and the number of parameters in the model.

Table 12: Ordinary least squares (OLS) regression models of Food and Environmental Civic Engagement scores by socio-demographic characteristics (controls), length of program involvement, years since program participation, returning position and general civic engagement scores (unstandardized beta estimates).

Controls	Food Civic Engagement	Environmental Civic Engagement
Female	-0.693	-0.583
Racially diverse	0.826	0.690
Low-income background	0.406	-1.504
Education ^a		
HS/GED (<i>None completed ref</i>)	-4.862	0.183
Associates or certificate	1.953	6.798
Bachelor's degree or higher	-3.861	-6.054
Length of Time in Program (<i>One summer ref</i>)		
Two academic semesters	2.908	5.351
One summer + one semester	-4.128	-4.600
Full year	0.621	0.953
Time Since Program Participation ^a		
6-10 years (<i>2-5 years ref</i>)	-3.563	-3.195
11-14 years	-2.564	-0.224
15+ years	6.349	2.943
Returning Position	-0.923	-2.337
Civic Engagement Composite Score	2.924***	3.100***
n	44	40
Prob > F	0.0022**	0.0015**
Adj. R ²	0.446	0.509

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

^aOrdinal variable: Each subsequent level references the preceding level. Base level is provided in table.

Open-ended qualitative responses

The survey also provided alumni with the opportunity to add any comments that they would like to share about their experience at GRuB. Only ten of the forty-five alumni left comments, and two were clarifications of survey responses. However, the remaining responses reflected positive experiences, as well as gratitude and support for GRuB. Alumni wrote about the impacts that GRuB had on their life, including an

enhanced sense of self-worth, the cultivation of personal values, improved job skills, and increased environmental and nutrition knowledge. One alum commented on how they did not get to experience as much as they would have liked to with GRuB, but it is unclear whether this was due to personal or programmatic circumstances. Another alum offered this reflection on how the program impacted their connection to the environment, food, community and self:

GRuB occurred [6-10] years ago in my life and it still largely affects my decisions today. I still take on challenges happily, and look for a recycling bin wherever I'm at. I started buying organic as soon as I could afford it and it remains a part of my lifestyle. GRuB was an irreplaceable piece of my life puzzle and shaped my values and character, beyond food and environmental policies. Some students in the program were oblivious to this gift they had been a part of, and others are doing better because of it. All of us will remain a family, no matter where we end up in the world.

This perspective also brings up the important point that not all program participants fully engaged, and so some may benefit more from the program more than others. However, those perspectives were not directly voiced in the comment section.

Other alumni provided the following responses:

GRuB laid the good foundations of sustainable living, food equality, and community involvement that I continue to build on as an adult.

GRuB brought a lot to my attention including food and where it comes from. For me, the main reason I'm happy I attended is GRuB taught me a lot of life lessons and how to deal with situations and how to handle yourself.

GRuB came into my life at a perfect time and helped me realize how much I had to offer.

Working for GRuB is by far the best job I ever had. I really appreciate the opportunity I was given.

I believe in everything you're fighting for keep going.

Some of the alumni who shared comments also participated in interviews, and their stories are recounted in the next chapter.

Summary

Overall, the quantitative data suggest that GRuB alumni possess strong empirical/analytic food literacy skills and some historical/hermeneutic food literacy, though the survey did not emphasize this domain and thus a firm conclusion cannot be drawn. In addition, GRuB alumni demonstrated a reasonably high level of critical/emancipatory awareness, though this awareness does not necessarily translate into praxis in terms of active political engagement in food and environmental issues. Furthermore, the survey data indicate that GRuB alumni do exhibit PYD outcomes encompassing Confidence, Competence, Character, Connection, Caring and Contribution. However, the data also suggest that these concepts are not static and may be subject to variation depending on one's present circumstances.

As the quantitative portion of the study sought to understand the factors involved in the sustained impacts from participation in GRuB's youth programs, it is evident that years since program participation does not impart a significant influence on most program outcomes. In other words, the data demonstrate that the majority of program outcomes are sustained over time, although alumni who have been out of the program for fifteen or more years were more likely to have lower *Self* and *Communication and Decision-Making* scores than alumni in the eleven to fourteen-year range. There may be something significant about the fifteen-year mark where sustained impacts from the program begin diminish in those areas—however, a definitive relationship cannot be determined. While t-tests suggested that race (racially diverse group) and low-income background corresponded with lower composite scores for the *Communication and Decision-Making* and *Self* scales, respectively, those influences disappeared when all other variables were accounted for in the regression models. However, educational

attainment was associated with a higher *Communication and Decision-Making* score in the ordinal logistic regression model. In addition, it is important to note that certain aspects of the program played an important role in alumni's *Food and Environment* score—specifically, alumni who experienced the summer program were more likely to have higher composite scores for this scale than alumni who participated only during the academic year. The open-ended qualitative responses provide an initial sense of some of the most notable, lasting impacts of GRuB's program for some alumni. The following section will delve deeper into the perceived long-term impacts from participating in GRuB's youth program, as expressed through alumni interviews.

Chapter 6: Qualitative Results

While the surveys provided a quantitative impression of the sustained learning and development outcomes from participation in GRuB's youth program, interviews with alumni issued a deeper look into what exactly those impacts are, and how these outcomes have served alumni over the long-term. A total of nineteen alumni comprised the interview sample. While the majority of interviewees participated in the Cultivating Youth Employment Program (fifteen out of nineteen), the entire interview sample provided a representative range of the program's evolution—from the initial years of the CYEP up through recent years of the GRuB School Program. Participants' involvement in the program ranged from one summer to two years, depending on whether they returned in a leadership position. However, alumni's accounts revealed that the length of time involved with the program did not always demonstrate a linear relationship with the magnitude of the program's impact on their lives. In other words, some of the most transformative experiences recounted were the product of participating in just the summer program.

On the whole, alumni expressed overwhelmingly positive impacts from participation in both formats of GRuB's youth program. While the most salient takeaways from program participation depended on the context of the individual alum, each interviewee spoke to a number of lasting impacts that GRuB imparted on their lives—whether they were in the arenas of the environment, food, community, self, or a combination thereof. The interview data demonstrated strong evidence of critical food pedagogy and positive youth development outcomes. In terms of critical food pedagogy, the data indicated that the majority of learning occurred in the empirical/analytic and

critical/emancipatory domains of food literacy, although some learning did occur in the historical/hermeneutic realm. The data also demonstrated long-term PYD outcomes that related to each of the Six Cs, with Confidence, Competence and Connection appearing as the most common takeaways across interviews. In addition to the themes of critical food pedagogy and PYD, a new theme emerged: *GRuB as a Formative Catalyst: “If It Weren’t for GRuB.”* While this theme undoubtedly connects to both critical food pedagogy and PYD, the phrases “because of GRuB” or “if it weren’t for GRuB” were so prevalent across interviews that a standalone theme was warranted. Within *GRuB as a Formative Catalyst*, two subthemes came to light: *Carving a Path: A Sense of Direction* and *Finding a Passion*. First, qualitative indicators of the empirical/analytic, historical/hermeneutic, and critical/emancipatory food literacy benchmarks will be discussed to demonstrate critical food pedagogy outcomes (Goldstein, 2014, 2016; Wever, 2015). Next, PYD outcomes will be examined through each of the Six Cs (Lerner, Lerner et al., 2005; Pittman et al., 2000). Finally, this chapter explores the emergent theme, *GRuB as a Formative Catalyst: “If It Weren’t for GRuB.”* Pseudonyms have been used for all interviewees to protect their confidentiality.

Evidence of Critical Food Pedagogy

Empirical/analytic food literacy.

Based on the interviews, empirical/analytic and critical/emancipatory food literacy represented the primary outcomes in terms of critical food pedagogy, with evidence of historical/hermeneutic food literacy appearing to a lesser extent. The alumni in the interview sample came to GRuB with varying levels of gardening experience and nutrition knowledge, from knowing “absolutely nothing” to having grown up with a

garden and/or health-conscious family members. The most prevalent benchmarks of empirical/analytic food literacy were *increased nutrition knowledge* (mentioned in sixteen out of nineteen interviews), *confidence and motivation to use food knowledge to make healthy choices* (mentioned in seventeen interviews) and *knowledge of where food comes from and various food terminology (e.g. GMO)* (mentioned in fourteen interviews) (Goldstein, 2014, 2016). However, these benchmarks interrelate closely with the other indicators in the empirical/analytic domain, and as a result, aspects of each benchmark arose at least once in the collection of interviews.

For many alumni, the nutrition knowledge they gained at GRuB resulted in an increased awareness of the different processes involved in various forms of food production, and how those processes subsequently impact human health. This awareness manifested in reported lifestyle changes including increased fruit and vegetable consumption, label reading, cooking, and/or consciousness of food sources. For example, one respondent who did the summer program stated:

[GRuB] taught me that everything doesn't come out of a box, I mean that's for sure. 'Cause I mean, like I said before...when I came in there...I had no understanding of really anything. –August, GRuB School alum

Later on in the interview, August expanded upon how his experience at GRuB changed his views about and connection to food:

Like I'm always cautious of what I put into my body...I know that it's not...not a lot if it's healthy for you and a lot of it's not fresh. A lot of it's been sitting on a shelf for a very long time or been sitting in the back of a truck, you know, driving all the way across the state to get here...So it made me a lot more aware, really aware of...good food and where it comes from...and how it affects me with what's in it, what's around it.

Another summer program participant reflected on how his experience at GRuB also changed his relationship to food:

It was a pretty transformative experience. I kinda learned how to eat healthier as well because before going to GRuB I never ate vegetables to be honest. But after foraging them and trying them all on the farm I gained a liking to it, so my diet changed. –Darren, CYEP alum

When asked later if he noticed any differences between himself and peers whom had not participated in GRuB that he might attribute to his experience in the summer program, Darren referenced his heightened awareness of food quality and nutrition:

Yeah, I feel like other people don't really—that I know, don't really want to bother going anywhere near nature or they don't go out of their way to make sure that the food that they're eating, the food that's going inside their body is something that should be inside their body. But I make sure to check that, I check labels, I check Google. I Google just to make sure that I know what I'm getting myself into.

