Through the Garden Gate:

Examining 'the Edible and the Equitable' in Garden-Based Learning Programs

by

Christina C. Hansen

Department of Food Systems and Society

Marylhurst University

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Thesis Advisor: Patricia Allen, Ph.D.

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Table of Contents

Abbreviations and Acronyms

AHA	American Heart Association
ESY	Edible Schoolyard
GBL	Garden-Based Learning
NGA	National Gardening Association
RQ	Research Question

For my mother, whose love of gardens, gardening and any verdant landscape was her consuming passion and life-sustaining force. Her lifelong avocation was most likely an attempt to surround herself with a living reminder of the Irish homeland she sailed from as a young, hopeful seventeen-year old. She possessed an uncanny ability to keep any plant alive, whether indoors or out, and who surely planted at least several hundred trees in her lifetime although more likely several thousand. And, finally, who always struck me as the ‘Jane Goodall of gardening,’ both in appearance and intent.

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Abstract

Schoolyard gardens have existed in the United States for well over a century and are experiencing a sweeping national resurgence. Garden-based learning programs seek to educate students about food-related knowledge, or food literacy, albeit in an era of expanding food insecurity and food-related injustice. Thus, it is important to clarify and understand the content and major themes of these programs, in addition to to the educational theories, or pedagogies, that undergird them and their instruction about food-related 'literacies.'

Therefore, in this thesis I will investigate garden-based education as a forum for discussion about the injustices plaguing our society and how they manifest in the food system. I interrogate seven national, K-12 garden-based curricula programs. Accordingly, I pose three research questions in an effort to assess the ability of these unique educational platforms to contribute to food system and social justice knowledge. First, an investigation into the dominant themes of national-level K-12 GBL programs is conducted. Next, I investigate how these K-12 garden-based programs address food system inequities and social injustice. Finally, I identify underlying pedagogical approaches and how they might enhance critical literacy about food systems and society.

Keywords: garden-based learning, food system inequity, social justice, food literacy, critical food literacy, critical food pedagogy, environmental education, experiential education.

Chapter One

Introduction: The Potential of Garden-Based Learning Programs

> If we really want to change the food system in this world, really want to make lasting change, the greatest thing we can do is educate and empower the next generation.
>
> -Alice Waters, speech excerpt, *Lexicon of Food* webpage

On September 10th, 2015, President Obama awarded celebrity chef and food education activist Alice Waters the National Humanities Medal. In his citation, the President summarized her contributions to food and the humanities as follows: "for celebrating the bond between the ethical and the edible. As a chef, author, and advocate, Ms. Waters…celebrates integrating gardening, cooking, and education, sparking inspiration in a new generation" ("National Endowment for the Humanities", n.d.).

Alice Waters was honored by President Obama for her efforts to educate youth about all aspects of food – from seed to harvest, preparation, and consumption. Waters champions the benefits of an 'edible education' that pairs hands-on learning in outdoor, schoolyard garden classrooms with food knowledge and kitchen skills instruction using student grown produce. An essential element is that the outdoor and indoor food instruction be represented throughout the curriculum, and that this learning occur in every school, with a free lunch for every child. She regards good food as both sustenance and inspiration - and more importantly, a right - and her Edible Schoolyard Project is the tangible result of twenty years of work to that end, asserting "good food is a right not a privilege. Providing it every day brings children into a positive relationship with their health, their community, and the environment" (Waters, 2008, p. 43).

The Edible Schoolyard Project represents a rapidly proliferating trend in education that pairs classroom learning with an adjacent schoolyard garden, a concept often referred to as

"*garden-based learning*, [or] GBL" (Desmond, Grieshop & Subramaniam, 2004, p. 15). Schoolyard gardens have existed in the United States for well over a century and are experiencing a sweeping national resurgence thanks to the efforts of First Lady Michelle Obama, celebrity chef activists like Alice Waters and Jaime Oliver, popular food authors, school food advocates, heath and nutrition experts, educators, and parents, to name a few. Further, such programs generally aim to educate students about food-related knowledge and skills, albeit amid global rises in food insecurity and food-related injustice. Since these programs contribute to student knowledge of food and the food system in an era of expanding food inequity, it is important to clarify and understand the content and major themes of these programs, in addition to the educational theories, or pedagogies, that undergird these programs and their instruction about food-related 'literacies.' After all, today's youth are the ones who will inherit the challenges we are unable to resolve and it is essential to craft the most relevant and comprehensive curricula possible so that they are prepared.

It is my firm belief that food-related education is an important component to a complete, well-rounded education that instills knowledge about our world and necessary life skills. Moreover, I believe it is important to identify and examine the themes within national K-12 garden-based learning programs to better understand current food literacy education. Thus, President Obama's statement in Alice Water's National Humanities Medal citation regarding "the bond between the ethical and the edible" are the thrust of this paper – I explore how garden-based learning programs can educate our youth about food ("the edible"), *and* about the need for increased social justice in the food system ("the ethical"), in order provide the next generation the knowledge and skills to craft a more just and equitable world. First, I present the background and significance of garden-based education, identifying my research problem and primary

research questions. Next, I delineate my research methodologies and methods. Then, I chronicle my research findings, perform analysis, and state my contributions for future research and further study, before summarizing the garden-based learning phenomenon and its social change potential.

Chapter Two

Background and Significance: Garden-Based Learning and Food Literacy in K-12 Settings

As we look to interrogate and understand current school garden programs and their social change potential, it is first necessary to situate them within the educational realm. In doing so, I will chronicle the history of garden-based learning to present times, moving on to the background and relevance for inclusion of social justice themes when educating about food and the food system. Then I will identify the pedagogical approaches that both undergird garden-learning and support social justice awareness in an effort to enhance K-12 literacy about the seen and unseen realities in food systems and society.

A History of Schoolyard Gardens

Despite their recent proliferation, school gardens are not new phenomena. Our current garden-related education trend can be traced back at least several hundred years to the musings, concerns and writings of philosophers and education reformers.

Philosophical Origins of Garden-Based Learning

A host of publications have covered the historical roots of garden-based learning. *The School Garden* (Schwab, 1879) was one of the very first texts about the phenomenon and focused primarily on gardens in Austria, Germany and other western European countries during the nineteenth century. A few decades later the subject of school gardens was again examined, first as a dedicated chapter in the volume *Progress of Education in the Century* (Klemm & Hughes, 1903), and then as part of a discussion about 'nature-study' from the *Journal of Royal Horticultural Society* (Wallace, 1904-1905). *Practical Art Monthly* (Leake,1906), chronicled the history of school gardens in similar depth and detail as the two previously mentioned works. Much more recently, the comprehensive publication by Desmond et al. (2004) for the

International Institute for Educational Planning and the Food and Agriculture Organization of the United Nations, brings to a contemporary and global audience the same history of GBL while both describing current trends in garden learning and profiling successful programs.

These publications draw attention to a number of key figures who theorized about and supported the establishment of school gardens as early as the 1500s. John Amos Comenius, priest, philosopher and education theorist, widely considered the "father of modern education" ("John Amos Comenius", n.d.), is credited with opining the relevance for universal schoolyard gardens "where children at times can leisurely gaze on trees, flowers and herbs, and be taught to enjoy them" (Klemm & Hughes, 1903, p. 433). A century later the philosopher and sometimes teacher, Jean-Jacques Rousseau, asserted the benefit of education inclusive of "garden work" (Soetard, 1999). Soon afterward, Johann Heinrich Pestalozzi, failed farmer and eventual teacher, educational theorist and reformer, championed the power of observation and believed that learning must transcend words though an emphasis on the development of "the triad – heart, head, hand" (Soetard, 1999, p. 8). This period of educational thinking associated with the writings of Jean-Jacques Rousseau and the reformist work of Pestalozzi is identified by Soetard (1999) as "the history of the modern pedagogical movement" (p.8). Indeed, following the work of Pestalozzi the notion of educational theory and how and where knowledge is conveyed received increasing attention.

Friedrich Froebel, one of the most widely known educational philosophers and a student of Pestalozzi, theorized that children learn best through "hands-on" experiences and as Sealy (2001) asserts, "was one of the most effective proponents of school gardens in the nineteenth century" (as cited in Desmond et al., p. 34). Froebel is perhaps most widely remembered as "founder of the kindergarten" (Curtis, n.d.), the style of early childhood education which

translates as “a garden for children, a location where they can observe and interact with nature, and also a garden of children, where they themselves can grow and develop in freedom from arbitrary imperatives” (“Froebelweb”, n.d.). Significantly, Froebel’s emphasis on education rooted in tangible, schoolyard garden experiences has obvious linkages to the contemporary theory of experiential education, a concept explored and researched throughout most of the twentieth century, as chronicled by Lewis & Williams (1994).

Thus, as the twentieth-century dawned, a new wave of education theorists endorsed school garden learning. Maria Montessori, early childhood educator and Montessori method founder, believed that “education is a natural process spontaneously carried out by the human individual, and is acquired not by listening to words but by experiences upon the environment” (“Experiential Learning UC Davis”, n.d.). Even more influential than Montessori, John Dewey, education researcher and founder of the Chicago Laboratory School, valued garden-based experiences as key elements to the intellectual *and* practical aspects of a child’s growth such that he focused on crafting education that would enable children “to do things and live in a community which gave them real, guided experiences which fostered their capacity to contribute to society” (“Experiential Learning UC Davis”, n.d.). Dewey’s thoughts regarding the role and value of experiential components in education encapsulates several centuries of theorists and theory regarding school gardens and garden-based learning. Accordingly, Dewey is credited with leading “the experiential education movement” (“Experiential Learning UC Davis”, n.d.). Drawing on these historical roots of GBL theory, how did garden learning physically manifest in Europe and the U.S.?

Beyond Theory: Garden-Based Learning in Practice

Throughout the nineteenth century, various countries in Europe were keen to incorporate the emerging educational philosophy, or pedagogy, of education through experience – especially with respect to gardens. During Froebel's time, a number of school gardens were sited at German private schools and kindergartens, with growing interest spurred by garden-learning campaigners featured in the aforementioned (1879) publication *The School Garden*. Austria, particularly, was an early-adopter, referring to the concept as the "Schwab system" (Schwab, 1879, p. 16), where by 1869 the requirement for school gardens was codified. Specifically, Schwab described how the law required that "with every country school should be connected an experimental garden" (p. 5), and an addendum added in 1870 that specified "instruction in natural history shall be given in an appropriately arranged school garden" (Klemm & Hughes, 1903, p. 434). Importantly, Schwab campaigned to include school gardens at all schools, rural and urban, private and public.

