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Engaging Community Food Systems through Learning Garden Programs: Oregon Food Bank's Seed to Supper Program

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ABSTRACT

The purpose of this study was to discover whether learning garden programs increase access to locally grown foods and successfully empower and include food insecure populations. This study examined the Oregon Food Bank's *Seed to Supper* program which situates garden-based learning in food insecure communities. Through a mixed-methods community-based research process, this study found that community building, learner empowerment and sustainability leadership in place-based learning garden programs increased access to locally grown foods for food insecure populations. When food insecure populations participated in these learning garden programs they often engaged in practices described in the literature as the "web of inclusion" (Helgesen, 1995). When food insecure populations were engaged in these practices, participation in food democracy and food justice increased. Additionally, participation in learning gardens led to sustainability leadership and increased access to food literacy, which led to greater community health and engaged, local community food systems.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1: Introduction

Learning Garden Scene 1: Brookplace: A Growing Learning Garden Community

It was the first annual health fair day at Brookplace Housing Complex in the Portland, Oregon area. The late summer sun shone on the bountiful garden beds as people gathered in groups around the information tables hosted by healthcare professionals talking about food, household safety, and other health-related topics. The barbeque filled the air with the smell of turkey burgers as the fair goers stood in line for free fresh blueberry smoothies.

The Brookplace public housing complex is a bustling, vibrant community and their learning garden is often at the center of this community/neighborhood. The members of the Brookplace community are considered food insecure due to low-income levels and the distances they live from affordable local fresh food. However, Brookplace is different from other housing complexes. Members of this community have initiated a learning garden where gardening classes and potlucks take place. Thirty of the residents grow fresh produce in this garden and build relationships with their neighbors while working together.

Because of its vibrant community garden, Brookplace is an example of a community working toward a sustainable community food system. Sustainable food systems embrace the values of the sustainability movement by honoring the viability of the natural environment for future generations. Sustainable food systems provide more access to resources used to produce, process, distribute and consume food. Additionally, sustainable food systems empower people within

social, political and economic contexts (Center for Agroecology & Sustainable Food Systems, 2010). Brookplace shows the potential of learning gardens to promote sustainability, community and empowerment for residents. The Oregon Food Bank's *Seed to Supper* learning garden program has been a catalyst and resource for sustainable change at the Brookplace gardens for its members through its goals to create community food security, increase self-reliance and improve nutrition through food security. The *Seed to Supper* program is building sustainable community food systems through learning garden workshops, gardening classes and nutritious use of locally grown foods and thus helps communities and neighborhoods make a difference for its members' food security. The purpose of this study was to discover whether and how learning garden programs such as the Seed to Supper increase participants' access to locally grown food and successfully include and empower food insecure people and their communities.

Historic Patterns that have Influenced Food Insecurity and the Rise of Food Banks and Learning Gardens

This chapter explains and defines the background and history of food insecurity and the response from food banks to create local solutions to food insecurity. There are many political and economic patterns that have influenced food insecurity in the United States. The history of recent food insecurity provides context for Oregon Food Bank's *Seed to Supper* learning garden program. This chapter begins with an overview of the political and economic underpinnings of learning gardens within the constructs of globalization and the corporatization of food systems—locally, nationally and globally—as well as the role of food banks and

learning gardens within this political system. Historic patterns which have influenced food insecurity and the rise of food banks in the latter 20th century provide a perspective for this study.

After examining this historical context, this chapter describes what the local food movement in Portland, Oregon has done to address food insecurity and then specifically introduces Oregon Food Bank's Learning garden program—*Seed to Supper.* The chapter concludes with a review of the research questions explored in this study.

What is Food Insecurity?

By examining food insecurity we can better understand the context for sustainable community food systems in today's large-scale globalized corporate food systems. This study examines food insecurity in the United States, and how learning gardens impact local food systems in the Portland, Oregon region. Food security and access to locally-grown foods have become increasingly difficult for millions of people in the United States. Food security has been defined as the ability for communities of people to have monetary and physical access to healthy and culturally appropriate foods (Hawken, 2007; Winne, 2008). Food security ensures that all people have consistent access to healthy and culturally appropriate foods (Hawken, 2007). Anderson and Cook (1998) describe food security as:

    … access by all people at all times to enough food for an active healthy life and

    includes at a minimum: a) the ready availability of nutritionally adequate and

    safe foods, and b) the assured ability to acquire acceptable foods in socially

acceptable ways (e.g. without resorting to emergency food supplies, scavenging, stealing, and other coping strategies). Food insecurity exists whenever [a] or [b] is limited or uncertain (p. 143).