Similar sentiments echoed across many of the interviews, particularly with regard to the connection between food quality and human health:

*My experience at GRuB like totally opened those doors for me, like I had no idea whatsoever...I didn't really understand the manufactured side of things...I never thought about where food was coming from or how long it took or the types and the kinds of food I was eating, the **quality** of food that I was eating...And so learning about that at GRuB allowed me to be like "Okay, well I need to not eat at McDonald's anymore" and I need to you know, think about making more foods from scratch instead of doing all of these prepared boxed foods with all these, you know, chemicals and really just things that aren't good for you. —Mia, CYEP alum*

Beforehand I was always eating...junk food...probably drinkin' a two-liter of soda a day. Now I eat a lot healthier and...more cautious about what I eat and...put in my body as well. –Reese, CYEP alum

Being part of GRuB and being able to bring home vegetables every week, like that was huge, huge ...you know it's huge to me now like, you are what you eat. –Gabi, CYEP alum

I don't think I've eaten fast food for like, two years, and like I make all my own food now. Like you know, whether it's like stir-fry or whatever and I only use organic food. I don't wanna be eatin' any GMOs or anything that'll you know, kill me. –Elliot, GRuB School alum

At the same time, some alumni expressed that while they possess a greater awareness and desire to purchase healthy food, as well as confidence and satisfaction in that knowledge, the price that comes with high quality food can make it difficult to fulfill that insight. For example, one respondent who completed a year in GRuB's program stated,

I definitely have made a lot of positive choices for myself around my eating habits. It's also helped me recognize when my body doesn't respond very well to certain things, which is like sugars and highly processed food...It's helped me make more informed decisions on, like, where I'm gonna buy stuff from and choosing it, like—understanding that my purchases are going to make a difference, and that that is kind of you like voting on, on what you are and what you're gonna support, even though there's also that level of like, well you can't always choose—a level of like, access that you don't have or resources that you don't have or you don't have the financial stability or, or you're gonna have to take what you're given kind of thing...So I'm definitely like more aware of what I'm putting in my body...and sometimes it sucks when I know I don't have a choice because I am broke and I have to eat something anyway, but, like, I feel good knowing that I know that. And that like, when I do have a choice that I can make the right choice. –Marley, CYEP alum

Here Marley refers to the systemic lack of affordable, healthy food. This statement also reveals critical/emancipatory awareness of the social and economic complexities of food systems, while simultaneously grappling with the dominant neoliberal consciousness model of leveraging food system change through purchasing decisions. While supporting local, sustainable food production is certainly an important component of building a resilient and just food economy, as Marley conveys, this form of participation in the food system is not accessible to everyone, which necessitates direct political strategies that aim to equalize that access. However, many respondents spoke to the common reality of not having the time, energy or interest in becoming more politically involved in the food movement due to the demands of daily life, so most

actions directed at change were implemented on the individual level using skills and knowledge from the empirical/analytic domain.

Historical/hermeneutic food literacy.

In addition to gaining skills in the empirical/analytic domain of food literacy, some alumni also expressed elements of historical/hermeneutic learning, particularly in reference to the cultural implications of food, as well as food's capacity for community building. When prompted to speak generally about her experience at GRuB, one respondent who participated in GRuB's program for two years stated:

My experience with GRuB, I didn't expect anything. I totally went in blind and came out, I learned a lot about food and friendship and culture...gender study as well, I didn't know all that. –Nora, CYEP alum

The link that Nora makes between food, culture and friendship reflects an awareness of food as a source of connection, while her mention of social roles ties to the critical/emancipatory domain of learning. With respect to historical/hermeneutic learning, Nora later spoke of how her time at GRuB led her to embrace her cultural background through food:

It was funny because I...I would never bring like, food, like to school. Like...what my mom cooked and it's just because like, you know, it's different than American food. So, I think that really opened—Like I remember bringing something, I forget. It was a dish that my mom made...to GRuB and everyone really liked it and after that I was like “Okay I'm not really shy about that anymore.”

An awareness of the link between food and community building was evident in Wes' response to the same general prompt about his experience at GRuB for two summers:

It was a really amazing experience for me. I learned a lot about...personal relationships and community and communication...health...nutrition...farming, and...community building, and...how to help...people access healthy food in our community and I was able to see a direct impact in peoples' lives. Especially in building the gardens with the Kitchen Garden Project and stuff like that. –Wes, CYEP alum

When asked what it was like to work in the community with GRuB, another respondent who participated for one year cited how the Kitchen Garden Project facilitated community connection and development:

We would...build raised garden beds for low-income families so it was nice to go out to the community to those low-income families' homes or apartment complex, build raised beds and just help them out and give them the ability and everything to grow their own food and to help the community that way as well. –Reese, CYEP alum

The two previous responses also tie into critical/emancipatory learning in terms of increasing community access to healthy food, which served as a common thread across interviews in that domain.

Critical/emancipatory food literacy.

The collection of interviews revealed several indicators of critical/emancipatory learning and awareness, although levels of understanding and personal interest varied from person to person. Some alumni claimed that their experience at GRuB inspired them to continue researching the social, political and ecological aspects of food systems after their time in the program. However, similar to Goldstein's (2014, 2016) findings, many alumni expressed interest in food system and/or environmental change, but were less involved in actually seeking that change through direct, collective action. In other words, the majority of change-oriented food and environmental behaviors reported were enacted on an individual level through purchasing decisions, dietary choices and/or efforts to reduce waste. However, while individual behavior modification may be indicative of the dominant neoliberal consciousness paradigm, as Wever (2015) concluded with the School Grown graduates in her study, these actions were informed by a more holistic

understanding of the links between social, economic, and ecological issues. In addition, some alumni expressed a desire to learn more about food and environmental policies in order to become more informed. From the data, it is evident that GRuB provided many alumni with the foundational awareness that accompanies critical/emancipatory food literacy, and that in a number of instances this awareness has flourished since their time at GRuB.

The most common benchmarks that arose included *knowledge and awareness of multiple dimensions of food (broader engagement)* (mentioned in eight of nineteen interviews); *knowledge and awareness of food and agricultural systems and their relationship to environmental health; knowledge and/or skills related to ecological relationships, processes, cycles, patterns, and context* (referenced in six of the interviews together with the previous benchmark); and *critical knowledge of the social and economic forces of a society that affect food* (arising in six interviews) (Goldstein, 2014, 2016; Wever, 2015). However, it is important to note that many of these benchmarks overlap with other measures within the critical/emancipatory domain, so indicators of one benchmark may actually demonstrate competence in more than one measure. Despite the overall trend of individual-level behaviors with regard to food and the environment, some alumni spoke of *exercising food-related behaviors that support a democratic, socially, economically and ecologically just food system* (Goldstein, 2014, 2016; Wever, 2015). In addition, multiple alumni demonstrated *critical knowledge and reflection in support of transformative learning*, as well as *sense of connection to and care for a particular socio-ecological place, expressed through human, non-human and food-based relationships* (Wever, 2015). This care for socio-ecological place arose most prevalently as a fond

reflection of working with their fellow crewmembers in the dirt, which half of the interviewees specifically mentioned.

One of the most frequent benchmarks of critical/emancipatory food literacy was *knowledge and awareness of the multiple dimensions of food (broader engagement)* (Goldstein, 2014, 2016), which arguably encompasses additional measures such as *awareness of socio-political impacts of the food system and ability to analyze associated discourses* (Goldstein, 2014, 2016) and *critical knowledge of the social and economic forces of a society that affect food* (Wever, 2015). Many alumni spoke of interrelated social, ecological, economic and political concerns about the food system. For example, when asked about new skills and knowledge that she gained from GRuB, one respondent who participated in GRuB's program for two summers claimed:

They brought in this old TV and showed us this video of...the food system and the impact that farming has on our environment, on our health, and...on our society as a whole. And...that really showed me that...there was a much larger connection that we were learning about and there was just a whole other world that I just, I knew nothing about up until I had joined GRuB and they showed me that I actually have a passion for learning more about this. –Robin, CYEP alum

This statement also reflects an understanding of the relationship between the food system and environmental health, as well as transformative learning—two additional benchmarks of critical/emancipatory food literacy as specified by Wever (2015). Robin followed up on this statement later when asked about food or environmental issues that interest her most:

Really the subsidies and the mass farming. It more ties into that, that obesity epidemic and how that is really affecting America and the rest of the world...just, killing people because of the massive amounts of sugars that get thrown into all of our food...And then how much that, those farms are affecting our environment, the run-off that comes from them, the mass amounts of pesticides and fertilizers that are used are just ruining so many communities because it's leeching into their water system, things like that and...It's a vicious cycle that obviously no one

has figured out yet, but, should be made a much higher priority...to figure out a better alternative.

This statement clearly reflects *critical knowledge of the social and economic forces of a society that affect food* (Wever, 2015), in addition to *knowledge and awareness of food and agricultural systems and their relationship to environmental health* (Goldstein, 2014, 2016). From the data, the connections between agriculture and socio-ecological health, as well as knowledge of ecological processes and cycles, appeared to be significant learning takeaways for a number of alumni in the critical/emancipatory domain:

[GRuB] just made me realize that we're a part of [the environment] ... We cannot exist without there being a balance between us and nature and it is extremely imbalanced and people are getting sick from their food because we're abusing it... Everything is connected... us and the earth are one entity. We can't exist without it. And to think that anything that's affecting the earth isn't going to affect us is ridiculous because it's, it's directly linked to us. –Marley, CYEP alum

I think it was really fascinating to see how, like, the process of planting something, growing it into a sprout, and then seeing it grow into, like, a vegetable or a fruit and then putting it on our table and eating it. Like that whole process was... magical to me. So I just thought that was... almost life changing just to actually see the process and be so close to, and intimate with our food. You know? –Mel, CYEP alum

[GRuB] taught me... how food grows in a whole different process that made me look at how everything is like made and, and like even how animals are raised. – Spencer, CYEP alum

GRuB really just kind of opened my whole mind to a full spectrum of... respecting life and the earth... good stewardship and, you know managing and, and protecting and conserving resources and things that I didn't even know really existed I guess, before GRuB. You know I just thought there was like, the city and then there was like, nature and that was about it you know? –Wes, CYEP alum

That GRuB provided the foundations for critical reflection on the food system was also evident across interviews, particularly in regard to corporate farming:

It did make me interested in learning more about...the pros and cons of organic farming like on a large scale. And it made me pretty interested in the politics of it. You know like for instance the FDA's definition of organic and how that might not necessarily meet the standards that most people have when they think of organic. So you know, who is responsible for making that distinction? And who's paying them? –Nolan, CYEP alum

I...realized...well, that there's like a massive operation that's like profit-driven and not...there's no interest in people so much, or nutrition...when it comes to farming. And that...you know it's, it's just much more important and sustainable to grow organic and smaller and...it's a more natural and better for the earth and better for people. And...you know it's, like I feel great supporting that in the community. You know like, going to the farmer's market and just kind of trying to like, take some power out of...the machinery of farming in the nation you know? –Wes, CYEP alum

While the extent of food activism that Wes reports may be limited to personal lifestyle behaviors and purchasing decisions, those choices are informed by a critical awareness of the larger socio-political forces that govern food systems. In addition, consumers do represent significant constituents of the food system, and while perhaps not the most effective means of food activism according to critical food scholarship, understanding one's role in the food system and exercising purchasing decisions with a critical lens can serve as an indirect way to address socio-ecological concerns.