Parallel to the expansion of school gardens in Austria, the school garden trend took off in Germany, Switzerland, Belgium, France, Sweden, and the British Isles. As mentioned, Germany had school gardens from the earlier half of the nineteenth century while in Switzerland, support for school gardens by the federal government and the Agricultural Society of Switzerland aided proliferation in the 1880's (Klemm & Hughes, 1903). Similar to Austria, in 1873 Belgium codified a requirement "that each school have a garden" and France also issued a federal mandate regarding school gardens, stating "no plan of a school building in the country, to which the State contributes, shall be accepted unless a garden is attached" (Klemm & Hughes, 1903, p. 436).

Accordingly, Geddes (1906) notes that just after the turn of the century, France could claim that "twenty-eight thousand of thirty-three thousand schools had school gardens" (Forrest & Ingram, 2003, p. 91). Thus, the rapid expansion of school gardens is evidenced by the fact that "In Austro-Hungary, the classical land of school gardens, there are…over 18,000" (Forrest & Ingram, 2003, p. 91), while "by 1905 over 100,000 school gardens in Europe" (Desmond, et al., 2004, p. 28). Sweden's government also supported the establishment of school gardens, although they were noted by Schwab to only extend to "country schools" (Schwab, 1867, p. 15-16). As the trend proliferated it took root in the British Isles, as well, most commonly in England and Scotland, and to a lesser extent Ireland and Wales (Forrest & Ingram, 2003, p. 88).

Across the Atlantic a parallel trend of school garden establishment was occurring, initially driven by similar desires to foster connections to nature and rural agrarianism. Leading the "nature study" effort in the U.S. was educator Liberty Hyde Bailey, an advocate for the value of incorporating nature into curriculum, believing it had the ability to "make learning more interactive through the use of nature in the classroom" (Trellised, 1997, p. 163). Further, Bailey believed gardens served a uniquely useful purpose for imparting science-related knowledge and referred to the gardens as a "living laboratory" (Trelstad, 1997, p. 163).

Ann Vileisis, in Kitchen Literacy (2008), details how farmers and rural dwellers increasingly moved off the land at the end of the 19th century and how this shift contributed to the school garden movement. Concurrent with the change in people's livelihood and lifestyle was a transformation in the food system to adopt emerging industrial practices, thereby satisfying the demand of urban dwellers for inexpensive and convenient food. As a result, children were now growing up with little to no knowledge of farm-life nor the ability to recognize, let alone

plant, tend, harvest, or prepare nature's bounty. The concern described at that time may sound strikingly familiar today, Vileisis writes:

> The prospect of an increasingly urban society losing its rudimentary knowledge of the natural world seemed an entirely new and fearsome possibility. Some warned that physical distance from nature would lead to psychological divergence from nature, with untold effect. America's children – the largest generation ever to be raised chiefly in cities – would be most at risk. (p. 103)

Hence, Vileisis summarizes the fear at that time that children would grow up without an innate understanding of nature, that this ignorance would be detrimental to their well-being and ultimately rob rural communities of their human capital. Interestingly, the risk of limited exposure to nature persists as posited by Louv (2005) in what he terms 'nature-deficit disorder'. It is a notion with a growing following, especially in my region of western Washington, evidenced by the increasing prevalence of 'outdoor' and 'forest' preschools that "deliberately put nature at the heart of their programs" (Mongeau, 2015).

Thus, the U.S. experienced a wave of efforts in the late nineteenth and early twentieth centuries to familiarize children with nature and "the origins of their foods" (Vileisis, 2008, p. 105). These 'Nature-Study' programs were not small-scale but broad efforts to include as many public schoolchildren as possible. Vileisis (2008) notes that "In 1897, more than twenty-six thousand students raised plants in Nature-Study programs in New York State alone" (p. 106). And while Desmond et al. (2004) identify that the *initial* implementation of school gardens in America lacked vocational and "practical" (p. 35) orientation for the more philosophical concerns of the 'Nature-Study' movement, by 1910 the essence of school garden programs was increasingly incorporating more vocational and life skills. Miller (1908) outlines aspects of early U.S. school gardens that imparted useful and realistic knowledge to Cleveland, OH school

children and young adults. Further, as a result of the meaningful engagement, one school was able to assist older male students with employment due to their marketable skills (p. 579). Miller (1908) points to the very applicable aspects of garden learning with the observation that "Children can readily learn to which great groups of plants we are indebted for our food, clothing and shelter" (p. 577).

Rather quickly, then, the focus of the earliest school garden programs in the U.S. transitioned to more practical and marketable skills as World War I approached. Thus, the Nature-Study movement was subsumed by the themes of home economics, agricultural production during war time, and to greater degrees – the methods of Dewey to achieve Progressive-minded reforms, especially with respect to immigrant children. This increasing momentum to provide guidance to America's newest and youngest residents is summarized by Telstar (1997): "Over time, the school gardens looked less like Liberty Hyde Bailey would have imagined them…and more like a 'good citizen factory'" (p. 165).

As the school garden trend accelerated in the early twentieth century, the federal government provided increasing support in the form of the United States School Garden Army (USSGA). Federal support to the USSGA hoped to spread agricultural knowledge to non-rural students given that rural youth were already involved in agricultural education efforts (Hayden-Smith, 2006, p. 2). The program was enacted to augment food production as the national food system struggled to keep pace during World War I, and the food grown by the "little machines" (Telstar, 1997, p. 165), was primarily destined for public purchase. Further, by 1916 "over 1 million students contributed to the production of food during the war effort" (Desmond et al., 2004, p. 35) and akin to the school garden movement, Progressive reformers increasingly

supported the USSGA "as a desirable, even necessary, antidote to the disastrous social consequences of excessive urbanization" (Hayden-Smith, 2006, p. 4).

Despite the gardens' various contributions, as the war ended these programs were increasingly unpopular, owing to the loss of government backing, teacher under-utilization, and alternative student pursuits. As a result, the school gardens were "doomed to disappear only three decades after they had been introduced in this country" (Telstar, 1997, p. 172). And although Victory Gardens resurfaced during World War II, they were quickly eclipsed afterwards by reutilization of schoolyard space and curricular reform (Desmond et al., 2004, p. 35). Anecdotally, Hayden-Smith (2006) notes that the USSGA is the historical basis for our current 4-H and agricultural extension programs; so while the gardens did not survive in a physical sense, their contribution is significant owing to those farming-centric programs that continue to this day and their belief in and development of hands-on education.

Garden-Based Learning in the late Twentieth Century

School gardens flourished once again in the late 1960's and early 1970's, in part due to the environmental movement that "led to the conception of school gardens as a progressive, interactive educational link for children to understand and connect with 'life processes' and environmental understanding" (Desmond et al., 2004, p. 36). However, federal education policies did not embrace these learning methods and it took until the 1990's for education policy-makers to embrace GBL's underlying theories of experiential and environmental education (Desmond et al., 2004). It is from this point that the school garden trend emerged in its modern form. Currently, a multitude of programs exist, at the local, regional, state, national and international level – each with their respective curricular objectives and themes. These themes

warrant examination in order to reveal current attitudes regarding the food system and what merits inclusion in garden-based learning.

Food Literacy

In researching garden-based curricula, I noted the term 'food literacy' as a descriptor for the current trend of food education. The term is broad and can apply to nearly every type of food-related instruction, including that delivered via school GBL programs (Goldstein, 2014). Problematically, it is also relatively new and therefore varied interpretations exist among recent scholars including Colatruglio & Slater (2014), Goldstein (2014), Vidgen & Gallegos (2014), Slater (2013), Sumner (2015) and Wever (2015). The multiple angles, nuances, underlying motivations, and outcomes of food literacy are well summarized by Sumner (2015), who asserts that what is prioritized in food education curricula reveals prevailing power structures and special interests with respect to food, the food system and what is knowable and/or should be learned. Moreover, Sumner remarks that given increasing environmental, political, and social challenges and decreasing equity and justice, the content of food literacy programs is of particular importance.

Thus, understanding how food education is approached and the decisions undergirding what knowledge is conveyed are as important as the intended outcomes.

For example, a small non-profit based in Sacramento, CA, the *Food Literacy Center*, devotes their time and efforts "…to inspire kids to eat their vegetables. We teach low-income elementary children cooking and nutrition to improve our health, environment and economy" (Food Literacy Center, 2016). Further, the site defines food literacy as "understanding the story of one's food, from farm to table and back to the soil; the knowledge and ability to make informed choices that support one's health, community, and the environment" (Food Literacy

Center, 2016). Given the wide applicability of that definition, it is easy to conceive that nearly any food education program could qualify as food literacy and see why the term is contentious. Conversely, the internationally known chef and food education activist, Jamie Oliver, campaigns for and solicits support to "help make practical food education a compulsory part of the school curriculum in every G20 country" (Food Revolution Day, 2016). Chef Oliver 's reference to "practical food education" is what so many of the national U.S. garden-based programs have in common: they seek to combine hands-on garden learning with myriad food-related educational objectives, be it health, nutrition, kitchen-skills, environmental education, etc. For simplicity, in this paper I accept an all-encompassing definition of food literacy where *all* food-related education counts as 'food literacy,' thereby validating *all* food education as important and relevant. I will allow the data and my analysis of the data to determine underlying educational motivations and theories.

Digging for Justice

While food literacy conveys a number of key concepts and skills regarding food and the food system, what themes, if any, remain silent in GBL? Moreover, how do these programs address food system equity and social justice?

What is Social Justice?

First, I offer a definition of social justice. Bell (2013) defines social justice as:

> both a process and a goal. The goal of social justice is full and equal participation of all groups in a society that is mutually shaped to meet their needs…[and]…involves social actors who have a sense of their own agency as well as a sense of social responsibility toward and with others, their society, and the broader world in which we live. (p. 21)

Bell subsequently emphasizes the pressing need to have a suitable definition of social justice, without which it is impossible to understand root causes and work for social change.

For Bell (2013), a number of key forms of oppression are the starting point for defining and understanding social injustice, including racism, classism, and sexism. Understood more generally, oppression manifests as discrimination (Bell, 2013), and the news wires are replete with continual episodes of discrimination, injury and death attributable to social conflicts over race, gender and sexual orientation. Additionally, income disparity in society results in unequal access to housing, property, education, and of course, food. Further, equity with regard to services such as health care is another justice indicator. Thus, how might we as a society counter the oppressive injustices and inequities that affect so many, especially with regard to food and the food system?