Food insecurity is a complex issue in today's globalized food system and activist Paul Hawken (2007) advocates for both national food supplies and policies, and for personal self-sufficiency, thus creating balance between subsidized foods and the knowledge and land available to grow food locally and for exports. According to Hawken (2007) food systems have become a complex balance in a growing global economy.

The lack of food security has developed from many decades of economic and agricultural policies that have created a global (large-scale and centralized) food system that has disrupted local and sustainable community food systems. Large-scaled food systems have created barriers for access to locally grown and culturally appropriate foods for many populations (Winne, 2008; Poppendieck, 1998). The agricultural shifts implemented during and following the *Green Revolution* that took place in the mid 20th century have had an impact on local food systems and contributed to changes in food patterns. During the *Green Revolution,* the economic and political landscape adapted from supporting smaller-scaled agrarian philosophies and practices to supporting larger-scaled chemical and technological systems.

Agricultural, Economic, and Political Patterns of the mid-to-late 20th Century

The *Green Revolution* was an extraordinary moment in the history of modern food systems that changed patterns of agriculture throughout the globe. Initially sponsored by the Rockefeller Foundation (McMichaels, 2008), the "*paquete tecnológico* or technological package began in Mexico," (Barndt, 2008) and included hybrid seeds, agrochemicals, large-scale water systems and heavy duty farming machinery that introduced a new and modern way to raise crops. This industrialization of agriculture spread throughout the third world to developing countries and became know as the *Green Revolution* (Barndt, 2008). The Green Revolution promised to eradicate hunger and food insecurity worldwide and insured that U.S. agricultural interests would prosper and feed the world (McMichaels, 2008). This trend developed throughout the 1940s and 1950s and prospered into the 1970s impacting small-scaled agricultural traditions.

During the 1970s, the creation of a large scaled, global and centralized food system developed along side the rise of a free-market economy. As free-market and neoliberal economic policies of the 1970s shifted the government support of federally funded social welfare programs to the private sector, the social safety nets of the 1960s War on Poverty began to disappear (McMichaels, 2008; Poppendieck, 1998). These safety nets included food stamps, welfare, public housing, the Head start program for underprivileged children, affordable higher education and other basic entitlements. This decline of publically supported safety net programs created the need for food banks and programs to help food insecure populations.

As safety net programs declined, food insecurity was exacerbated by large-scale population shifts in cities and rural communities as well as economic decline due to the oil embargo of the 1970s, decreased manufacturing jobs and diminishing natural resources (Winne, 2008). In the United States, these trends translated into fewer lucrative manufacturing jobs and a growing insecurity about the environment and the resources that had been taken for granted by post WWII populations.

Digging into the complexity of the United States' hunger issues, the beginnings of global economic policies supported by the United Nations' New International Economic Order (NIEO) in the 1970s, focused on large-scale corporate world order and less government/nation-state controls (McMichaels, 2008). This UN policy played a role in both the growing food insecurity and the development of industrialized global food systems. As global food systems prospered for transnational corporate interests and profits, the phenomenon of the "paradox of hunger" amid the plenty, impacted many populations throughout the world (McMichaels, 2008; Poppendieck, 1998). In the United States, emergency food programs and hunger relief efforts began to form in the 1970s and 1980s, and food banks began to re-distribute the food surpluses generated from the industrialized and global food systems. The United States, the land of plenty, experienced growing food insecurity in urban settings and lack of access to affordable and healthy foods for increasing numbers of communities (Winne, 2008).