However, as mentioned previously, consumers do not always have the agency to enact informed decisions. Issues of particular concern cited throughout the interviews were access and affordability when it comes to healthy food:

[GRuB] made me understand that there was a line below poverty and they made me understand like, so many things about how...healthy eating is so important and how so many people are missing out on that. –Ava, GRuB School alum

I definitely think that you know, our...food system, you know a lot of our food, especially healthy foods, like they're not very affordable for people who are of lower income or middle class. You know...it's very hard to eat healthy because you have like, if you're on food assistance or, you know, if you just don't make enough money to like be buying all these really expensive products all the time...I think that's what deters a lot of people from eating healthy and that's a big

contributor to why people buy a lot of junk...Having healthy food accessible and affordable is the biggest thing for me. –Jamie, CYEP alum

I learned about how what types of foods were accessible to people. So originally...you know I didn't really know very much about like organic foods and stuff like that but then I found out that...it's more expensive to you know, eat healthier than it was to not eat healthier. And like McDonald's has a dollar menu but if you want a salad it's like six dollars...You know and so that, it opened up my mind that way to like be able to see how much, you know, people who can't afford food really aren't getting the best things for them. –Mia, CYEP alum

Some alumni discussed how they have continued to implement the practical farming skills they learned to grow their own food instead of having to purchase it. In addition, a few alumni talked about teaching others how to grow food, which connects to the critical/emancipatory benchmark of *exercising food-related behaviors that support a democratic, socially, economically and ecologically just food system* (Goldstein, 2014, 2016; Wever, 2015). Jamie, a CYEP alum who participated in GRuB's program for one summer, mentioned this several times throughout the interview:

I definitely think, you know...learning how to grow things organically...it's very rewarding to you know, know how to grow your own food and it's just, it's, it's good to know the skills to be able to teach other people as well. Because then it's rewarding to teach them, and it benefits you and the person you're teaching.

Later on, when asked how GRuB influences her life today, Jamie said:

*I definitely think that the you know...learning how to be more sustainable with my food was a big thing for me because **now** I know how to grow it, so I can teach other **people** how to grow it **and** what to do with it. You know 'cause sometimes people will grow food and, and they're like "I don't really know what recipes this is good in," or you know...So I can help with that which is really...definitely a big impact.*

Other alumni also mentioned putting their farming skills to work by providing food for others and/or teaching other people how to grow food for themselves:

I've helped a lot of people, independently, build their own plots and start their own gardens. –Drue, CYEP alum

I think it, it affected me in a positive way because now I can, like...my friend, her grandma was trying to like grow some tomatoes and I went out and helped her out and like, in her greenhouse now they're goin' like strong. It's nice, she was super happy about that so, just the chance to help others you know? –Elliot, GRuB School alum

*And for me...whenever I grow veggies I always end up growing more, so it's like I'm supporting myself **and** like, feeding my friends and family, giving them an option to like have some fresh produce if they don't have access to it...and they're like, more likely to eat it when it's just given to them than if they have to work extra hard, save up extra like, budget better so they can have some decent produce. Because organic produce is so much more expensive, and so it's, it's helped me be much more aware and make smarter choices and really recognize how much value there is in being able to share with the people around you. – Marley, CYEP alum*

By teaching others the empirical/analytic skills and knowledge to grow food, these alumni have also facilitated more democratic participation and autonomy within the food system, thus demonstrating a form of critical/emancipatory praxis. However, personal food cultivation is not a viable solution for everyone, especially in dense urban areas with a lack of space to do so. The opportunity for personal food production is somewhat unique to the South Sound region due to its urban and rural landscape and because Washington State maintains relatively strict regulations on urban expansion. Sydney, a CYEP alum who participated in the program for one year, raised this issue during our interview:

*...For the first time I've been living in a metropolitan area where it's much more difficult to have space to grow your own food...I feel like Olympia, even if you're really poor there's like a lot of **space**. So, we always had like, a little yard or something...Here, most people live in apartment buildings...I think that it's unreasonable to expect everyone to be able to grow their own food...Getting a plot in a garden space somewhere in [metropolitan city] ...the waitlist is five years long. Like there's no way. And also it's unreasonable to expect people to like, take time out of their—gardening is like so much work and it takes so much time...So...I care about local food production but I don't understand how it could ever be successful and affordable. I don't see it in my community...So yeah, food issues I care about. Just to generalize it, affordability and I wish that there was a way for people to grow their own food. But I also think it's unrealistic.*

Nonetheless, the empirical/analytic skills and knowledge that many alumni gained through their time at GRuB has often served as a source of personal and collective empowerment, and has also translated to critical/emancipatory learning and practice. For one alum who participated in the program for one summer, this knowledge base has led to an *interest in active citizenship as it relates to food*, a benchmark of critical/emancipatory food literacy (Goldstein, 2014, 2016):

So basically I learned that like certain farms...have to follow like specific regulations on to what they can grow and how they can grow it. And...I learned about having to rotate your soil and stuff so that the nutrients in the soil aren't like overused and it becomes a barren land. And it was really nice to learn that stuff because now I know that like...if I go into that kind of field that I can follow the proper procedures and I can read more about the policies and be able to put my opinion out there instead of just kind of sitting back and kind of throwing my procedural...ballots into the trash like most people do. And I can actually have an influence in the community in what happens to our food and how healthy our food is when we get it. –Aspen, GRuB School alum

From the collection of interviews, it is clear that GRuB successfully fostered elements of critical food pedagogy in its youth program participants. Empirical/analytic food literacy served as a primary outcome in this regard, with historical/hermeneutic food literacy arising to a more minor extent in this sample. It is also clear that participation in GRuB's youth program inspired an appreciable level of critical/emancipatory food literacy in a number of the alumni interviewed, though again the most salient takeaways from program participation differed depending on the context of the individual. The following section will expand upon these findings with an analysis of PYD outcomes based on the Six Cs framework discussed in the literature review.

Positive Youth Development Outcomes

In addition to critical food pedagogy, the data also demonstrated strong evidence of PYD outcomes. The range of interviews revealed multiple indicators of the Six Cs: Confidence, Competence, Connection, Character, Caring and Contribution, with some Cs appearing more prevalently than others. Specifically, indicators of Confidence appeared in eleven of the interviews, measures of Competence arose in twelve, Connection emerged in sixteen, Caring in eight, and Contribution surfaced in nine of the interviews, and indicators specific to Character unfolded in six interviews. However, it is important to emphasize that as with the indicators of the three domains of food literacy within critical food pedagogy, many measures of the Six Cs also overlap, and so signs of Caring may also be indicative of Character and Contribution, etcetera. The following subsections will discuss the findings from the interviews in terms of each of the Six Cs.

Confidence.

Across interviews, Confidence emerged as a powerful takeaway for many alumni from their experiences in both formats of GRuB's youth program. Quite a few alumni discussed developing greater confidence as a direct result of the responsibilities that GRuB provided them with. Specifically, many alumni spoke of opportunities to challenge themselves and push beyond the boundaries of what they initially thought they were capable of, which resulted in a greater sense of self-worth and self-efficacy. In particular, a number of alumni spoke of the importance of having these experiences as youth, and to be able to recognize at a young age that they are valuable members of society.

Confidence...believing in myself, having a self-esteem, all of that was attributed to GRuB. –Drue, CYEP alum

I feel like I could you know, make changes in the community and it's not just you know...me all by myself. I feel like I would be able to create a support network

and then be able to implement a change, be able to get people to want something to change. And I feel like I would have enough of the capabilities and skills, you know...because of GRuB that I would be able to do something like that. So, they, they helped me I guess feel more confident...about things like skills and leadership, and...networking and... trying to make differences. –Mia, CYEP alum

Well I think the most I got out of GRuB, or like the main benefit was...just more self-confidence. For sure. I mean, being able to—like even though I still get nervous public speaking like it helped me with at least knowing how to keep practicing at it...and also that I could, I could do whatever I put my mind to. –Gabi, CYEP alum

It's changed me because I've learned to not give up so easily. Before, before then I would usually give up on something 'cause it was hard or something, that I was uncomfortable with. And now I'm willing to do that and step out of my comfort zone. –Darren, CYEP alum

I think GRuB overall...that's like, their underlying, foundational message to us kids. It's just like, you're worthwhile. You're valuable. And you can contribute to the greater society...and that's always been very important to me, I guess. It's what I took from GRuB. –Mel, CYEP alum

A number of alumni also spoke of GRuB as a place that enabled them to grow and become empowered, unique individuals.

I felt validated for the first time and I felt like I had a space that I could actually grow in, rather than being in a space where I was gonna have to completely keep changing and adapting myself to work with the rest of the world around me even if it's not really what I agreed with. –Marley, CYEP alum

Later on in the interview, Marley reiterated this sentiment, referencing the importance of feeling empowered as a young person:

*It was nice because it was a space for me to actually, like, feed that, that thirst for social justice knowledge that I needed, and then it was also a good way to help me be able to communicate effectively, to be able to express myself and feel that I have power in my own voice. It was the first time that we had **been** told our voice was powerful and deserves to be heard.*

Taken together, these excerpts speak to GRuB's strengths in fostering confident, empowered people who recognize their value. The indicators of Confidence also tie into Competence, the outcomes of which will be explored in the following section.

Competence.

As discussed in the literature review, Competence encompasses a number of personal capabilities, including vocational (i.e. work ethic and occupational exploration), social (i.e. communication and conflict resolution), cognitive (i.e. reasoning and decision-making), and academic as demonstrated through performance and engagement (Lerner, Lerner et al. 2005, p. 23; Lerner, 2004; J.L. Roth & Brooks-Gunn, 2003a). The alumni interviews revealed numerous instances of competence development as a result of participation in GRuB's youth program, primarily in the vocational and social arenas. In terms of vocational skills, many alumni expressed how GRuB provided them with their first job experience and allowed them to develop fundamental employment skills:

Well it was my first job. And...it was a lot of fun and very, very eye opening...I would say that GRuB kind of gave me the first look into what having a job is, and how I would need to interact with people in that kind of a setting. –Robin, CYEP alum

I guess it's been a way of starting out my working career because that was my first job...It was a good experience of me, like I said, being an individual and going to like work every single day and having kinda like, co-workers, people I barely know you know what I mean? Instead of classmates...And so I went to go start work like I had more of a mindset of like, an understanding of how things work...like we're just a team...It gave me an understanding of how jobs actually work. –August, GRuB School alum

Some alumni spoke of how the work skills they gained through GRuB served to benefit them in subsequent jobs:

I definitely think that it made me a better person for customer service...Like, you know...those skills are applicable to my other jobs that I've had...and actually just some recent ones that I've had. –Jamie, CYEP alum

Being responsible for setting up and selling, learning how to sell things to people and keeping track of change. That was definitely a useful skill. And then I actually, one of my first jobs when I moved to [metropolitan city] ...was, I worked at the farmer's market because I was able to say, like, "I have experience working at a farmer's market." Even if it was just one farm stand...And then...other

skills...I mean literally just teamwork. I mean like, learning how to be a part of team, that was new...I had been on like sports teams before, but...working as part of a big group is really different. –Sydney, CYEP alum

Well I learned how to farm. And I worked on organic farms for probably close to...5 or 6 years after GRuB. So I learned a lot about just the practical side of working a farm. –Wes, CYEP alum

Notably, a number of alumni derived Confidence and Competence from the practical skills they gained in cultivating food, which have continued to serve some as a source of self-sufficiency. As Elliot, a GRuB School alum who participated in the program for one year, states,

I have an actual, like I have a greenhouse in my backyard that I built from the skills that I learned from GRuB, which really helps out a lot and makes it so that we can actually grow plants during winter. Like I took care of the chickens when I was at GRuB and like, we have a chicken coop in our backyard now that we can get eggs from every day. So I just, really just helped me grow as like, you know an individual you know trying to survive on his own, you know?