Allen (2008) explores pathways to bring greater justice to the American alternative agrifood system, similarly illuminating the social roots of food system inequity: "Since the agrifood system is socially organized, problems are the product of social choices, embodied in traditions, institutions, and legal and economic structures" (p. 160). For Allen, the social choices that undergird injustice is a key concept for students to conceptualize and will help them "feel more empowered to participate in their resolution" (Allen, 2008, p. 160). Thus, if students are aware of the factors that contribute to injustice, they do not see oppression and discrimination as unchangeable social realities. Instead, such students believe they can affect positive social change. This is an important point, providing relevance for inclusion of social justice themes in education as an essential tool with which to instill the social "agency" and social "responsibility" referred to earlier (Bell, 2013, p. 21). Only by making visible how social factors result in social injustices can oppression and inequity be addressed and remedied, especially within the food system.

Food System Injustice

The increase in K-12 garden-based learning programs occurs at a time of growing global food insecurity and social inequity. While previous scholarship has identified learning outcomes associated with GBL (Williams and Dixon, 2013), examining school gardens for evidence of social justice, for instance to determine the presence of instruction about food security and food justice themes, is highly relevant given that food-related inequity is an issue affecting every country worldwide and virtually every neighborhood in the United States. In my town this takes the form of four different food pantries, scores of "community" meals served on varying nights of the week at local churches, and special programs to provide food to K-12 students on weekends during the school year and weekdays throughout the summer.

Injustices within the food system take myriad forms, often silent and hidden from everyday consumers. For example, food system inequities are commonly missing from discussions about local food, organics and sustainable agriculture (Allen, 2004). While these important food trends pay great attention to the manner in which food is produced and processed, scant light is shed on the working conditions of farm labor, factory workers, restaurant staff and food service workers, in addition to the prevalent and growing crisis of food insecurity within American society and around the globe.

Much literature is devoted to these pressing food access problems and their root causes, often encapsulated in the competing theories of food security, food sovereignty, and food justice, to name a few. Akin to our discussion of social justice, these frameworks for understanding food system problems are themselves difficult to define and occupy contested spaces. Moreover, the need for food system change as a result of these inequities is increasingly a topic of discussion among food policy and food system scholars, activists, popular food writers, civil society and

grassroots organizations, and, of course, the general public. Interestingly, such discourse occurs astride federal, state and local efforts to address food-related health and nutrition deficits, especially in the K-12 educational arena. Given the manner in which food education and garden-based learning are proliferating in an era of increasing food insecurity and social injustice, I believe it is worth examining GBL programs for social justice themes. Further, what scholarly literature, if any, interrogate garden-based learning for social justice inclusion?

Planting the Seeds of Justice

After looking at GBL programs' dominant themes and how they currently address food system realities and injustices, my inquiry focuses on pathways to enhance literacy about food systems and social justice in garden-based curricula.

Which Seeds to Plant?

An inquiry regarding possible ways in which to enrich current school garden curricula necessitates a discussion of educational theories, or pedagogies. Theories about how to approach the science of education and teaching reveal a great deal about the philosophical assumptions concerning food, food systems and how schools elect to educate about these topics. In selecting one or two approaches over others, various learning outcomes are prioritized along with how best to convey knowledge.

In the case of garden-based learning, teaching about food and the food system may or may not include aspects of social justice – a point that reveals pedagogical beliefs about food and what methods may best suit infusing food curricula with greater social equity awareness. Therefore, a clear understanding of the pedagogical underpinnings of current programs and the educational approaches inclusive of social justice learning are necessary prior to an exploration

of how garden learning curricula might facilitate socially conscious learning and contribute to social change.

Summarizing the Research Problem and Research Questions

The mandate to educate about social justice is increasingly relevant given the various injustices present in the food system, the persistent rise in income inequity and resulting social disparities. Yet, as schoolyard gardens explode in popularity in order to teach health and nutrition topics and reacquaint youth with outdoor spaces, do they promote more critical inquiry of the food system? Specifically, does garden-based education incorporate lessons inclusive of the increasing rates of food insecurity and other food-related challenges that result from class, gender, income, and race inequality in society? In choosing to examine school garden programs, I confer a substantial degree of power and value to education and its ability to accomplish social change, by way of generating awareness in youth of social injustices and inequities and the assumption that students are then equipped and inclined to work to improve conditions within society for themselves and fellow citizens.

Further, my inquiry into structured K-12 garden learning programs is not an attempt to devalue other avenues and forms of knowledge – rather, a mode to optimize garden-based learning in concert with socially grounded realities of our food system that positions and illuminates the work and sacrifice of all participants. It also assumes the inherent desire and ability for all persons to experience and enjoy social equity and social justice as we define it in democratic societies.

Therefore, in this thesis I will investigate garden-based food literacy education as a forum for discussion about the injustices plaguing our society and how they manifest in the food system. In doing so, I will first conduct an assessment of the themes within national K-12

garden-based learning programs. Next, I will investigate how these K-12 garden-based programs address food system inequities and social injustice. Significantly, if social equity topics are absent from food-related programs, it represents an educational void about the food system and our world amid expanding injustice. Further, what underlying pedagogical approaches are revealed by my first two questions and how might these be combined to enhance literacy about food systems and society. Thus, this research examines the intent of K-12 garden-based learning because I want to identify the themes and pedagogies of national programs in order to help readers determine the ability of such programs to contribute to a justice-oriented understanding of the food system so that their social change potential is better understood. Efforts to draft more critical theory-based curricula holds the potential for a more inclusive and justice-minded education system.

Chapter Three

Methodology and Methods: A Scoping Review of Current Program Themes

In this chapter, I catalog the research methodologies and methods that guide my inquiry into school garden curricula and why they best fit my specific research. In doing so, I will detail how I approach my topic and my theoretical orientation to it, fully exploring my epistemology and positionality. I will clarify the logic employed in selecting which GBL programs to examine, including the tools I used for collecting and analyzing my data set and why my methodological and method approaches best suit each respective research question.

Epistemological Orientation

With a view to examine garden-based curricula in K-12 settings for their ability to address the realities of our food system and society, I am obliged to reflect and delineate my ideas about society, education and equity. My views about education and society have influenced my research choice and are germane to this discussion, given that my research questions explore an expanding trend in education for 1) themes, 2) evidence of social justice, and 3) the ability of various pedagogies to contribute to social awareness and social change. I believe scholarly inquiry can influence curricula to educate children and youth about our social world, including the hidden power structures undergirding curricular content, what social realities may be hidden from view, and how education can equip individuals for personal and social change.

These considerations and questions are relevant and timely, as garden-based learning programs continue to proliferate amid increasing levels of global food insecurity and social inequity and it is unclear if the content of said programs address the social realities of our food system. As a second-year master's student in Food Systems and Society, I have come to understand and appreciate that the food system is much more than growing organic vegetables,

eating local and knowing your farmer. Accordingly, I believe food literacy and garden-based learning should be much more than the topical discussion of food-centric themes. While it is important that children and youth understand the principles of healthful eating, I contend that it is equally important, if not more so, that they understand the realities and forces at work in the food system and where opportunities exist for positive change – both personal and systemic.

Positionality

My positionality stems from a middle-class upbringing that valued education and a strong Protestant work ethic to improve one's individual circumstances and socio-economic status, in combination with unique travel opportunities at a young age, post-secondary education concentrated in the social sciences, and more recently, a growing consciousness about social justice and food system issues. During my formative years my family traveled widely and I believe the exposure to a variety of different cultures and standards of living broadened my perspective and sensitized me to the vastly different experiences of other people.

Later, my undergraduate studies consisted of an interdisciplinary urban planning concentration that further developed my sensitivities to the social, economic, and political circumstances and experiences of fellow citizens. Finally, during the last several years I have experienced an ever-evolving consciousness regarding food, the global food system and more recently, the injustices and inequities inherent in society that manifest seen and unseen in the food system.

As a result of these experiences and influences, and as the mother of a school-age child, I am struck by the rapid increase in school gardens and the various discussions surrounding food in schools seemingly without a critical approach to food literacy. In my opinion, education

should be an opportunity to create awareness about our world and equip the next generation to craft a more just and equitable world.

Epistemology

My epistemology builds on my positionality regarding the power of education to instill awareness about our society in order to create a more just and equitable world, coupled with the curiosity to explore the pedagogical orientations of the emerging school garden trend against pedagogical options that may contribute to more critical examination of food and our food system. In order to raise a critical eye to the topic of school garden curricula and 'food literacy', I value critical theory and the work of Brazilian educator Paulo Freire. Especially instructive is Sumner's (2015) application of Freire's theories of more reflective and socially-conscious language learning to the context of food education, where "food literacy is not only inherently political, but should also encourage people to read the world, not just a recipe book or a grocery list" (p. 134, para. 2). Accordingly, Sumner asserts that people can expand their relationship with and understanding about food beyond their role as consumer, and begin to see and reflect about the food system's true impact on individual and community health.

Thus, my central epistemology is reliant on the belief that critical pedagogy can contribute to social change by making possible a deeper student understanding of the seen and unseen realities in our global food system. In my opinion, valid knowledge stems from critical study of an issue and such knowledge contributes to authentic awareness of the circumstances of others.

Methodology

In my research, I employ scoping literature review and grounded theory methodologies in order to understand and interrogate garden-based learning programs and explore pedagogical

avenues for inclusion of critical food studies and social justice within garden-based programs. The selection of scoping review methodologies contributes to my overarching research objective to gather information about national K-12 GBL programs to better understand the phenomena, and from analysis of the data and literature, utilize grounded theory to synthesize pathways that enhance current curricula and identify the social change potential of these programs. A summary follows depicting this methodological process with respect to each of my research questions.