Food deserts began to emerge in urban settings. As middle class populations vacated urban centers for the suburbs in the 1970s, supermarkets, with

vast selections and affordable products, also vacated to the suburbs, leaving behind

fast food convenient stores and restaurants to fill in the gaps (Winne, 2008). The

USDA defines a food desert as a "*low-income census tract* where a substantial

number or share of residents has *low access* to a supermarket or large grocery

store" (Ver Ploeg, et al.). Food deserts proliferated on the landscape as the urban to

suburban migrations continued through the 1980s.

1980s-2000s: Emphasis on Economic Reform Impacts Food Security

The earlier economic and agricultural policies explained above would set the

scene for later expansion of corporate driven food systems. Local food systems and

social safety net systems declined at the same time and impacted food security.

With the momentum for less government spending on social safety nets, the 1980s

firmly established free market ideologies and neoliberal economics that dominated

America's food systems (McMichaels, 2008; Poppendieck, 1998; Winne, 2008). The

ideology of a trickle-down economy that would take care of the hungry through

increased private charity and the power of individual giving was instituted. In the

1980s, food banks were growing in numbers in order to accommodate the

increasing number of food insecure communities (Poppendieck, 1998; Winne,

2008). Following the free market reforms of Reagan administration in the 1980s, in

the 1990s the Clinton administration instigated welfare reform, with reductions in

welfare support and stricter enforcement of food stamp policies.

In the new political climate of the 1990s Clinton administration, where

poverty was once managed, "we were ending welfare, not poverty, as we knew it"

(Winne, 2008, p. xx). Emergency food activists, researchers and social justice

advocates Poppendieck (1998), Winne (2008), and Gottlieb & Joshi (2010) cite this

critical policy change as a pivotal point for America's hunger relief agencies. This

powerful ideological change has had a direct impact on today's hunger relief

policies, which focus on eliminating hunger at its roots and on the proliferation of

self-reliance programs including urban learning garden programs.

The Rise of the Counterculture and its Impact on Food Security

The rise of America's hunger relief programs along with community learning

gardens was also impacted by the counterculture response to industrialized food

systems of the latter 20th century. The counterculture response has had an impact

on today's food justice and community food systems (Belasco, 2007; Gottlieb &

Joshi, 2010).

The second half of the 20th century was a period of declining access to

healthy and locally-produced foods. At the same time, an interest in and revival of

"growing your own food" and the "back to nature movement" co-existed and was

growing steadily into a full-blown food movement. Belasco (2007) has written a

chronicle of the counterculture response to the industrialization of food,

documenting that much of the liberal response to the "mainstream food-military-

industrial complex… was seen as industrialism gone berserk, wrecking the delicate

balances of eternity" (p. 25). The new left was disillusioned and observed

worldwide symptoms of ecological imbalance (Belasco, 2007). According to Belasco

(2007), the early counterculture food movement created a consumerism that

eventually developed into natural foods branding and the organic food movement. This early rendition of the local food movement from the 1970s has grown and more recently has turned its attention from organic and safe foods to locally-grown foods and to the promotion of food justice and sustainability.

The Food Movement of the 2000s: Food Justice, Learning Gardens and Community Food Systems

As food justice and sustainability agendas influenced the food movement of the 2000s, grassroots groups and local communities took action. Winne (2008) describes the outcomes of these grassroots efforts to create community food systems as a time when farmers markets, community supported agriculture farms, and community gardens were "exploding in numbers" and food democracy was being cultivated by local organizations and food policy councils. There has been an emphasis on economic and social justice (Winne, 2008, p. x). These local food activities, with a history spanning four decades, have fostered and gained strength in the sustainability movements of the 21st century.

The food justice and sustainability movements have been closely aligned with the environmental movement through the use of activism and grassroots efforts (Hawken, 2007; Gottleib & Joshi, 2010). Both the sustainability and food justice movements focus on social disparities and core issues of equity, empowerment, and social change. Food justice advocates strive to build healthier food systems (Gottleib & Joshi, 2010). Central to food justice is a clear definition of "food system." Gottleib & Joshi (2010) write: "a food system is best

described as the entire set of activities and relationships that make up various food pathways from seed to table and how these might influence our foods and communities" (p. 5). With these food pathways clearly defined, many food justice groups mobilized to create local solutions to help alleviate food insecurity (Winne, 2008).