Other alumni corroborated this sentiment:

[My favorite part] was definitely learning about horticulture. It was definitely learning how to grow my own food. I still use that today. I have a big garden now, it's amazing. –Ava, GRuB School alum

I learned how to do the garden from them so I could bring it home and do it for myself and provide food for my family. –Spencer, CYEP alum

I learned to build garden beds with them, like raised garden beds...which I built for myself later on which was great. –Iris, CYEP alum

Even if they don't currently apply the practical skills that they learned at GRuB, some alumni expressed that the knowledge base they gained serves as a personal reservoir of possibility should they choose to put those skills into practice. As Iris, who participated in the CYEP program for one summer elaborates,

I think they've affected me in a lot of subtle ways...there's a lot of things that I think I learned with GRuB that maybe I don't use all the time, but that if I want to try something out, like when I, I don't currently have my own garden but it's

something I feel capable of doing...and I think that's a big way that I walked away from it.

Mia, a CYEP alum who participated in the program for an academic year and two summers, also expressed a strong sense of competence from the diverse set of skills she gained at GRuB:

So if I wanted to you know, start a garden I could...I know that if I had a garden that I had extra food I could donate that extra food instead of letting it go to waste, or I could start the community boxes like they were doing, and getting people in the community to eat healthier too. Or start a farm stand. I know how to do things like that. I know how to write grants. I know how to...do public speaking and fundraising and like those are things I know how to do now because of GRuB. So I feel like if I were to want to do something like that in my life...at some point in time, I could do it because I have the experience that I had with GRuB.

In addition to vocational skills, many alumni discussed gaining enhanced social competence through the communication and conflict resolution skills they developed at GRuB. Robin, a CYEP alum, recounted a particularly frustrating social experience that turned into a vibrant learning opportunity:

[Our teacher] ...had to sit us down and it was like "Okay, we need to talk this out and you guys need to start getting along because this doesn't work." And I had to learn that even if I think I'm right, and even if I know that this guy is just a jerk, I need to step back and let him be who he needs to be, and I can't influence that. Sometimes you just don't like people but you need to learn to get along.

Other alumni also spoke about developing stronger interpersonal skills at GRuB:

Yeah [GRuB] definitely made it a lot easier for me to talk to people and like, figure out how to, you know, relate and stuff. –Elliot, GRuB School alum

So the entire thing for me was like a really big, just I walked in every single day, I wanna try my hardest, I wanna sweat as much as I can and, and then I was also learning a lot too. But my favorite part was either working out every single day or like, getting more in depth in understanding things. Emotionally. –August, GRuB School alum

A few alumni attributed positive personal and social development to learning the practice of Straight Talk, a method that GRuB employs to teach youth how to provide and receive constructive criticism. As Nolan, a CYEP alum who participated in the program for two years, explains:

So yeah, it's a way of de-escalating conflict or communicating without, you know, aggravating someone. So sometimes people's feelings get the better of them and you know they, they can't do...what needs to be done if you know, they're thinking about themselves...as a subject rather than an object. So yeah this Straight Talk is something that I uh, still think about and use today.

Sydney and Marley also mentioned Straight Talk as a beneficial takeaway from their time at GRuB, despite the challenges that came along with it:

*I don't think I **liked** Straight Talk that much but I think it was really important. And now I can say it was like, a very valuable thing that we did. And, I guess it wasn't like, my favorite most fun thing 'cause it was hard, but, I'm glad that we did it, or we learned how to do it. –Sydney, CYEP alum*

*We did Straight Talk which is, you know, constructive feedback, constructive criticism, alphas and deltas, and that was hard getting used to 'cause it's hard to hear things that you need to do better...if you're someone that's really hard on yourself. And so it was difficult, **and** it made a huge--like, that's one thing that made so much positive change in my life. –Marley, CYEP alum*

As qualitative analysis seeks to unveil the 'how' and 'why' of particular phenomena, it is important to take a moment to explore key factors that can successfully foster a sense of competence in youth. A couple of interviewees brought up the importance of being held accountable to standards as young people, which is a crucial component of PYD programs (Eccles & Gootmann, 2002):

It was really interesting how they would treat us the way that they would adults and have a kind of mediation session or things like that. And it was...it was...refreshing. To not be treated like a fifteen- or sixteen-year-old and to be treated like an adult and expected to behave like one as well. –Robin, CYEP alum

I remember being like treated like really professionally in a way that I...kind of hadn't gotten other places. Like it felt really easy at that time and as a teenager to

be just like, kind of like, disregarded, you know...of feeling like you're only expected to do so much, or you're not capable of doing more and I just completely got like the opposite like of that from people at GRuB, which just felt like really cool and empowering and like made me want to connect with them more. –Iris, CYEP alum

GRuB's approach in treating its youth program participants with respect, dignity and accountability, and expecting the same in return, serves as a central facet in promoting Competence as well as the other five Cs of PYD. The next section will explore evidence of Character outcomes from the interviews.

Character.

As discussed in the literature review, Character refers to a strong sense of morality, integrity, responsibility and an appreciation for diversity (Lerner, Lerner et al., 2005; Lerner, 2004; J.L. Roth & Brooks-Gunn, 2003a). Some interviewees described how GRuB helped them develop skills to become more well-rounded, conscientious individuals:

I had a lot of personal growth in that, in that program and we did a lot of team, team activities so I learned how to work as a team and personally, you know, be a little more honest about things. –Jamie, CYEP alum

They've definitely helped me like, be able to trigger what's right and wrong in just social interactions and like that kind of stuff. –Ava, GRuB School alum

In addition, some alum brought up how their experiences at GRuB also instilled a sense of commitment to responsibility:

And...it's not so much the skills I learned but also something that really, that was really important that I learned was to actually like, follow through with work. And to know that I can do hard things, because the stupid summer days and weeding, like, that was super rough, but to like, stick with it and work all the way through and looking back on the row that I weeded, and it's like, really accomplishing. And I felt that accomplishment, and so...I think that is something important too. Just to, you know, that I can do hard things and I can actually finish a task. –Mel, CYEP alum

Well I mean...now I actually get up at like, you know, six, seven am and I'll go out and do chores, do work instead of just waking up, you know, slackin' off, skippin' school. You know. But like I think it just made me a better person overall. Like, like now if I see somebody who needs help you know I'll help 'em. Without questioning it. –Elliot, GRuB School alum

A number of alumni also discussed how GRuB provided them with the opportunity to connect with a diverse group of people, many of whom they would not have formed friendships with otherwise:

It was really fun because...the people in the crew, like...we were all so different. I mean, from different...ethnicity, different crowds from the high school. So to interact with them and to get to know them, that was really interesting. And...like, if, if it wasn't for GRuB I wouldn't interact with those people at all, so...that was really fun and just us growing really close together and getting to know each other. –Mel, CYEP alum

I think, yeah, the strongest point for me is just the, the perspectives that I learned at such a young age...and building relationships with people, and seeing how such a diverse group of people can easily come together and share common ground. –Iris, CYEP alum

So, people can get along. Even people that you don't think could get along, and that's what really surprised me. There's types of people that I probably never would've tried to talk to at that point in my life and it really, really helped with that. –Drue, CYEP alum

The opportunity to relate to others while bridging across differences demonstrates an increased value for diversity, which is an essential aspect of Character (Lerner, Lerner, et al., 2005; Pittman, Irby, Tolman, Yohalem, & Ferber, 2003). The traits associated with character also play into the PYD outcomes of Connection and Caring, which will be discussed in the following sections.

Connection.

Connection arose as a prevalent PYD outcome throughout the interviews, which is not surprising given GRuB's emphasis on relationship building. Nearly all of the interviewees described cultivating profound friendships with their fellow crewmembers at GRuB. Interestingly, eleven of the nineteen interviewees mentioned maintaining some of their friendships from GRuB to this day.

*It was amazing to like, be put in a group with all these different people, different backgrounds, different schools, different ethnicities, different, you know, hobbies, interests, everything. And for us to be able to all come together in a way that we actually felt really solid in each other and trusted each other and **relied** on each other, and, when we all had to go our separate ways it was, it was really sad but, those of us that really wanted and needed it found a way to keep each other in our lives...It really is like a small family and support group. And they're there for you even when your own family can't be. –Marley, CYEP alum*

My crew was amazing. I'm actually still friends with most of them...I made some of the best friends that I have in my life now through GRuB. –Ava, GRuB School alum

It was awesome...in fact I actually still talk to quite a few of the crew uh, to this day, even though I was in the crew back in [11-14 years ago]. But gained a lot of friendships as well. –Reese, CYEP alum

In addition to forming long-lasting friendships, a number of alumni described how their experience in GRuB has enabled them to engage in healthy, positive relationships with friends, family and the community at large. As Aspen, a GRuB School alum explains,

I think that I kind of pick a different crowd nowadays. Like I said before I'm not doing what I used to do so I don't really meet the people that I was meeting before and I'm meeting a lot more people who are more active in the community and people who are running programs and inspiring others to do the same.

Other alumni concurred in how their experience in GRuB provided them with the foundations for connecting with others and establishing a sense of community:

At such a young age... that GRuB...you know, was introduced to me, I feel like it really impacted me in a positive way. Towards food and towards relationships, towards community...The relationship I'm in is really healthy. All my friends, we have a healthy, respectful relationship. I have a good relationship with my mom...In general I just feel really positive. –Nora, CYEP alum

I mean [GRuB] made me just, kinda drew me out of my shell kind of thing and realize that like, making those connections is really important. –Gabi, CYEP alum

Before I worked at GRuB and in my family life I didn't really participate in the community as a whole, ever...And after GRuB, I—and during my time with GRuB—I, I found myself just, actively participating in community and building relationships and getting to know people all over the place and...I found a, a part to play in, in the world...I think that's been a lasting change where I don't...I don't think I would have ever felt the way I do about community or society or, or anything if I hadn't gone through that experience at GRuB. –Wes, CYEP alum

In addition to feeling connected to others in their crew, many alumni mentioned positive relationships with staff members as having a profound impact on their lives.