Scoping Literature Review

Research Question 1 (RQ1)

My first question seeks to understand the principal themes in current national K-12 garden-based learning curricula, and I answer RQ1 utilizing a scoping literature review methodology. Scoping literature reviews, as discussed and defined by Arskey and O'Malley (2005), locate literature about and gain understanding of a phenomenon without undertaking the detailed demands and time required of a *systematic* literature review, often in support of meta-synthesis projects. As they note, this abbreviated approach is equally valid and precise, and they outline five distinct steps to conduct such reviews that meet academic methodological standards. One element they include that is common in systematic reviews is consultation by one or more stakeholders (Arskey & O'Malley, 2005, pp. 28-29), an obtrusive technique that did not fit within the constraints of my thesis' guidelines to use only unobtrusive methods. Still, I believe I apply the scoping literature review methodology with strict and traceable accuracy while making general use of the steps suggested by Carnwell and Daly (2001) on how to conduct critical literature reviews.

Also, my use of a scoping review may strike some as unconventional and less obvious than its standard uses; however, my desire to examine a research topic and understand it in broad

terms correlated closely to RQ1. Thus, my principal objective in asking RQ1 is to create understanding about national K-12 garden-based learning, and using a scoping literature methodology, locate, clarify and understand the themes in these national programs. As defined by Colquhoun et al. (2014), a scoping review is "a form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting, and synthesizing existing knowledge" (pp. 1293-1294).

Research Question 2 (RQ2)

For my second research question, I utilize the same scoping literature review methodology as RQ1. As with RQ1, selection of a scoping literature review methodology to answer RQ2 affords the ability to examine national K-12 GBL programs for general content and craft understanding about a phenomenon, in this case, social justice themes in garden-based learning. One objective of using a scoping review methodology can be the identification of research gaps (Arskey & O'Malley, 2005, p. 21), which may characterize a large portion of my research findings in RQ2 since I seek evidence of social justice content – an element of the food system often silenced and unexamined. Thus, this methodological choice offers the potential to identify research and literature voids; in this case, GBL program content regarding social justice themes within the expanding school garden trend.

Grounded Theory

Research Question 3 (RQ3)

I answer my third research question regarding the pedagogical approaches that undergird GBL curricula, social justice learning, and opportunities to enhance current curricula by drawing on a classic grounded theory (GCT) methodology (Deady, 2011). Specifically, I selected

grounded theory to search for and identify relevant pedagogies rooted in critical theory and oriented to impart greater social awareness and effect social change.

Although a contested space with constantly emerging perspectives and interpretations, grounded theory is the best methodological tool for me to answer RQ3 because it facilitates conclusions from the data-based results of RQ1 and RQ2 about underlying pedagogies, relevant pedagogies to advance critical understanding about social justice and to posit pathways for curricular enhancement and illuminate the social change potential of GBL. I subscribe to the notion that grounded theory can help researchers remain receptive and accepting of theories that emerge from the data (Glaser, 2005). Further, CGT's lack of constraints with respect to emergent theories, especially with respect to "casual or serendipitous observations" (Deady, 2011, p. 43), would serve well my need to see where my findings and analysis of GBL curricula lead me, especially with respect to pedagogy and how to enhance existing programs.

Methods

Within the research questions, I will employ three principal methods to understand, interrogate and explore the inclusion of critical food studies and social justice within garden-based learning curricula – specifically thematic analysis and grounded theory in combination with scoping literature review.

Thematic Analysis

Research Question 1 (RQ1)

For my first RQ, I draw on the work of Fereday and Muir-Cochrane (2006) who summarize thematic analysis as "a form of pattern recognition within the data, where emerging themes become the categories for analysis" (p. 4). Within the garden-based learning programs that I scrutinize, the identification of "mission-specific" themes and the analysis of subsequent

categories is the essence of RQ1. Through such analysis I will be able to help the reader better understand the themes of national, K-12 garden-based programs and the philosophical orientation towards food literacy.

Further, Thomas and Harden (2008) discuss thematic analysis as tool to conduct meta-studies like meta-ethnography and meta-synthesis, terming it "thematic synthesis" (Background section, para. 2). In conducting thematic synthesis, they describe three steps that correlate to how I coded and interpreted my data to produce illuminating themes about garden-based learning. Specifically, thematic synthesis involves "free line-by-line coding…; the organization of these 'free codes' into related areas to construct 'descriptive' themes; and the development of 'analytic' themes" (Thomas and Harden, 2008, Detailed methods for thematic synthesis section, para. 1). Their method references transitioning from coding and *descriptive* theme formation based on the data, to more nuanced and informative *analytic* themes that serve my inquiry objectives to deduce understanding about the dominant topics in GBL programs.

Research Question 2 (RQ2)

RQ2 concerns examination of the selected garden-learning program information for social justice themes, drawing from the same data set as RQ1. Thus, thematic analysis is again the optimal method to carefully screen and analyze the selected data for the presence of topics related to justice and equity in the food system. Similar to RQ1, I utilize the three stages described by Thomas & Harden (2008): 1) free coding; 2) descriptive coding; and, 3) analytic coding.

Scoping Literature Review and Grounded Theory

Research Question 3 (RQ3)

Much like my RQ1 and RQ2 methodology discussion of scoping literature reviews, I embrace the perspective asserted by Arskey & O'Malley (2005) that a scoping study seeks "to map *rapidly* the key concepts underpinning a research area" (p. 21), and serves well when the phenomenon is relatively unexamined. In the case of RQ3, I apply a scoping literature review method to my RQ1 and RQ2 findings to identify existing GBL programs' underlying pedagogies and the pedagogies that facilitate social justice learning. Once these pedagogies are identified, I employ grounded theory to explore how current programs might incorporate such educational theories to enhance literacy about food systems and society.

RQ3 analysis draws on the thematic analysis methods of RQ1 and RQ2, in that it performs advanced analysis based on identified themes – in this case the 'analytic' themes emergent from my data. It is my hope that analysis of RQ1 and RQ2 themes for their pedagogical orientation and underpinnings sheds light on the food literacy philosophies of K-12 GBL programs and the potential to craft more inclusive and justice-minded curricula.

Data Selection, Collection and Analysis

Data Selection

RQ1 and RQ2 draw from the same data set. Both questions seek general context and understanding about the phenomenon of garden-based learning in order to answer pointed questions concerning food literacy education in the subject programs. In addition, keeping the data set consistent for my first two questions, including which aspects of the programs examined, ultimately felt the most logical, academically honest, and empirical in order to perform analysis, note commonalities and differences, and, in doing so, partially answer RQ3. The other remaining

data necessary to answer RQ3 draws from a scoping literature review of social justice pedagogies, and when combined with the pedagogical orientations of the GBL programs, provides a roadmap to enhance existing GBL approaches to food literacy. I believe selecting my data in this manner facilitates the most transparent and reliable analysis, contributions and conclusions regarding my research.

Specifically, I sought descriptive data about national, K-12 garden-based learning programs from their website "About Us", "Mission Statement", "Vision Statement", and "Curriculum" pages. Not all programs had webpage content for each category, some had limited verbiage in just one or two categories and others had ample content in each. From these text sources I cataloged information about the programs' priorities for garden-based learning, curricular content and principal themes and overall priorities with respect to education about food and the food system. I acknowledge the limited scope of my data, and that it is not fully representative of GBL curricula since I did not examine *actual curricula* for themes and evidence of social justice, just program webpages. Still, I contend that what programs advertise as their mission, vision and curriculum focus are revealing in their own right and that the educational foci of GBL program curricula should reside on the very pages I examine. Again, for the sake of consistency and transparency, I narrowed my data set to elements with the highest commonality to each program versus interrogating individual lesson plans that vary by certain elements, such as age, grade, or instruction topic.

Data Sources and Collection

I located the target programs on the internet using the following three Google search terms: national K-12 garden-based learning; K-12 garden learning programs; and, school garden curriculum. From these searches and the multitude of GBL programs located, I culled those

curriculum-producing programs with a national reach and the highest recurring and cross-referenced frequency. Additionally, it was vital that they maintain robust and informative websites given that my data set would be drawn entirely from their webpages.

Accordingly, I narrowed my data set to include the six programs that are most broadly represented nationally and produce their own GBL curricula: Cornell University; Edible Schoolyard (ESY); Life Lab; National Gardening Association; Slow Food National Garden Program; United States Department of Agriculture; and Whole Kids Foundation/American Heart Association. While the USDA has a very limited curricula available, it is worthwhile to include it in this research owing to its status as our federal food and agriculture entity and what they say and prioritize with respect to school gardens and food education provides insight into the phenomena from a highly influential and policy-impacting perspective. Once the programs were identified, I collected and separated, by program, relevant text from each website in a spreadsheet under columns for "About Us," "Mission Statement," "Vision Statement," and/or "Curriculum." Again, the amount of text per category and/or program varied.

Data Analysis

RQ1

In order to answer RQ1, I examined each program and its data individually. I utilized coding techniques discussed by Saldana (2016), applying a 'splitting' approach where the data is reduced to incremental parts or segments (pp. 23-24). From this more manageable format, my first stage codes were performed line by line *In Vivo*, meaning coding terms are identified verbatim from the data set wording (Saldana, 2016, p. 4). The line-by-line coding approach also aligns with the previously stated thematic synthesis technique described (Thomas & Harden, 2008). After establishing these first-level codes, I then grouped them into descriptive categories

and performed analysis for emergent themes. These themes were then further analyzed within the context of food literacy and other food system considerations, a process outcome akin to Thomas and Harden's (2008) reference to "analytical themes". Thus, my data analysis method for RQ1 followed the essence of the aforementioned *thematic synthesis* (Thomas & Harden, 2008), with specific coding technique supplemented by Saldana (2016). Through these methods I was able to discern the principal themes in national K-12 garden-based food literacy education.

RQ2

In answering RQ2, I used the same data set and data organization as RQ1. Similarly, I employed the same coding technique based on Saldana's (2016) coding manual and Thomas and Harden's (2008) guidelines for thematic synthesis. RQ2 data analysis was somewhat different in that I applied a filter for specific social justice keywords in order to identify my first-level, In Vivo codes. I then applied keyword filters based on my discussion of social *justice* and food system *injustice* in the Background & Significance section. Following establishment of my initial codes, I proceeded, as in RQ1, to identify descriptive themes and then analytic themes. By applying theories and topics germane to food system studies to my interim themes, I generate final analysis that is a more nuanced understanding of how national K-12 garden-based learning programs address food system inequities and injustices.

RQ3

As detailed in my methodology discussion for RQ1 and RQ2, scoping reviews are generally a tool for conducting systematic literature reviews, often in conjunction with meta-synthesis and meta-reviews of pre-existing research. As outlined earlier, I utilized the scoping review concept as my methodology for answering RQ1 and RQ2 because the approach supports

the broad assessment of a phenomenon – a method in alignment with my efforts to locate GBL programs and identify their pedagogical themes.