When asked about a standout moment or learning experience from GRuB, Iris, a CYEP alum, offered some insight:

I think that would go back to the teachers and leaders at GRuB...and just how they, how they conducted themselves, how they...communicated with youth...and just genuinely treated everyone with respect...I learned about how important that was to me...I guess thinking about this now and that experience and applying it to my...career and professional life now, like that's—those elements and those values are still really strong to me...I value that and seek that in other people and feel like committed to acting that way myself.

Having supportive adult-youth relationships represents another crucial element of PYD programs (Eccles & Gootman, 2002; Lerner, 2004). Sydney, another CYEP alum, reiterated the importance of having a positive adult mentor when asked about her standout moment or experience from GRuB:

Honestly just...getting to know [lead educator] and how he interacted with us. That was, that's like the biggest standout thing...building a relationship with an adult who like, really positioned himself as an ally, in like, such a, such a deliberate way. I had never seen that before, really.

Later on in the interview, Sydney expanded on how the experience has influenced her life today:

Watching someone as a role model and how they work with youth has directly translated to how I work with youth in my job now, and pursuing youth development work.

An important ingredient in building healthy, trusting relationships is Caring, which represents the fifth PYD outcome.

Caring.

Caring, or having a sense of empathy, was also an evident outcome from participation in GRuB's youth program. Many alumni described becoming more open minded as a result of their experience at GRuB, as well as developing a deeper sense of compassion for others. For example, when asked how her time at GRuB changed the way she relates to others, Nora, a CYEP alum, provided this reflection:

I think more compassion I guess...I used to volunteer at the food bank after GRuB too and...I don't know I just, I feel like I'm more...I mean I've always been like a kind person but, I don't dismiss them, people. Everyone has their story.

Other alumni also remarked how their experience at GRuB taught them to be more accepting, kind and understanding toward others. For some, this manifests as a non-judgmental outlook on people:

*I feel like...before I joined GRuB I was a lot less open minded...They really changed me and they really turned my views around on people and they showed me how to **treat** people and they showed me that people could be all sorts of everything...and you had to really love everyone for who they are. —Ava, GRuB School alum*

I don't judge people. I think all of us do when we're younger. But I like to think that I don't judge people like most people do. And that is definitely an impact from [GRuB].—Drue, CYEP alum

[I learned] you shouldn't just judge people for what you think that they've been through because a lot of people have kind of just been through the same stuff as you. –Aspen, GRuB School alum

For other alumni, Caring arises as a deepened sense of empathy. As August, a GRuB

School alum, explains:

*I'll always put myself in the person's shoes. And I realize a lot of people don't do that. A lot of people are kinda selfish in a way where they want people to feel for them...and they won't feel for somebody else. Like I will always—I will see how this bigger situation is going and like, what I would do if I was them and how I would **feel** if I were them if I were to do something. Like, you know if I were to say something rude how would that person feel?*

An additional form of Caring that arose in the interviews included a greater desire to help others whenever possible, and a sense of joy in doing so. As Spencer, a CYEP alum who participated in the program for one summer, states:

If anybody needs help I just try to help 'em and be a good neighbor and it just all, in general just I try to help whoever and even if it doesn't matter and I gotta help somebody and I don't get help in return it's just, it makes me feel good to show somebody that I do care.

The element that drives the aforementioned expressions of Caring can be understood as an underlying sense of love—not necessarily romantic love, but an approach to all interactions, even difficult ones, with a genuine sense of compassion and humanity.

Sydney, a CYEP alum, offers her reflection on this idea:

If I have to, if I feel the need...to give someone feedback or constructive criticism I know how to do it in a...I think from a place of love is, like, one thing that GRuB talked about a lot, was like even like, things that are hard to hear can be worded from a place of love, or like come from a place of love.

From the alumni's perspectives, it is apparent that Caring served as a significant takeaway for many, as evidenced through exercising greater compassion, empathy, and a non-judgmental outlook.

Contribution.

The sixth C, Contribution, manifests as a personal investment in oneself, family, community and society (Lerner, Lerner et al., 2005; Lerner, 2004; Pittman et al., 2000). Contribution also appeared as a significant outcome for a number of the alumni interviewed. Many of them reported having a greater appreciation for community work after their time at GRuB, whether in an interpersonal, volunteer or occupational capacity.

I know directly that my experience with GRuB...has influenced my thinking a lot on...the desire to, to give back and contribute to something greater... I'm engaged in, in helping others of a fair capacity...in one way or another like pretty much at all times... Whether that's with supporting friends or family or helping a organization build things or lend a hand...it, it comes out in many different ways.
–Iris, CYEP alum

I work in a non-profit, and I work in my community...I feel like at least my day to day...I can come home feeling satisfied that I did something to like, hopefully improve the life of someone in my community or part of my community. –Sydney, CYEP alum

Since [GRuB], every chance I get out and I volunteer with the [local] Land Trust...So that's a huge experience that I got to gain from that because it's not something that I would have taken part in before. –Aspen, GRuB School alum

Later on in the interview when asked about how her time at GRuB impacted her connection to community, Aspen reiterated her commitment to community engagement:

A lot actually...before I wasn't a part of it really. I mean, I guess I was part of the community in a general sense but I wasn't actually active in the community. Now I'm out there with everybody taking part as much as I possibly can.

In response to the same question Ava, a GRuB School alum who participated in the program for one year, also described becoming more engaged in her community:

I started being a lot more of an activist. I started supporting things that I fully support, like I've been to probably at least six protests in 2017 and I've started just getting a lot more involved in my community. I started shopping at the co-op, I started...supporting local businesses more...GRuB definitely impacted me in that way.

Drue, a CYEP alum who participated in the program for one year, further emphasized how her experience at GRuB influenced her participation in community:

Later on it made it so I was confident and doing petitions, doing independent study projects...so it really had a huge impact on my life and it made it so I volunteered—I did an internship at [non-profit organization] for over year...and then I worked at [government agency] for a year. So. It all came together.

For Drue, her role in community has flourished into something of a greater synergy:

I somehow built this network, when anyone needs anything in the community, they come to me and I point them in the right direction... 'Cause that's what GRuB and [another non-profit organization] did for me...I think it's had an impact on the fact that I can have impact on others.

Mia, another CYEP alum, discussed how the opportunities she was exposed to through GRuB inspired her to expand her horizons in terms of community engagement.

Referencing a conference she attended with GRuB:

I think that that conference made it to where I was more interested in not just the GRuB part of the experience but more of like what else I could do...in other aspects of my life. Like...now I do community service stuff but I do community service stuff that helps with you know...domestic violence and women and children and...people who are addicts or ex-addicts and stuff like that. So I've, I've focused my, my time more doing stuff like that. But I wouldn't have ventured out of my bubble, my GRuB bubble if it wouldn't have been for things like that conference where I learned about like a whole new almost like a whole new world kind of thing.

From the perspectives and experiences recounted in the interviews, it is clear that GRuB played a significant role in fostering PYD outcomes in its youth program participants. However, it is important to emphasize that PYD outcomes can manifest in different ways and to varying degrees in different people, depending on the context of the individual (J.L. Roth & Brooks-Gunn, 2016). In addition, due to the fluidity and interconnection of PYD indicators (for example, evidence of Caring can also reflect Character and Contribution) the attempt to compartmentalize outcomes may provide a

somewhat reductionist perspective on the overall impact of the program. This became evident in conducting the qualitative analysis, wherein a significant, third theme emerged, *GRuB as a Formative Catalyst*. This theme is discussed in the next section.

GRuB as a Formative Catalyst: “If it Weren’t for GRuB”

Throughout the interviews, a number of alumni repeated phrases along the lines of “if it weren’t for GRuB” or “because of GRuB” when discussing the paths they took in life after participating in the program. As such, *GRuB as a Formative Catalyst* became a prominent theme, with two underlying subthemes: *Carving a Path: A Sense of Direction* and *Finding a Passion*.

Carving a Path: A Sense of Direction.

Many alumni spoke about how their experiences at GRuB set them on a positive trajectory in life and influenced the decisions that they made after participating in the program. For several alumni, GRuB opened up an abundance of new possibilities. As Robin a CYEP alum explains,

*I think that it helped to... kinda show myself that I could...actually talk in front of large crowds and that changed really what I wanted to do, going forward. I still didn't know what I wanted to do with my life at that point but I knew that I wasn't going to be limited. Because I **could** do something that I couldn't before.*

Later on in the interview, Robin expanded on this reflection.

*You know you never really know exactly how something in your past influenced your present and your future, and I think a lot of things in my life would be very, very different...It was, I think it was a bit of a, a catalyst in helping me come out of my shell and live in a way that I would be happy...Had I not been at GRuB I'm sure that I would still be **happy**...I think I would just be going in a very different direction.*

Several other alumni echoed how GRuB provided them with a sense of direction that has led to personal fulfillment.

Probably just more like direction. So, it kinda like just like helped me...have a wider, open perspective but also narrowed me like, of what I wanted to do. So like...looking at what's important, what do I want to do in the world, or what, what can I do...It just kind of made me realize my potential. –Gabi, CYEP alum

I can definitely say it's changed a lot of my life on like how I, how I've acted and like that program...it really kinda put me in a good path on doing something good in my life...where I've just kinda stepped up and I really did something and I mean that, that made me feel really good. –Spencer, CYEP alum

I know that if I wasn't at GRuB I would be a very, very different person...because the path that I chose before GRuB was not very positive...so GRuB helped me in that where it gave me something to think about, and have a different type of mindset that I didn't before. –August, GRuB School alum

For a number of alumni, the ability and desire to make fulfilling choices in life came from having a safe space to grow, take risks, and develop their identities as young people.

As such, GRuB represented more than just a job or school:

I think being a teenager it was so much more than working or you know, learning things or workshops and stuff like that. I mean it was really cool learning all those things...For me though, it was so much more because...I was able to always have someone to reach out to that would reach me—put me in the right direction. And so...it was a lot of things and it really absolutely changed my life. I, I don't know what would've happened to me if it wasn't for them. –Drue, CYEP alum

I remember...that's the first place where like I openly like told people stuff that was like straight off my mind and didn't like think about it. Like, one thing for me that I really appreciated about GRuB was that it wasn't just a farm for me and like, working hard. For me...it was also a place where you learn more about yourself and how to deal with situations and even when you're angry or when other people are angry or how to help people with their situations...But I mean that's the first place where I truly like opened up and stuff. And so I really appreciated that. –August, GRuB School alum

In addition, many alumni expressed how the opportunity to develop authentic relationships and engage in difficult, vulnerable conversations aided them in their personal development:

I think that really...working there was...the safest place I'd ever felt...Like I'd never felt safer in my life than when I worked there and we were able to like, dig through a lot of personal stuff in a small group in these like workshops we were doing about interpersonal relationships and all kinds of things and it was just a very unique, wonderful thing...And so...that has always stuck with me too...it's just a, like a permanent building block in my life, you know? –Wes, CYEP alum

My favorite thing was really just having a safe space because that's what the biggest thing was for us, was that we didn't always all get along, we didn't all have the same ideas, but we always had space to be able to talk about it. And it brought us all closer together, it changed a lot of peoples' opinions, it helped us all grow together and, and like, do that self-reflection. –Marley, CYEP alum

It was probably the best experience I've had in my life, honestly...They're the nicest people I ever met...they're understanding, like you can just walk into there with any problem and they'll help you solve it. And like, never had that anywhere else. –Elliot, GRuB School alum

Finding a Passion.

In addition to finding a sense of direction and a solid sense of self, for many alumni, their time at GRuB helped them discover what they're passionate about and led them to follow that passion. In many instances this manifested in career choices or other lifestyle decisions. As Marley recounts,

*I feel like GRuB is really good at kinda just reminding people that there's more things out there and that there are things we can be passionate about that's not about money...I'm more focused on like, how am I gonna make some really positive change and improve the lives of the generation after me? How am I gonna set up some fundamental things to make the kids that I interact with successful in life in a way that **they** feel successful themselves?...That success in knowing that what you're doing is your passion and that you are happy with who you are.*

Later on in the interview, Marley reiterated:

Like, my time at GRuB made me realize that I am about doing peer and otherwise support. And really about building people up and really about giving people the space to heal, giving them the space to be empowered, giving them the tools that I was given so that they can go out and be their own advocates and advocate for other people.

Similarly, Sydney also pursued a career path based on her experience at GRuB:

Well...I started thinking more about my experience this past, like, week and I realized that I pursued youth development work after leaving GRuB because of my experience at GRuB. So like I didn't enter any kind of like farming or sustainable food system kind of career. I just wanted to work with youth and like...be a figure in someone, a young person's life that like, just, showed that they cared.

Mel, another CYEP alum who participated in the program for one year, also talked about discovering passions through her experience at GRuB:

I feel like before GRuB...I don't really feel like I had a personality I just, I'd kind of get lost in the crowd, but, going through GRuB...helped me to find, kind of like...my voice and to have things that I'm...passionate about—about food, about the environment, about social justice issues...I think that it, it has definitely changed me a bit.

Later on in our interview, Mel emphasized how discovering those passions has subsequently impacted the lifestyle decisions she has made,

I wanna say—because of GRuB, like, I live in a...community...with a community garden of our own and we have chickens and ducks and, and the people in my community, they're very much aware and very much involved with environmental and food-related issues...So, I wanna say, without GRuB I wouldn't have chosen to live in a place like this and to be surrounded with more...people who are educated on issues like that.

A number of other alumni also discussed the importance of finding passions and feeling empowered to pursue what they value in life:

I think that GRuB also helped to...make me more aware of social issues...It was something that I became passionate about after GRuB because of kind of the chain reaction of, of learning about these social issues and agricultural issues...you dig deeper and, had I not really been introduced to those things I don't really think I ever would've...wanted to get involved with other organizations and other non-profits...and do all this other stuff to really improve the system that we have. –Robin, CYEP alum

Well I definitely think if it wasn't for GRuB I wouldn't want to, or I wouldn't even think about branching out or creating changes or doing anything like that in my community because I wouldn't have had the confidence to think that it was possible to do it anyway...I feel like lots of people don't feel like they can do

something because they're only one person. And so when I worked at GRuB I realized that even the smallest groups of people can get together and form networks, make changes happen. I feel like I'm more passionate about things like that and now that's like the type of stuff that I like to do. So if it wasn't for GRuB I probably wouldn't be doing any type of that volunteer work or anything like that because I wouldn't know that I could do something. –Mia, CYEP alum

Summary

From all the experiences recounted in the interviews, it is evident that both formats of GRuB's youth program have provided strong foundations for critical food pedagogy, positive youth development, and creating a life they find meaningful and fulfilling. Every interviewee described their experience in GRuB as a positive one, and for many it was transformative. Notably, when asked what a difficult aspect of their experience in the program was, the most common responses involved overcoming personal issues or finding the same level of support after leaving the program. While each individual took away their own unique lessons and perspectives, the data show across the board that GRuB's youth program can successfully promote positive, lasting changes in all four arenas of environment, food, community and self.

Chapter 7: Discussion

The overarching research question explored in this study is: *What are the sustained impacts of GRuB's agriculture-based youth development program on alumni's attitudes toward, and connection to, the environment, food, community and self?* More specifically, this study focused on two sub-questions: *To what extent does participation in GRuB's youth program foster a sustained, critical awareness of the environment and food system? To what extent does participation in GRuB's youth program lead to long-term PYD outcomes?* Critical food pedagogy and PYD served as the theoretical frameworks informing data analysis. This chapter integrates the findings from the qualitative and quantitative datasets to explore how they confirm or contradict one another. In addition, this chapter discusses how the findings relate to the greater body of literature on agriculture-based youth development programs.

Bringing It All Together

On the whole, the findings from the two datasets largely support one another. One of the most significant findings in both the quantitative and qualitative datasets was the impact of participating in the summer program. In the quantitative dataset, alumni who only participated in the summer program were statistically more likely to have higher *Food and Environment* composite scores than alumni who only participated during the academic year. Likewise, interviewees that had only experienced the summer program at GRuB described a number of important, lasting impacts from their experience, including a greater respect for nature and food, developing fundamental job skills, and becoming more in touch with personal values that influenced later life decisions. As such, the length

of time in the program did not necessarily always correlate directly with the magnitude of the program's impact. As one respondent put it,

And I mean relatively like, three months...what uh, [6-10] years ago? Like on one scale it seems really insignificant but that, that experience has really held strong with me. –Sydney, CYEP alum

Critical food pedagogy.

In terms of critical food pedagogy, both datasets suggested that the deepest learning occurred in the empirical/analytic and critical/emancipatory domains of food literacy. While the survey did not provide a sufficient opportunity to analyze historical/hermeneutic food literacy, 82% of respondents agreed or strongly agreed that all people should have access to culturally appropriate food, which suggests some degree of learning in this domain. In addition, a handful of interviewees referred to developing historical/hermeneutic aspects of food literacy, including a greater appreciation for one's food culture as well as food's capacity to build community. Empirical/analytic food literacy appeared as the most prominent and salient learning domain in regard to critical food pedagogy. Quantitatively, this was reflected in the high mean composite score for the *Food and Environment* scale (23.7 out of a possible score of 25). Qualitatively, a number of the interviewees discussed gaining skills and knowledge in growing and cooking food, and many derived a sense of confidence and competence from these skills as well, which ties into PYD outcomes. In addition, many of the interviewees discussed learning the importance of food quality and nutrition during their time at GRuB, which resulted in personal behavior changes including label reading and selective food sourcing.

Both datasets also support the development of critical/emancipatory food literacy, but primarily in terms of critical awareness and not so much in terms of political engagement, which is the ultimate goal of critical food pedagogy (Sumner & Wever,

2016). The survey results indicated low levels of participation in issues related to food and the environment as reflected in the mean scores for those scales (29.7 out of 70 for *Food Civic Engagement* and 26.6 out of 70 for *Environmental Civic Engagement*). However, the survey results did support a strong awareness of political, social and economic food system issues as indicated by the high composite mean score for the *Food and Environmental Policy Beliefs* scale (55.7 out of 60).

The interviews corroborated and expanded on the quantitative findings in terms of political engagement, as alumni were conscious of the multiple dimensions of food systems, but lacked the time, energy or interest to engage in these issues politically. Many alumni cited individual purchasing decisions as their primary form of engagement in these issues as a form of consumer activism. These results parallel Goldstein's (2014, 2016) findings, as the food education program participants in her study expressed an interest in food system change, but were not interested in actively pursuing change beyond individual consumption habits. However, Goldstein (2014, 2016) notes that the program she studied also served as a catalyst that inspired some graduates to become more interested in researching the deeper complexities of food systems, though she remarks that a firm conclusion would require follow-up research after years had passed—a perspective that the present study offers. These results similarly align with Wever's (2015) findings, as the program graduates in her study also demonstrated critical awareness that did not translate into praxis apart from personal behavior changes. However, Wever (2015) notes that respondents' lifestyle changes arose from a more holistic understanding of food and environmental issues, which thus ties into critical/emancipatory awareness.

It is important to mention that the respondents in Goldstein's (2014, 2016) and Wever's (2015) studies were all recent graduates of their respective food education programs, while the present study encompasses a broader range of alumni in different stages of life. Nonetheless, while the most evident form of food system participation manifested on the individual level in this study, many of the GRuB alumni interviewed did express an interest in becoming more informed about food and environmental policies in order to make more informed decisions.

PYD outcomes.

The quantitative and qualitative data also suggest the development and maintenance of the Six Cs among the group, although Confidence, Competence and Connection appeared most prevalently in both datasets. As for the survey, the *Community, Self and Communication and Decision-Making* scales were primarily comprised of indicators for those three outcomes, which allowed them to come to the forefront. However, the scales did contain some items that also related to Character, Caring and Contribution. As mentioned in the previous chapter, the Six Cs are not necessarily discrete concepts, but rather feed into one another. This idea was also reflected in the interviews. While alumni spoke most frequently of gaining Confidence, a greater capacity for Connection, and various social, cognitive, vocational and academic Competencies, their stories simultaneously reflected indicators of Character, Caring and Contribution. In a way, it seemed that GRuB's program provided the fertile ground for developing Confidence, Competence and Connection, from which qualities of Character, Caring and Contribution subsequently sprouted. It is important to reiterate that the primary takeaways from program participation are dependent upon the context of the

individual. As such, indicators for each of the Six Cs may not have appeared in every interview, but the interviews collectively demonstrated sustained development in each arena.

Interestingly, while the survey results suggested that program alumni who had been out of the program for fifteen or more years were more likely to score lower on the *Self* and *Communication and Decision-Making* scales than other groups, this was not reflected in the interviews. On the contrary, interviewees from that group emphasized growing more confident and becoming better communicators because of their time at GRuB, and some provided specific examples of communication skills that they continue to implement. It is possible that alumni may have felt more comfortable answering questions honestly in an online survey rather than discussing personal insecurities with a researcher. Nonetheless, while the survey data indicate a possible decline in self-concept, communication and decision-making fifteen or more years after program involvement, the interview data—which provides more nuanced perspectives—does not support this finding.

Connection to follow-up studies of agriculture-based youth development programs.