With respect to my data analysis of RQ3, I began by collating the results of RQ1 and RQ2 into a spreadsheet categorized by theme. This provided a snapshot of the curricular themes in the seven programs and also a quick view of how they address food-system inequities and injustices. Accordingly, I then employed scoping review methods to identify in scholarly literature the underlying pedagogies of these curricular themes. Once pedagogies were identified, I deduced that a critical framework could be a key tool to apply to GBL programs as a means to reveal existing pedagogies and update curricular content to enhance literacy about food systems and society.

Data Set Limitations

Admittedly, my approach to data set selection and collection excludes many excellent programs that have online curriculum which may be in use in numerous school garden programs around the country. My inclusion criteria consisted of locating garden-based learning programs with national-level prominence, assessed by targeted keyword search results and repeated cross-references across found sites, in addition to the requirement that they promulgate program specific curricula. Moreover, it was essential that all programs included in the data set utilize a garden-based pedagogy as this is the guiding premise of my research and inquiry.

In terms of data findings, the Life Lab website offers scant information regarding mission or vision statements relative to the other programs studied. In order to collect sufficient data for analysis and comparison with other programs, I drew from a 2014 public address given by the Life Lab Education Director Whitney Cohen concerning the program's impact on education through their various garden-based learning endeavors. Entitled "Changing the Nature of

Education" it outlines Life Lab's impact thus far and their objectives for the future. In doing so, it was roughly comparable to the type of information culled from the other programs' websites regarding mission, vision and/or curricular objectives.

Further, it is worth noting that the USDA website was incredibly difficult to navigate; one section covered the community-focused People's Garden program that included reference to the value of school gardens, while the Dig In! curriculum located under the USDA's Food and Nutrition Services division is aimed at combining school gardens with nutrition education. Neither were clearly linked to one another and no central 'school garden' navigation tool existed for the USDA as a whole. However, including both sections of the USDA site provided a richer understanding of the federal entity's attitude towards school gardens and GBL, thereby enriching the understanding of garden-based programs.

Chapter Four

Results, Analysis, and Contribution

> What we know about how what we eat grows, travels and makes its way to our tables has tremendous potential to shape how we address… social concerns and perpetuate literacies that allow for a just food system and a planet that will continue to support human life. (Winslow, 2012, pp. 206-207)

Examining national school garden programs for their themes sheds light on an exploding trend in education. The value of this research is that it interrogates food-centric education and provides insight about the content of seven national, K-12 garden-based curricula programs in a manner mindful of Winslow's statement regarding the role of literacy to create equity in the food system and society. Accordingly, I pose three research questions in an effort to assess the ability of these unique educational platforms to contribute to food system and social justice knowledge. In doing so, I seek to unearth the social change potential of school garden curricula. By carefully collecting my data using sources and procedures outlined in previous sections, I catalog my findings, perform analysis, and discuss each question in detail. Consequently, I am able to provide the reader with a comprehensive and nuanced understanding of the research problem and the value of including food literacy and social justice themes in K-12 school garden curricula.

Unearthing Garden-Based Learning Themes

My first research question (RQ1) asks, "What principal themes exist in national K-12 garden-based education programs?" In order to answer RQ1, I collected and cataloged data about national-level, K-12 garden-based curriculum producing programs. All data for RQ1 was gathered from primary sources, in accordance with the aforementioned criteria using a scoping literature review methodology and thematic analysis methods.

RQ-1 Findings

Cornell University

Cornell University offers a variety of resources to schools and educators to establish and maintain gardens. The Cornell Garden-Based Learning hub also offers school garden grants and online courses in horticulture, in addition to a limited number of free, downloadable K-12 lessons.

The principal themes in the Cornell University garden-based learning resources include: supporting GBL users, such as teachers, schools and communities; promoting the use of garden-based learning approaches, asserting the positive outcomes for kids; and, a limited number of flexible, program specific lessons that are relevant population-wide.

Edible Schoolyard

The Edible Schoolyard (ESY) is a project in its third decade and spearheaded by celebrity chef Alice Waters that "connects educators around the world to build and share a K-12 edible education curriculum" ("Edible Schoolyard", n.d.). The program promotes its own specific curricula to accomplish these goals and links with other similar programs through its ESY Network and Resources components, accessible via the ESY website. There are six principal ESY-affiliated schools in addition to the first school at Martin Luther King, Jr. middle school in Berkeley, CA. Additionally, annual trainings are offered to share the ESY model to educators through the Edible Schoolyard Project.

The emergent themes from the ESY program data include: universal "edible education" curricula; food and garden literacy; healthful and non-harming food for all; free school lunches for every student; and unique curricula that imparts specific ESY food values and lifelong skills.

Life Lab

Life Lab, founded in 1979, is a garden-education entity based in Santa Cruz, CA and the longest running of the programs in my data set. Their website states that they are "a national leader in garden-based programming, curriculum and professional development" ("Life Lab", n.d.). Accordingly, they offer a variety of resources to educators, school districts, and community-based garden learning programs.

The following themes emerged from the Life Lab program data: food and garden literacy; garden-based learning as a skill promoting long-term personal and community health; the value of experiential learning for positive links to the outdoors and the physical world; the essential aspects of "dirt time" for relevant learning; general worldly knowledge (not specified); and, advancing program growth and leadership of the education niche using their specific curricula.

National Gardening Association

The National Gardening Association (NGA) through the *KidsGardening* initiative supports school gardens and youth gardening opportunities. NGA offers grants for school gardens and teacher training and resources to establish and maintain outdoor garden learning opportunities. Their unique Grow Lab curriculum can be used solely in the classroom if necessary, although primary focus is on incorporation with garden-based learning.

The following themes emerge from National Gardening Association (Grow Lab curricula) program data: advocate for garden-based learning; GBL produces positive outcomes for vitality, both personal and community-wide; garden learning contributes to personal, social and environmental progress; support for school gardens; worldly knowledge; and, their garden-based learning is driven by a specific, inquiry-based curriculum suitable for both garden and classroom instruction.

Slow Food USA

Slow Food USA is the American branch of the global organization that cherishes regional and local food and food producers. The Slow Food National School Garden Program is a national program sponsored by Slow Food USA to support kids in learning about their food and food production. Slow Food provides numerous resources for students, teachers and schools to incorporate garden-based learning into existing school curriculum. Principally, Slow Food chapters are envisioned as community hubs to start and and assist local school garden initiatives.

The data collected for the Slow Food garden program centered on the following themes: garden-based learning drives healthful choices; food, kitchen and agricultural literacy; emphasis on healthful, nutritious food; lasting personal and external community change; support to teachers, schools, families and communities; and, a program specific curriculum focused on Slow Food's recent focus on *Good, Clean and Fair* food.

USDA/People's Garden & Dig In!

The USDA is the food and agricultural arm of the US federal government. While the People's Garden section of the USDA site lacks specific school garden curriculum, it did provide insight into how the federal agency views school gardens and garden-based learning. Alternatively, within the USDA's Food & Nutrition Service there is a limited, ten lesson GBL curriculum for 5th and 6th graders focusing on creating familiarity with and access to fruits and vegetables. Accordingly, my data drew from both of theses USDA webpage sections.

The data collected for the USDA People's Garden and Dig In! school garden program focuses primarily on: advocacy of and support for gardens and garden-based learning; the widely applicable nature of garden learning for all populations within communities; the ability of GBL to promote synergistic efforts towards community self-sufficiency to address problems like food

insecurity and environmental concerns; and, how school gardens offer engaged, healthful food literacy through the limited USDA curriculum.

Whole Kids & American Heart Association (AHA)

The natural foods grocery retailer Whole Foods, by way of their child-focused foundation Whole Kids, joined forces with the AHA to combat childhood obesity and improve the health and nutrition of American kids. They offer a variety of programs, including supporting school gardens through annual grants and their own tailored garden-based learning curriculum.

The emergent themes in the Whole Kids free, downloadable program-specific curriculum guide include: healthful food and agricultural literacy; increasing healthful food access to families and communities; support to teachers, schools, families and communities; healthful impact on people; and promotion of experiential, garden-based learning using their curriculum.

RQ-1 Descriptive Categories

Following the collection and coding of all data, I employed thematic analysis to discern descriptive categories for the seven GBL curricula. Three categories emerged: 1) healthful eating; 2) hands-on food and garden familiarity; and, 3) life skills.

Healthful Eating

Within all of the seven programs, there was significant focus on GBL programs transferring knowledge of healthful eating habits, including an understanding of healthful food sources like fruits and vegetables. Additionally, several of the programs placed a significant emphasis on food choices as key to life-long health of individuals and communities. As expected, Whole Kids/AHA and Slow Food garden programs put significant emphasis on healthful food. This is unsurprising as Whole Kids is part of the Whole Foods corporation, a natural food grocery chain known for promoting whole and organic foods, and Slow Food is an

organization heavily focused on local, sustainably grown whole foods and attention on unhurried, thoughtful food preparation and consumption habits. The Whole Kids/AHA garden program was heavily food-focused versus considerations like the environment, a theme observed in other programs. Additionally, Edible Schoolyard's food preparation component of their edible education curriculum rests heavily on healthful food ingredients from their adjacent school gardens. Further, Life Lab, the National Gardening Association and the USDA's Dig In! all highlight healthful food choices in their programs.

Hands-On Food and Garden Familiarity

The hands-on learning method of school gardens is an explicit focus within five of the seven programs examined, and I would argue an element of all seven programs given that gardening is inherently participatory. Not all programs utilized the same descriptor for this style of learning, where terms ranged from "edible education" in the case of ESY ("Edible Schoolyard", n.d.), to Life Lab's "digging their hands in the soil" (Cohen, 2014), and the opportunity to "grow, cook and enjoy real food" ("Slow Food USA", n.d.) within Slow Food's curricula. In each instance, the experiential nature of these programs is a key factor in their ability to inform K-12 students with a deeper and more lasting understanding of food, the food system, and to borrow chef Jaimie Oliver's aforementioned term, 'practical' food and garden-related knowledge and skills.

Life Skills

The final category that emerged as a consistent focus in the GBL programs is life skills. While not necessarily labeled as such, analysis of the various knowledge objectives for students identified that all seven garden-based programs equip students for life-long success in a variety of ways. For instance, the ESY program materials are explicit in this regard, identifying certain

"edible education learning goals" that the program refers to as "ESY standards" inclusive of "life skills" like "communication, flexibility, and perseverance" ("Edible Schoolyard", n.d.). Life Lab extends the development of individual skills beyond individual life success to develop leaders "ready with the skills and the motivation they need" to contribute to the world as "informed, inspired, creative and collaborative leaders" (Cohen, 2014).

Similarly, the Slow Food curricula seeks to educate children about healthful eating and beneficial food choices in order to effect change in the food system. Slow Food's curriculum includes emphasis on sustainable growing practices and methods that "respect economic and social justice" ("Slow Food USA", n.d.). Whole Kids/AHA GBL materials also contain reference to healthy agricultural practices, which I consider synonymous with sustainable farming practices. Similarly, the National Gardening Association emphasizes individual and community health, connecting garden-based learning with "environmental stewardship." Finally, the USDA school garden promotion program champions the ability of GBL to transform communities and "unite neighborhoods in a common effort and inspire locally-led solutions to challenges facing our country…" ("USDA", n.d.) Further, the USDA's Dig In! curriculum focuses on educating about produce consumption in tandem with garden access and hands-on cultivation experiences. Thus, all the data set programs target the development of life skills.

RQ-1 Comprehensive Analytic Themes

Applying thematic analysis to the three descriptive categories, two comprehensive themes summarize the intent of the GBL programs: food literacy and knowledge for change.

Food Literacy

As discussed in my initial analysis of RQ-1 data, the themes of healthful eating and food skills emerged from thematic analysis of the data set. Both are represented in my broad definition

of food literacy adopted in the Background and Significance section, based on scholarly literature and the work of various food education advocates. In essence, I accept a broad interpretation of food literacy that encompasses all existing food-related education about food familiarity, kitchen skills, health and nutrition, and environmental sustainability. Given my flexibility towards the term, I also rely upon recent scholarship (Goldstein, 2014; Sumner, 2015; Wever, 2015) that highlights the omissions inherent to a more traditionally narrow definition. Such conventional views of food education fail to include a critical perspective regarding food and the food system, and therefore miss much (if not all) of the system's inequity and injustice.

Knowledge for Change

Similarly, the results of RQ-1 data analysis indicate that knowledge for change is the other analytic theme for garden-based learning programs. In these programs, personal change occurs as a result of more healthful eating habits and gaining the knowledge to make more beneficial food choices, resulting in improved personal health. Moreover, a number of programs identify "long-term" positive outcomes stemming from more healthful individual behavior with respect to food and sustainable farming methods that then translates to more healthful communities and the environment. Therefore, individuals influence and affect systemic change as a result of food choices and other intentional behaviors, such as Slow Food's emphasis on "Good, Clean and Fair" principles and the USDA's suggestion that gardens are synergistic and can help address national issues "from hunger to the environment."

And while food literacy and knowledge for change are admirable curricular goals, what implications can be drawn from these dominant themes in GBL programs?

Implications and Questions

Based on the themes that emerged from thematic analysis of the data, there are a number of aspects of the food system overlooked by these programs' curricular choices. First, the focus by all programs except one on aspects of food literacy reveals a convergence regarding the merits of selected food-related knowledge and skills, reinforcing the notion that 'healthful eating' and 'food skills' are essential knowledge. What does the prioritization of these skills and knowledge tell kids about food and the food system? I wonder how these topics are tailored for instruction in food-insecure school populations, if at all?

Further, I question the implementation of some of these curricula in food-insecure districts and wonder how they would affect low-resourced schoolchildren, given that they and their families are likely unable to afford the "healthful" food depicted in the GBL lessons. Do the kids experience shame when they continue to eat the only food their family can afford despite knowledge that their diet is contributing to personal and systemic harm? Guthman (2008) describes the notion of "bringing good food to others" and how such work is a manifestation and privileging of white perspective about food and white perceptions about how to resolve food system inequity. Extending Guthman's (2008) critique of the notion of "hands in the dirt", Matties (2016) links white food perspectives to issues of past and present colonization. Matties (2016) asserts, "When we valorize the act of getting our hands dirty in the soil, we emphasize our own triumphalist history of settling/cultivating the land and forget the history of slavery and (ongoing) colonization in North America" (Matties, 2016, para. 10). Thus, garden-based learning programs that seek to convey food literacy to students with 'dirt time' may not offer an equitable and positive learning experience for all students.

Therefore, the second phase of my data analysis addresses these important implications and considerations by interrogating the data set to determine how these garden-based programs address food-system and social inequities.

Finding Justice in the Garden

In order to unearth how school garden learning programs address social justice themes, I pose my second research question (RQ2), "how do national K-12 garden-based learning programs address food system inequities and social injustice?" As previously stated in my Methods and Methodology section, both RQ1 and RQ2 share the same data set. Additionally, like my first question, I utilize a scoping literature review methodology and a thematic analysis method to identify how the selected programs address social justice themes in GBL curricula. In order to perform thematic analysis for social justice themes, I coded the RQ1 text InVivo for food equity and social justice keywords discussed in the Background & Significance section (see Table/Figure X), subsequently identifying descriptive categories and then performing a secondary analysis to reveal comprehensive analytic themes.

RQ-2 Findings

As mentioned earlier, while the data set is not culled directly from curricular content, it does reveal the philosophical perspectives of the selected programs towards garden-based learning inclusive of food system inequities and social injustice. Again, I applied select food equity and social justice keywords to the data set to identify relevant program content. All seven programs indicate that some form of change is needed and based on these findings, I proceeded with thematic analysis to determine the RQ2 descriptive categories for the data set.

RQ2 Descriptive Categories

By performing thematic analysis to my initial RQ2 findings, several justice-oriented descriptive themes emerged from the data: personal and community health; access to healthful food; environmental considerations; empowerment of individuals and communities; and justice. I will review each in detail.

Personal and Community Nutrition

Five of the seven GBL programs identify the positive contributions school gardens and their associated learning have on personal and community nutrition. The Edible Schoolyard, Life Lab, NGA, Slow Food and Whole Kids all emphasize the value of their respective curricula to provide children an understanding and appreciation for healthful food, and thereby transform the health of individual students and the community. ESY encapsulates this approach in their emphasis on food-related "values" when describing how their curriculum equips students "with the knowledge and values to make food choices that are healthy for them, [and] their communities" ("Edible Schoolyard", n.d.). Similarly, Life Lab believes their garden curricula offers impactful learning opportunities that furnish students what they "deserve", including "to eat healthy food and be part of a healthy community" (Cohen, 2014). The Whole Kids/AHA curriculum focuses almost exclusively on healthful food and its nutritive effects, citing that their partnership aims to influence the food choices of kids, resolve childhood obesity, and "encourage community action that supports healthier kids" ("Whole Kids", n.d.). Lastly, both Slow Food and the National Gardening Association cite the importance of healthier eating and improving food choices in youth as key to personal and long-term community vitality.

Access to Healthful Food

Within the GBL programs examined, three of the seven cited the need for increased access to 'healthful' food, especially fresh fruits and vegetables, as imperative for active, productive living. Interestingly, this term is not specifically defined in these programs but is accepted lexicon as an understood term among public health and food education advocates. This likely occurs as a result of the marketing of USDA standards ('MyPlate') and the Produce for Better Health Foundation ('MoreMatters') campaign regarding daily intake of fresh fruit and vegetables. Specifically, the Edible School Yard, Whole Kids/AHA, and USDA programs all include support for improved access to healthy food, where both ESY and Whole Kids/AHA specifically note the need for such access in schools. The Edible Schoolyard Project is noteworthy in its support for universal 'edible education' in every school, inclusive of free lunch; no other program so unequivocally addressed the social justice theme of equitable access to food.

Environmental Considerations

Equating garden-based learning with care and conservancy of the environment is a theme present in five of the seven programs. In general, the programs link healthful eating and sustainable food practices with greater awareness of the overall benefits for communities and the environment. Specifically, ESY, NGA and USDA programs explicitly use the keyword "environment" when discussing how GBL is an opportunity to impart knowledge of food-related policies and choices that can reduce ecological impact and improve conservancy. For example, NGA states a principal mission of their Garden in Every School initiative is to "encourage environmental stewardship through educational gardening programs" ("National Gardening Association", 2014, p. 2). Similarly, the USDA website asserts how gardens positively impact the life of a community and cultivate grassroots efforts towards the "challenges facing our

country – from hunger to the environment" ("USDA", n.d.). Life Lab and Slow Food draw on the same logic, applying the term "sustainability" to the ecological benefits of garden learning. Slow Food is particularly straightforward in this regard, selecting "Clean" as one of their curricula's three pillars, where the notion of "Clean" is defined as "gardening for sustainability" ("Slow Food USA", n.d.). Further, Life Lab purports to instill valuable skills in youth through their garden curricula that, in turn, result in leaders that can effect a number of outcomes including "sustainability" (Cohen, 2014).

Empowerment of Individuals and Communities

An additional theme related to equity and justice within the GBL programs examined was the notion of empowerment, for individuals and/or entire communities. Four of the seven programs in the data set specifically use the term "empower" in relation to the impact of garden learning. Cornell, ESY, NGA and Slow Food programs all desire an emancipatory effect through the experience and knowledge gained via school garden programs. The Edible Schoolyard definitively asserts their curricular goal is to "empower students" in a way that benefits the students personally and collectively. Slow Food seeks a similar objective, stating that "through increased confidence, knowledge acquisition and skill building, we want to empower children to become active participants in their food choices" ("Slow Food USA", n.d.). The National Gardening Association advertises the desire to "empower every generation" to discover personal and collective vitality and strength, whereas Cornell envisions "empowering" garden curricula as key to providing impactful and valuable learning. Thus, for these programs the notion of empowerment is imparted to the individual. Alternatively, while the USDA specifically mentions the ability of gardens to effect community-wide change by giving communities the tools to be 'self-sufficient' with regard to food production and access, and that gardens have a "synergistic

effect", the emphasis in this context stems from community gardens and not those sited at schools.

Justice

While justice is the essence of RQ2 and highly pertinent to the discussion of food system equity, the term *justice* was used by only two programs in the data set – Life Lab and Slow Food. Life Lab refers to justice in a general and undefined way, by including it in their discussion of how their curricula and garden learning contribute to raising emerging leaders that "work for justice" ("Life Lab", n.d.). Conversely, Slow Food is much more direct in describing their meaning of justice. The third pillar of their *Good, Clean and Fair* curricula entails educating about the importance of improving socio-economic conditions in the food system, where *Fair* generates student awareness of "producing food that *respects* [emphasis added] economic and social justice" ("Slow Food USA", n.d.). Thus, while the Fair curriculum acknowledges the importance of economic and social justice with respect to food production, the extent to which Fair actually *advances* justice may be limited.