In examining the few studies that have investigated the long-term impacts of participation in agriculture-based youth development programs (one year or more), several overlapping findings emerge. In their interview-based follow-up study with alumni from The Food Project, Brigham and Nahas (2008) also found that program participants gained invaluable employment skills (social and vocational Competence), leadership skills (Confidence, social Competence, Contribution), a greater value for diversity (Character, Connection), more compassion from an enhanced understanding of

social issues (Caring, critical/emancipatory awareness), and a heightened appreciation for food quality (empirical/analytic food literacy) and sustainable agriculture (empirical/analytic food literacy). In addition, the study found that alumni's experiences with The Food Project similarly influenced their career and lifestyle choices, highlighting "the importance of finding meaning in their professional lives," (Brigham & Nahas, 2008, p. iii). However, unlike the stories expressed by GRuB alumni, graduates from The Food Project were largely unable to maintain long-term friendships due to geographical dispersion (Brigham & Nahas, 2008). In contrast, 58% of the GRuB alumni interviewed spoke of maintaining long-term friendships with their fellow crewmembers. While a number of GRuB alumni have remained around the Olympia area, that is not the case for all, and many have continued to foster those relationships over long distances.

While Brigham and Nahas (2008) identified increased knowledge of sustainable agriculture as a theme in their findings, it was not mentioned as prevalently across their collection of interviews. In contrast, a number of the GRuB alumni interviewed have continued to implement the practical food cultivation skills they learned, and over half of the entire sample reported gardening sometimes or often. As noted in Chapter Six, these differences may be attributed to the availability of space in Thurston County, whereas personal food cultivation is more difficult in highly urbanized settings. Despite this difference, some of The Food Project alumni also discussed changing dietary and lifestyle habits as a result of their experience in the program, though the issue of affordability and access also arose (Brigham & Nahas, 2008). Interestingly, Brigham and Nahas (2008) did not include program alumni who had only experienced The Food Project's summer program, and recommended that future studies do so. The researchers

predicted that participants who only participated in the summer program might bring more critical perspectives to program evaluation—which was not the case in the present study, as both the quantitative and qualitative data show that GRuB’s summer program has positive, lasting impacts on many alumni who participated for only that portion of the program. This could have significant implications for other Food Project and GRuB-like youth programs.

The results from this research also complement findings from the follow-up study on East New York Farms! (Sonti et al., 2016). Alumni in their study exhibited reasonably high composite scores for the *Food and Environment*, *Community*, *Self*, and *Communication and Decision-Making* scales. However, a direct comparison among means is not practical, as different survey items were eliminated in each respective study, which affects the calculation of mean composite scores. Sonti et al. (2016) also obtained written qualitative responses via a comment box on their survey, from which they identified nine prominent themes: increased gardening and nutrition knowledge; strengthened communication, interpersonal and public speaking skills; a greater sense responsibility and work ethic; an enhanced connection to community; increased self-confidence and leadership skills; a greater appreciation for diversity; improved money management skills; a grounded sense of personal identity and values; and new opportunities for career paths. These findings are similarly reflected in the present study, which speaks to the transferability of program designs that incorporate PYD and food justice principles when tailored to the needs of their community.

Limitations

This study carried a few important limitations that must be taken into consideration when drawing conclusions from the data. First, while all necessary measures were taken to ensure that the quantitative data met the assumptions of each statistical test, the relatively small sample size may have limited the reliability and statistical power of some of the analyses. Inaccurate contact information for alumni proved to be somewhat of a barrier in the recruitment process. While in many cases utilizing social media turned out to be a successful outreach strategy to overcome missing or inaccurate contact information, not all alumni could be found on Facebook. Furthermore, it is possible that some alumni who were contacted through Facebook no longer have active profiles, which further limited the sample size. It is also important to factor in the possibility of response bias, wherein alumni who had a positive experience at GRuB may have been more likely to respond to the survey, and even more likely to participate in an interview. Taking this into consideration, it is likely that the data are not representative of every alumni's experience in the youth program. Furthermore, it is also possible that social desirability bias may have influenced some participants' responses to the survey or interview questions, wherein answers were chosen based on what others would view as more agreeable as opposed to selecting the response that personally rang most true.

As a study employing retrospective evaluation, it can also be difficult to draw firm conclusions about cause and effect, particularly when it comes to the quantitative data. While the interviews unveiled a number of perceived long-term benefits from participating in GRuB's youth program, it is also possible that some reports were enhanced by subsequent life experiences that alumni have engaged in since their time at

GRuB. As Liddicoat and Krasny (2013) state, “A major challenge inherent to retrospective evaluation studies is linking current attitudes and behaviors to specific experiences in the past, given months and often years of intervening experiences,” (p. 294). However, commenting on the value of memory, “...through their specificity and in combination with existing theory, episodic memories also shed light on teaching practices that will promote long-term retention of knowledge, attitudes, and behaviors,” (Liddicoat & Krasny, 2013, p. 294). The findings from this study do point to programmatic elements that foster sustained outcomes that may be transferrable to other programs, including an emphasis on relationship-building, supportive staff, communication and team-building workshops, opportunities to challenge oneself, and a focus on experiential learning both on the farm and in the greater community. However, while aspects of the findings may be transferrable to other programs, a final limitation of this study is the generalizability of the conclusions, as youth development programs are typically tailored to meet the needs of a specific community.

Recommendations for future research

The field of agriculture-based youth development programs is rapidly growing and ripe with opportunity for future research. First, integrating data from pre and post-program evaluations would provide a comparative basis from which to conduct a longitudinal study for future cohorts. In addition, given the data richness that mixed-methods study designs can produce, these pre and post-program evaluations would ideally include both quantitative and qualitative data. Furthermore, future survey research could also include more measures specific to historical/hermeneutic food literacy, as the present survey did not provide an adequate opportunity to capture that concept

quantitatively. Moreover, it would be interesting to see how this survey could transfer across additional agriculture-based youth development programs in different geographical and cultural contexts.

Chapter 8: Conclusion

In pursuing the primary research question addressing the sustained impacts of GRuB's agriculture-based youth development program on alumni's connection to the environment, food, community and self, it appears that those impacts are multifold and multidimensional. Taken together, both datasets provide evidence of lasting program impacts in all arenas, though the most salient and permanent takeaways depend upon the context of the individual alum both then and now. In addressing the two sub-research questions, it is evident that GRuB's program provides essential foundations for critical food pedagogy and positive youth development. Participants demonstrated strong empirical/analytic skills and knowledge and critical/emancipatory awareness. Although this awareness did not always translate into political action, many alumni did speak of other actions they take that support a democratic and just food system, including sharing the bounty of their gardens with others or teaching others to build gardens and grow their own food. Historical/hermeneutic learning remained the least developed domain of food literacy, which may be a consideration for future program development. This could include more discussions around how food connects to culture, how food is represented in the media, and how the role of food has changed over time (Sumner, 2013; Wever, 2015).

In terms of positive youth development outcomes, the data showed mixed results with regard to self-concept and communication and decision-making. Despite indications from the quantitative data that self-esteem and communication skills may diminish fifteen or more years after program involvement, the qualitative data do not support this finding. This suggests that these mixed results may also be a factor of individual context and not

time out of the program, as further indicated by the higher *Communication and Decision-Making* scores held by alumni in the eleven to fourteen-year range as compared to alumni in the six to ten-year range. Indeed, the qualitative data do show strong and sustained development of each of the Six Cs across the range of interviews. Moreover, one of the most significant findings from the qualitative data is that GRuB served as a formative catalyst for many alumni, influencing subsequent lifestyle and career path decisions based on personal values they developed in the program. It appears that for many alumni, GRuB provided a personalized compass for them to orient themselves with what they find most meaningful in life, as well as the courage to pursue those passions.

Considering the broader implications of this study for agriculture-based youth development programs, this research provides further evidence of the importance of learner-centered, relationships-based, experiential education programs. The results suggest that these programs provide more than just short-term benefits and can equip youth with skills that translate to lasting positive personal, social and environmental outcomes. This is especially important with regard to present patterns of youth disengagement in the conventional public school system, as well as producer and consumer disempowerment in the dominant industrial food system. Programs that directly engage youth in issues related to food, the environment and community have the potential not only to contribute to meaningful personal and community development, but also to foster critical awareness and inspire action to create a more sustainable, equitable society.

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Appendix A: Survey Instrument

Adapted from Sonti, N. F., Campbell, L. K., Johnson, M. L., & Daftary-Steel, S. (2016). Long-term outcomes of an urban farming internship program. *Journal of Experiential Education*, 39(3), 269–287. <https://doi.org/10.1177/1053825916655444> and

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“The Sustained Impacts of an Agriculture-Based Youth Development Program on Alumni’s Connection to the Environment, Food, Community and Self”

Thank you for taking the time to complete this survey. I estimate that it will take you about 20 minutes to complete.

As a thank you for your time, you will be able to choose a \$20 e-gift card to Visa, Amazon.com or Home Depot after you’ve completed the survey. E-gift cards will be delivered by email within three weeks of submitting your survey responses. If you would prefer to have your gift card delivered by mail, please provide a mailing address at the end of the survey. Mailed gift cards may take longer to deliver.

Demographics

1) How old are you? _____

2) What gender do you identify with? (*Check one*)

- Male
- Female
- Transgender
- Gender non-conforming
- Other: _____
- Prefer not to say

3) What categories describe you? (*Check all that apply*)

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic, Latino or Spanish origin
- Middle Eastern or North African
- Native Hawaiian or Other Pacific Islander
- White
- Other: _____
- Prefer not to say

4) Do you identify as coming from a low-income background? (Check one)

- Yes
- No
- Prefer not to say

5) What are you doing now? (Check all that apply)

- In 4-year college program full time
- In 4-year college program part time
- In 2-year college program full time
- In 2-year college program part time
- In a graduate degree program full time
- In a graduate degree program part time
- In a job training or career program
- Working full time
- Working part time
- Seeking work or unemployed

6) What education or training have you already completed? (Check all that apply)

- Completed a 4-year college program
- Completed a 2-year college program
- Completed a graduate degree
- Completed a job training or career program
- Completed high school or GED
- None completed yet

7) If you are in school, what is your major? Or if you haven't picked a major yet, what do you think you'd like to study?

8) If you completed a college degree or career training program, what did you study?

9) If you are working, what is your job?

10) Which GRuB program did you participate in? (Check one)

- GRuB School
- Cultivating Youth Employment Program

11) How old were you when you started your involvement in the GRuB program?

12) What year did you start you start your involvement in the GRuB program?

13) How long were you a crew member for? (Check all that apply)

- One summer
- One academic semester
- Two academic semesters

14) Did you return as a Peer Crew Leader? (Check one)

- Yes
- No

15) If you answered yes to #14, what year did you return as a Peer Crew Leader?

16) Did you return as a Farm Assistant? (Check one)

- Yes
- No

17) If you answered yes to #16, what year did you return as a Farm Assistant?

Recreation

18) In the past year, have you: (Check all that apply)

- Gone camping, hiking, or canoeing?
- Looked for a new job or explored career opportunities?
- Participated in any sports such as running, biking, swimming, football, soccer, basketball or bowling?
- Read novels, short stories, poems or plays, other than those required for school?
- Written novels, short stories, poems or plays, other than those required for school?
- Attended a live music event?
- Played music?
- Tried to meet new people for social purposes?
- Volunteered at an arts or cultural organization?