As of submission, Slow Food is still working on releasing all three elements of their curricula. *Good* is freely available, *Clean* due out early 2016 and *Fair* due to be released in fall of 2016. While not officially released, I was able to locate a complete draft version of a curriculum guide inclusive of all three pillars via the Slow Food NYC site, although it is unclear if the NYC program is being implemented in tandem with a school garden or only for 'indoor' classroom learning.

RQ-2 Comprehensive Analytic Themes

Applying thematic analysis to the descriptive categories of RQ2 resulted in two comprehensive analytic themes to describe the presence of equity and justice in the selected

garden-based learning programs: 1) public health; and, 2) social justice. I will discuss both and provide examples and research from the scholarly literature, where applicable.

Public Health

In analyzing the five descriptive equity and justice categories, those of personal and community nutrition, access to healthful food and concern for the environment can all be aggregated under the analytic theme of public health. I believe the common focus of garden-based learning about these public health issues offers students introductory awareness of social justice themes and an opportunity to educate youth about possible connections between health and justice. In fact, an expanding body of scholarly literature supports public health as a social justice indicator.

Gostin and Powers (2006) revisit the centrality of justice within the public health field and opine how social inequity is a key point that must be addressed, especially in instances of health emergencies, as it impacts the ability for people and communities to access resources that contribute to health and well-being. They state, "[a]n integral part of bringing good health to all is the task of identifying and ameliorating patterns of systematic disadvantage that undermine the well-being of people whose prospects for good health are so limited that their life choices are not even remotely like those of others" (Gostin and Powers, 2006, p. 3). Further, Gostin and Powers (2006) identify key "health determinants" that include "the natural environment" (p. 7), echoing the ecological considerations of food choices addressed in five of the seven garden programs in my study.

Therefore, the common focus by the garden-learning programs in my data set on healthful food to achieve improved personal and community nutrition, coupled with efforts to improve student access to healthful food and positive environmental impact, indicates some level

of food system and social inequity awareness by these programs. However, in light of the literature regarding "bringing good food to others" (Guthman, 2008; Matties, 2016), the emphasis on healthful food is commendable albeit potentially patronizing and assumptive for those lacking the resources of time, money and transportation that are integral to the consumption of healthful food. Thus, given that food access is often a significant barrier for under-resourced populations, much room remains for programs to address why access differs for populations and/or communities and its impact on public health.

Donohoe (2012) outlines a vision for greater unity between community health equity and social advocacy, explaining how various social justice markers are intimately tied to public health and how health workers are ill-prepared to tackle the connection given that "modern medical training underemphasizes the social, economic, environmental, and cultural contributions to health and illness, also known as the social determinants of health." ("Public Health and Social Justice", n.d.). Thus, while many of the garden-based learning programs' lessons in food literacy educate about healthful eating and associated community health benefits, in addition to concern for the environment and its role in public health, there remains space for discussion of the social determinants of health. Moreover, these factors are critical elements to seeing and addressing food system inequities and social injustices.

Further, the access to healthful food and its contribution to personal and community nutrition and overall health is dependent upon healthful food and farming systems. The aspects of food production and processing that involves food laborers and workers' exposure to unsafe conditions and toxins has clear and obvious links to public health. The importance of food and farming systems that support sustainable environments is affirmed by sites such as Healthy Food

Action, where health care practitioners are informed about and encouraged to act on behalf of food system inequities. The site explains,

> Health professionals…see every day the downstream impacts of a broken food system….Cancer and other diseases are increasingly linked to pesticide use and other toxins rife within our food and farming system…("Healthy Food Action", n.d.).

This type of health and social justice advocacy that focuses on the impact of what food is consumed as well as how it is produced and the conditions of those engaged in its production, is echoed by the National Association of County and City Health Officials, or NACCHO. The NACCHO website highlights programs "to advance the capacity of local health departments to confront the root causes of inequities in the distribution of disease and illness…and why social arrangements and institutions generate those inequities" ("NACCHO", n.d.). The site offers information, links to training and even a "toolkit" that includes published literature and other materials to support "the social change necessary to eliminate health inequities" ("NACCHO", n.d.). In the prescient words of Beauchamp (1976), who makes the important link between social justice and public health, "public health is ultimately and essentially an ethical enterprise committed to the notion that all persons are entitled to protection against the hazards of this world and to the minimization of death and disability in society" (p. 108). Thus, the notion of health equity through healthful food, environmental sustainability and sustainable food systems is indicative of social justice learning in garden-based learning programs.

Social Justice

The second analytical theme discerned from the data in response to RQ2 was social justice. As noted, only two programs definitively mention justice and within one, the term is not defined nor qualified with examples. The first, Slow Food, expressly mentions *respecting* economic and social justice as components of *fair* food, however there is no other reference or

mention on the Slow Food National School Garden Program website about bringing increased fairness to the food system. Additionally, while the Fair component of the national Slow Food curriculum is forthcoming, there is a full-length draft module crafted by Slow Food NYC and Urban Harvest. Urban Harvest is a non-profit devoted to supporting the education of youth "with hands-on, educational programs that give children an understanding of what good food is: where it comes from; how it is produced and distributed; how healthy it is; and, of course, how good it tastes" ("UrbanHarvest", n.d.). The Slow Food New York City (draft) class guide includes all three pillars of the Slow Food curriculum, including a rather comprehensive look at food system inequities. Thus, the Slow Food school garden program, in conjunction with Urban Harvest, is poised to create awareness of some of the unseen social inequities and injustices in the food system through their curricula.

For Life Lab, on the other hand, the notion of justice referred to on their website occurred once and was undefined, making it difficult to assess in what capacity and to what extent Life Lab desires leaders "to work for justice" (Cohen, 2014). This ambiguity around the notion of justice impacts its ability to direct action and dilutes its priority in food system change. It also illustrates the importance of clearly defining terms and program mission and/or vision statements with respect to desired curricular outcomes.

With respect to notions of social justice in GBL programs, the Slow Food/Urban Harvest curriculum offers a basis from which to model other programs' discussions of food system equity. Further, this module is versatile and can be taught independent of a schoolyard garden. The curriculum guide suggests window boxes and fresh produce as suitable alternatives to garden-based learning, indicative of other justice-oriented *classroom-based* curricula I discuss with respect to RQ3 findings. Again, it is laudable that attention is cast on these topics, however

the missing link is that only one program, Slow Food, explicitly discusses the need for economic and social justice.

Implications and Questions

The garden learning programs' focus on personal and community nutrition, access to healthful food, the environment, individual and community empowerment, and justice, speak to the comprehensive themes of public health and social justice. Specifically, healthful food and sustainability are notions of health equity critical for to social justice and their presence within GBL curricular programs highlight a shared desire to educate for overall collective vitality. Although Donohoe (2012) and Gostin and Powers (2006) assert the social justice component inherent in addressing health equity, the overall presence of social justice themes within garden-based learning programs is narrow and reveals only a slice of the invisible injustices experienced by laborers, food service workers, and those struggling with adequate food access. Moreover, this gap in curricular content suggests a widespread failure to inform and educate youth about food-related justice issues. Thus, it is now appropriate to examine which educational theories, or pedagogies, undergird these GBL programs and how programs might expand social justice learning in their curricula.

The How and Why of Garden Learning

Thus far, my research questions have explored the themes of national garden-based learning programs and how they address food system inequity and social injustice. My third research question seeks an expanded analysis by understanding the pedagogical underpinnings of these programs and what they teach. Therefore, (RQ3) extends this inquiry and asks, "what underlying pedagogical approaches contribute to garden-based curricula and how might the incorporation of justice-minded pedagogies enhance literacy about food systems and society?" In

order to answer RQ3, I collected and analyzed data as outlined in Chapter 3 and used grounded theory analysis of RQ1 and RQ2 findings to determine the pedagogical orientation of the programs. I then turned to secondary sources of textual data from scholarly, peer-reviewed journals and academic texts to identify pedagogies inclusive and/or supportive of social justice themes that may enhance awareness of food system inequities. Further, in combination with inquiry about which pedagogies support social justice learning, I will provide an assessment of how these garden-based programs can enhance awareness about social injustices in the food system using existing educational theories and learning tools.

Which pedagogies undergird GBL curricula?

Using grounded theory to analyze the data set, I determined that the most common pedagogies guiding instruction are experiential and environmental education. Through these two pedagogies GBL programs convey the themes identified in RQ1 and RQ2, and when combined with other pedagogical options, have the potential to enhance literacy about food systems and society.

Experiential Education

Much like the discussion of the work of Froebel and Dewey in the Background and Significance section, experiential education is marked by an emphasis on 'doing' and the benefits derived from combining learning with 'hands on' elements. Specifically, Dewey believed that "experiential learning meant a cycle of 'trying' and 'undergoing' by becoming aware of a problem, getting an idea, trying out a response, experiencing the consequences, and either confirming or modifying previous conceptions" (Lewis & Williams, 1994, p. 6). Dewey's support for outdoor education and the use of gardens, although only one facet of the experiential

movement (Lewis & Williams, 1994), is mirrored in today's garden-based education trend. Drawing directly from the data set, I will identify programs' reliance on experiential pedagogy.

All of the examined GBL curriculum emphasize the value in experiential and/or engaged methods and suggest transformative effects are associated with the pedagogy. Specifically, Life Lab directly refers to the use of "outdoor classrooms" and discusses the impact of daily doses of "dirt time" as part of a larger focus on and legitimization of experiential education techniques for food literacy (Cohen, 2014). Life Lab claims these "hands-on experiences" hold the promise of "a connection to the natural world" and offer the opportunity to develop leaders with the skills most needed to address the world's challenges (Cohen, 2014). By focusing on providing educational experiences that more meaningfully connect kids to coursework, support is lent to the notion that to achieve impactful learning students must be physically engaged or *doing* lesson material. Thus, engagement emerges as a key aspect of experiential educational methods.

Accordingly, the Whole Kids/AHA program website includes reference to the positive effects that engaging and relevant food literacy instruction can have on kids and their eating habits:

> At Whole Kids Foundation we know that the more kids know and feel connected to their food, the more curious they become about how things grow or taste, and the more willing they are to try new foods. This is why we believe in edible garden learning spaces. ("Whole Kids", n.d.)

Similarly, the other five GBL programs examined – Cornell University, Edible Schoolyard, National Gardening Association, Slow Food, and the USDA – all offer corresponding linkages between the power of children learning garden, food and kitchen literacy skills with their own hands, and the ability of such education to both engage students and create positive effects like improved eating habits, increased knowledge of food and applicable skills for personal and

systemic change. The systemic change believed possible by the experiential education of garden-based learning includes addressing food insecurity, environmental damage through unsustainable farming methods and community health. The Edible Schoolyard gives voice to the power of engaged learning-by-doing and the ability of such instruction to generate transformative life effects: “Integrating this curriculum into schools can transform the health and values of every child in America” (“Edible Schoolyard”, n.d.). “Whole child” approaches like that of Steiner and Montessori utilize experiential learning and schoolyard gardens, and offer further insight. Waters (2008) references her training as a Montessori teacher as part inspiration for advocating an experiential food literacy curriculum for kids that is now the national Edible Schoolyard Project.

Environmental Education

Parallel to the preceding discussion about experiential education pedagogy, environmental education emerges as the other dominant pedagogy in the data set. In each program I discerned the common thread of using food literacy instruction as a means to gain scientific awareness and science-related knowledge as it pertains to gardens, plants and the growing of food. This theme aligns with and implies environmental awareness and knowledge. As discussed in relation to RQ2, five of the seven programs include emphasis on the environment and sustainability. And like the discussion of experiential education pedagogy, these GBL programs link gaining knowledge about the environment with engagement of youth to the natural world and the long-term objective of transformative learning that cultivates environmentalism and the necessary skills to address future ecological challenges.

Desmond et al. (2004) affirm the primacy of experiential and environmental education pedagogies within garden-based learning (p. 22). With respect to environmental education they

mention the roles of "ecological and agricultural literacies" (p. 23), which for analysis, I group in the environmental education category.

Which pedagogies facilitate social justice learning?

Following identification of the pedagogies underpinning the dominant GBL themes revealed by RQ1 and RQ2, attention is warranted to identify those pedagogies that contribute to social justice learning. Identification of pedagogies utilizing a critical perspective to promote more nuanced learning about the world is in perfect keeping with this paper's intent to deliver more revealing and 'critical' food literacy knowledge. Similar pedagogies that provide general aid to such 'critical' learning will also be discussed. Finally, I will touch on the need to educate teachers about such themes and theories in order to support their inclusion in curriculum and effective instruction.

Critical Pedagogy

Critical pedagogy, based on the work of Freire (1995 [1970]), is an approach to education that positions awareness and examination of the issues underlying a topic as the method to achieving a more informed and balanced education, especially seeking the democratic ideals of equality and (social) justice, and a consciousness of the social world we all inhabit (Braa & Callero, 2006; Kraver, 2007). In reference to experiential education, Lewis & Williams (1994) assert that Freire's work can be a bridge between experiential education and transformational learning that culminates in "social change" (p. 7).

Eco-justice and Eco-pedagogy

Additional discourse concerning educating for social justice suggests myriad nuances, and in doing so, expands the discussion to include progressive forms of cultural and environmental justice. The work of Bowers (2001) and Kahn (2010) encapsulate many of these

social, cultural and environmental justice principles into one concept: eco-justice. Kahn (2010) specifically calls for an "eco-justice pedagogy" that plants the seeds for a truly equitable and just society based on a cohesive community, be it local or global. Additionally, the concept of eco-justice includes economic, environmental and indigenous rights criteria as key to achieving justice. How we educate our kids and the curriculum selected is dependent on the dominant social ideologies – ones which Kahn (2010) attributes to globalized, neoliberal economics predicated on the exploitation of land, labor and non-dominant cultures and associated knowledge. The notion of neo-liberal economics and the exploitation of land and non-dominant cultures is closely aligned with food system scholarship by Guthman (2008) about white privilege and Matties (2016) concerning colonization.

Now that social justice pedagogies are identified and understood, I will discuss how they might enhance literacy about food systems and society.

How might current GBL curricula enhance literacy of food systems and society?

Thus, the final element of (RQ3) asks: how might the incorporation of justice-minded pedagogies enhance literacy about food systems and society?

The Case for Critical Food Literacy

Electing to focus education and food literacy efforts on only select aspects of our complex and highly inequitable food system ignores the experiences of human, animal and plant-life involved in food's aforementioned long and often troubled journey from seed to table. The choice by most GBL programs to exclude these themes results in cursory learning that lacks realistic consideration of our food system's production, processing, transportation and retail steps, to name just a few, and the social inequity imbedded in each.

While the correlation of common food literacy learning objectives across programs is understandable, such narrow education fails to account for increasing rates of food insecurity and social inequity in our society. These increasingly prevalent symptoms of social injustice correlate with a growing student population unable to appreciate and potentially alienated by certain food literacy lessons currently emphasized in garden-based curricula. How would the immigrant child of farm laborers who spends summer breaks in the fields alongside her parents feel during a lesson about growing your own food, the value of organic and local produce, or a visit to a local farm?

Further, my initial inquiry and search for data set programs detected the inclusion of social justice themes in a number of classroom-only food literacy curricula, thus suggesting the presence of critical theory (and more obviously, critical food literacy) in those programs. The discovery of several international, classroom-based food literacy curricula inclusive of critical food studies and a strong social equity emphasis (OXFAM, UN/FAO) also suggests a shared and proliferating mindset to educate our youth about these increasingly relevant topics. These programs collectively suggest how instruction and awareness about food system equity within food literacy education is available, yet underemphasized – indicative of the invisibility of the food system's injustices.

Given that my findings revealed a split between garden-based programs that lack themes of justice and classroom-based programs that are more inclusive of justice-based instruction, I contend that the disparity suggests an opportunity for optimizing food literacy curricula. Otherwise, curricula centered narrowly on science-centric topics like health and nutrition reinforce those subjects as relevant and important knowledge for all students/citizens and ignore the increasingly relevant experiences and social injustices endured by less-privileged students. In

addition, many garden-based curricula emphasize alternative food system trends, like local and organic, which have the potential to alienate an ever-increasing swath of students. Key is that these increasingly popular food system beliefs and practices reinforce many social inequities surrounding food and our food system.

The Era of Critical Food Pedagogy

Recent scholarship referred to earlier in the paper concerns food literacy that is inclusive of critical analysis of the food system, what I term 'critical food literacy.' The work of Goldstein (2014), Sumner (2015) and Wever (2015) all extend the notion of critical food literacy and advocate for a new era of food education inclusive of critical pedagogy, or 'critical food pedagogy'.

Contribution

The identification of garden-based curriculum that enables effective, if not optimal, knowledge production about our social world offers key links between experiential learning, critical inquiry and action-oriented learning outcomes for food literacy and social justice.

The Power of Social-Justice Oriented Education

Based on my findings, there is a need to incorporate justice-minded GBL curricula into existing instructional materials and meet standardized learning objectives. In order to increase the knowledge outcomes and social change potential of "critical food literacy," I recommend incorporating the *classroom-based* curricula's social justice components into *garden-based* learning programs. Once this is accomplished, if program analysis and learning outcomes indicate acquisition of "critical food literacy" about the food system and students are action-oriented in their communities with respect to food system and/or social initiatives, the social change potential can be positively evaluated and reported. Additionally, more demonstrative

discourse towards equity and justice issues is needed to adequately illuminate the silent and unseen deleterious spaces within the food system.

Education that values critical literacy skills may indicate a roadmap to incorporate “social justice literacy” into all types of learning at all ages, and be a valuable tool for educators, administrators, parents, policy advocates, and policy makers, encouraging broad curricular revision and an increased orientation of education and society-at-large towards the realities of social inequity and injustice.

Chapter Five

Conclusion: The Power to Create Edible and Equitable Outcomes in GBL Curricula

In no small measure, food and the global food system provide a window to understanding society, including its inequities and injustices, ourselves, and the world's diverse cultures. Food literacy should be inclusive of these relevant socio-cultural themes. Studying food and the food system present the opportunity to explore virtually every academic subject, not just the topical study of food, and provides an avenue for a more holistic approach to a balanced, well-rounded education. Further, supplementing hands-on, experiential and engaged garden-based learning with critical discussion about food system issues holds the potential to generate social justice understanding and compassion among primary and secondary students.

My results and analysis suggest a pathway to convey knowledge about food, the food system, and social justice to achieve edible and equitable education goals. The widespread application and incorporation of critical inquiry in tandem with garden-based, experiential education for critical food literacy should be studied more closely and in more detail to determine if the anticipated social change potential is valid. Future research that examines actual curricula for evidence of social justice instruction instead of program descriptions of their curricula promises more detailed and pedagogically significant results. Additionally, applying a discourse analysis to program descriptions of what they teach is another possible avenue for inquiry. Moreover, the courage to question the necessity of school gardens as learning resources is a worthy thread for future study, as I have come to realize the degree to which gardens are incredibly resource-intensive for schools, teachers and parent/community volunteers. If similar curricular outcomes are possible within classroom-only settings, tremendous time, money and

energy could be recouped and diverted to other aspects of the school-day. In my view, more inquiry and research about classroom-based critical food literacy curricula is warranted.

So much of the injustice and inequity in the world is due to our inability to see and comprehend the realities of others. I began my research suspecting that a majority of the garden-based education programs in America do not address or even give cursory mention to the various food-related challenges experienced by so many of our fellow citizens and community members. As I conclude my research, I am aware of several food literacy programs that are inclusive of social justice, albeit not necessarily part of garden-based learning. Importantly, this existing curricula instructs in a manner that reduces the privilege-laden, culturally-biased knowledge assumptions that many garden-based and food literacy curricula currently contain.

Accordingly, we must open our eyes and the eyes of our children if we are going to resolve the expanding food insecurity and social injustice crises in our society. Garden-based learning programs, including highly esteemed ones like Alice Waters' Edible Schoolyard, must go farther to incorporate critical food literacy lessons that support and promote learning about all aspects of food and the food system so that we can learn about and advocate for the edible and the equitable. In doing so, we equip our youth with greater social awareness and the necessary understanding to contribute to positive social change and resolve many of society's most pressing challenges.

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