- None of the above

19) We are interested in learning if the things you learned at GRuB stuck with you and affect your life today. Please mark one answer in each row.

Food and Environment					
I grow food or garden. ^a	Never	Rarely	Every once in a while	Sometimes	Often
I have a good understanding of where my food comes from.	Never	Rarely	Every once in a while	Sometimes	Often
I cook.	Never	Rarely	Every once in a while	Sometimes	Often
I eat fruits and vegetables.	Never	Rarely	Every once in a while	Sometimes	Often
I eat fast food. ^a	Never	Rarely	Every once in a while	Sometimes	Often
I care about nature and the environment.	Never	Rarely	Every once in a while	Sometimes	Often
I find ways to reduce waste (compost, recycle, reuse).	Never	Rarely	Every once in a while	Sometimes	Often
Community					
I take leadership roles in my community.	Never	Rarely	Every once in a while	Sometimes	Often
I participate in community activities (volunteering, clubs, community gardens, church groups, etc.).	Never	Rarely	Every once in a while	Sometimes	Often
I feel close to my friends and peers.	Never	Rarely	Every once in a while	Sometimes	Often
I feel lonely or disconnected from the people around me.	Never	Rarely	Every once in a while	Sometimes	Often
I feel close to the adults in my life.	Never	Rarely	Every once in a while	Sometimes	Often
I feel connected to a larger community (school, church, neighborhood, etc.).	Never	Rarely	Every once in a while	Sometimes	Often
I feel comfortable interacting with people of different races, genders, and abilities.	Never	Rarely	Every once in a while	Sometimes	Often
I surround myself with people who are a positive influence.	Never	Rarely	Every once in a while	Sometimes	Often
I feel capable of making change in my community and beyond.	Never	Rarely	Every once in a while	Sometimes	Often
Self					
I am a good leader.	Never	Rarely	Every once in a while	Sometimes	Often
I feel good about myself.	Never	Rarely	Every once in a while	Sometimes	Often
I have a lot to be proud of.	Never	Rarely	Every once in a while	Sometimes	Often
I have low self-esteem.	Never	Rarely	Every once in a while	Sometimes	Often
I am motivated at work and/or school.	Never	Rarely	Every once in a while	Sometimes	Often
I enjoy learning new information.	Never	Rarely	Every once in a while	Sometimes	Often
I am comfortable applying math and science concepts when I need them.	Never	Rarely	Every once in a while	Sometimes	Often
I enjoy learning new skills.	Never	Rarely	Every once in a while	Sometimes	Often
I plan for my future.	Never	Rarely	Every once in a while	Sometimes	Often
I enjoy trying new things.	Never	Rarely	Every once in a while	Sometimes	Often

			in a while		
I feel like I have a sense of purpose in life.	Never	Rarely	Every once in a while	Sometimes	Often
I feel confidence in my beliefs even when they are different from how other people think.	Never	Rarely	Every once in a while	Sometimes	Often
Communication and Decision Making					
I communicate well with others.	Never	Rarely	Every once in a while	Sometimes	Often
Peer pressure influences my decisions.	Never	Rarely	Every once in a while	Sometimes	Often
I consider multiple viewpoints or perspectives before making a decision.	Never	Rarely	Every once in a while	Sometimes	Often
I feel comfortable talking with a friend or an adult about difficult decisions.	Never	Rarely	Every once in a while	Sometimes	Often
When I get upset, I feel comfortable talking it out with others.	Never	Rarely	Every once in a while	Sometimes	Often
I speak up or take action when I see a problem.	Never	Rarely	Every once in a while	Sometimes	Often

^a = item removed through factor analysis, not considered in composite score

Food and Environmental Policy Beliefs

20) How much do you agree with the following statements? Please mark one answer in each row.

The dominant industrial food system is defined here as the globalized, large-scale production, processing, distribution, consumption and disposal of food.

The dominant industrial food system has serious negative environmental consequences.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Organic agriculture is always more sustainable, even on an industrial scale. ^a	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am concerned about the rights of farmworkers.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Federal food policies prioritize social justice. ^a	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Equal access to healthy food is a current problem in our society.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Agriculture, social justice and environmental health are all connected.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Consumer choice is the best way to influence food policy. ^a	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Being informed about food policy is important.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The dominant industrial food system successfully feeds the world's population. ^a	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
All people should have an equal opportunity to participate in decision-making processes about their food systems.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
All people have a right to healthy food.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Activism is important for environmental policy change.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is too much corporate influence over environmental policy.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Everyone is equally affected by environmental problems. ^a	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

	Disagree				Agree
Agricultural practices are irrelevant to climate change. ^a	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
All people should have access to culturally appropriate food.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Activism is important for food policy change.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Collective action creates the most effective change.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

^a = item removed through factor analysis, not considered in composite score

Civic Activity

21) In the past year, have you: (*Check all that apply*)

- Looked for information about political or social policy issues, current affairs or political campaigns?
- Discussed your views about political or social policy issues, current affairs, or political campaigns?
- Contacted an elected government representative?
- Contacted the national or local media?
- Signed a petition?
- Attended a public, town, community board or school meeting?
- Given a speech?
- Voted in a local election?
- Voted in a national election?
- Collected money or signatures for a cause?
- Worn a button, or distributed or put up a flyer/sticker/poster of a political campaign?
- Participated in a protest?
- None of the above

Civic Activity in Relation to Food and Agriculture

22) The following questions ask about your participation in action or advocacy about issues related to food policy, food systems or food justice. These terms encompass issues of social justice, food system sustainability, government funding and regulations, etc. Please mark one answer in each row indicating how often you do the following.

Look for information about food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Share information about issues related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Discuss your views on food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Contact an elected government representative about issues related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Contact the local or national media about issues related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often

Sign a petition on issues related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Attend a public, town, community board or school meeting about issues related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Give a speech about food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Attend a workshop on food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Teach a workshop on food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Participate in community organizing activities related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Collect money or signatures for a cause related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Wear a button, or distribute or put up a flyer/sticker/poster for a cause related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often
Participate in a protest, demonstration or rally for a cause related to food policy, food systems or food justice?	Never	Rarely	Every once in a while	Sometimes	Often

23) Civic Activity in Relation to the Environment

The following questions ask about your participation in action or advocacy about issues related to environmental policy, environmental sustainability or environmental justice. These terms encompass issues of social justice, ecological sustainability, government funding and regulations, etc. Please mark one answer in each row indicating how often you do the following.

Look for information about environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Share information about issues related to environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Discuss your views on environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Contact an elected government representative about issues environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Contact the local or national media about issues related to environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Sign a petition on issues related to environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Attend a public, town, community board or school meeting about issues related to environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Give a speech about environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Attend a workshop on environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Teach a workshop on environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Participate in community organizing activities related to environmental policy, environmental sustainability or	Never	Rarely	Every once in a while	Sometimes	Often

environmental justice?					
Collect money or signatures for a cause related to environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Wear a button, or distribute or put up a flyer/sticker/poster for a cause related to environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often
Participate in a protest, demonstration or rally for a cause related to environmental policy, environmental sustainability or environmental justice?	Never	Rarely	Every once in a while	Sometimes	Often

24) What issues related to food, agriculture and the environment do you care about most? (Check the top three)

- Equal access to healthy food
- Reducing corporate influence over food policy
- Reducing corporate influence over environmental policy
- Increasing opportunities for public participation in food systems issues
- Farmworkers' rights
- Government support for small and mid-size farmers
- Government support for sustainable farming practices
- Increasing educational opportunities about the environment and food system
- Creating more localized food systems
- Reducing agriculture's impacts on climate change
- Other _____

25) Is there anything else you would like to add? (Comments, questions, suggestions?)

26) Would you be willing to participate in a 30-60 minute interview for this study? If you decide to complete an interview, you will be given a \$30 e-gift card to Visa, Amazon.com or Home Depot as a thank you for your time. A limited number of interviews will be taken.

- Yes
- No

27) If you answered yes to #26, please provide your name and an email address or phone number so we may contact you to schedule an interview. If the maximum number of interviews has been taken, we will still contact you to let you know.

28) Please indicate which \$20 gift card you would like to receive for completing the survey.

- Visa
- Amazon.com
- Home Depot

29) Would you like an e-gift card or a mailed gift card?

- E-gift card
- Mailed gift card

30) Please provide your name and an e-mail address (if you haven't already above) or mailing address to receive your gift card.

Please click SUBMIT to turn in your survey responses and we can send you your \$20 gift card. Thank you for your participation!

BACK

SUBMIT

Appendix B: Interview Protocol

Please note that this is a semi-structured interview. This means that I may ask clarification questions or ask you to elaborate on your responses. Potential clarification questions have been added, but might not be asked. This interview is completely voluntary, and you are free to skip any question or stop at any time.

1) Why did you join CYEP or GRuB School?

2) How long were you involved in the program?

3) Tell me about your experience at GRuB.

Potential follow-up or clarification questions:

What was your favorite part?

What was difficult?

What was it like to work on the farm?

What was it like to work in the community?

What was it like to work with your crew as a team?

4) What is a standout moment or experience that you remember about your time at GRuB?

Potential follow-up or clarification questions:

What did you learn from that moment?

Do you feel that that moment changed you? If so, how?

5) What did you know about food and agriculture before your time in the GRuB program?

Potential follow-up or clarification questions:

What skills did you learn?

What new knowledge did you gain?

How do you think these skills and knowledge have affected you?

6) How did your time in the CYEP or GRuB School Program impact your relationship to food?

Potential follow-up or clarification questions

Did it change the way you eat? If so, what changed and why?

Did it change your views about how food is grown? If so, what changed and why?

Did it impact the way you view the food system? If so, what changed and why?

Did it change your views on food policy? If so, what changed and why?

Did it change your views on food justice issues? If so, what changed and why?

What food system or food policy issues interest you the most and why?

7) How did your time in the program impact your views on the environment?

Potential follow-up or clarification questions:

Did it change the way you think about the environment? If so, what changed and why?

Did it change the way you relate to the environment? If so, what changed and why?

Did it change your views on environmental policy? If so, what changed and why?

Did it change your views about sustainability? If so, what changed and why?

What environmental issues interest you the most and why?

8) What differences do you see in yourself as a result of the program?

Potential follow-up or clarification questions:

Do you attribute personal growth to your time in the program? If so, what changed and why?

Do you notice any differences between you and other people your age as a result of your experience at GRuB? If so, what differences?

9) Did your time in the program impact your connection to community?

Potential follow-up or clarification questions:

Did your time in the program change the way you relate to others? If so, what changed and why?

How do you engage or connect with your community today?

10) How does your experience at GRuB influence your life today?

Potential follow-up or clarification questions:

Do you continue to apply what you learned at GRuB? If so, what and how?

Did your experience at GRuB influence your life choices after you left the program?

11) Is there anything else you would like to add?