One solution brought about by the influence of environmental activism and the sustainability movement contributed to a national obsession with community gardening (Lawson, 2005). Food banks began to use learning gardens as an educational tool to promote self-reliance and improve access to fresh locally grown foods.

Just as the counterculture advocated for growing one's own food in the 1970s, food justice advocates have focused on community learning garden programs in the 2000s as a remedy for food insecurity and as a way to build local networks for sustainable food systems. The development of sustainable local food systems has been used to create strategies to address many of the inequities affecting our society and environment due to an unsustainable and unjust food system (Gottbieb & Joshi, 2010). The learning garden is included as one of the strategies to address food insecurity and to create spaces that empower individuals within the context of self-reliance. In response to a dramatic and environmentally damaging industrial food system, the rise of food banks, and programs like the Oregon Food Bank's *Seed to Supper* learning

garden program, have contributed to a surge of activity and concern over the United States' increasing food insecure populations.

Rise of Food Banks and Learning Gardens

With the growing numbers of food insecure populations, food banks were forced to create larger emergency food distribution centers and to develop social services to accommodate the lack of social safety nets (Gottlieb & Joshi, 2010; Poppendieck, 1998; Winne, 2008). Recent statistics from the USDA, (2012) reveal in record numbers that approximately 44.7 million Americans are receiving food stamps, renamed the Supplemental Nutrition Assistance Program (SNAP) in the 2008 Farm Bill. While the combined forces of economic decline, global warming, diminishing supplies of natural resources, and exploding human populations impact our planet, the local food banks and food justice activists have made efforts to assist underserved urban areas with programs such as learning gardens, farmer's markets and Community Supported Agriculture (Gottlieb & Joshi, 2010; Winne, 2008).

As food security in the United States has become unstable, food banks have stepped in to help alleviate hunger and food insecurity through emergency food systems. Fisher (2005), in his opening comments to the Community Food Security Coalition postulated that no group has taken on the role of alleviating food insecurity better than the network of food banks throughout the U.S. These groups have tried to shape the economic and political policies that often cause hunger including poverty, joblessness, lack of health care and education. Fisher states:

…increasingly, groups such as food banks, shelters, and churches, while

continuing to feed people in hunger and house the homeless, are sponsoring

food security related programs that included food sector job training,

nutrition education, healthier food choices, community gardens, links to local

farms, and economic development (2005, p. 4).

Why have food banks taken on these multiple roles? And how can a learning garden

improve food security? The answers to these questions unfold as we examine what

the learning garden can teach us. The learning garden has captured the collective

imagination of United States (Gottlieb & Joshi, 2010). The recent garden installation

at the White House illustrates the renewed emphasis on growing our own food. As

briefly described, the role of food banks has a forty-year history stemming from the

economic and political activities from the 1940s through the 2000s that have

influenced our food systems. Within this context, learning gardens have become

places for creating food access, empowerment, food literacy and sustainability.

Why Study Learning Gardens?

Learning gardens have been loosely defined over the decades and often have

been referred to as victory gardens, community gardens or urban learning gardens.

Many learning gardens have been affiliated with children and schools and for at-risk

students and adults (Lawson, 2005). For the purpose of this study, the working

definition for Garden-Based Learning (GBL), as described by Desmond, Grieshop

and Subramaniam (2002) best defines a learning garden as: … "simply an

instructional strategy that utilizes a garden as a teaching tool. The pedagogy is

based on experiential education, which is applied in the living laboratory of the garden" (p. 9).

While learning gardens have proliferated throughout history during economic hard times, and are often seen as a "panacea" for building self reliance and empowerment, there is also the fear that "they can become a tool for paternalistic goals or [that] the goals become too broad to be achievable"(Lawson, 2005, p. 293). Much of what we attribute to learning gardens and the altruistic themes that embody them have not been thoroughly researched over the past few centuries and anecdotal evidence is largely what academics, urban planners and educators have used to base much of the discussion about learning gardens (Lawson, 2005). Lawson (2005) writes, "the downside is the high ideals associated with gardening rarely can be documented or verified. The tendency to layer multiple agendas on gardens makes achievable objectives difficult to ascertain..." (p. 11). This lack of evidence-based research motivated this research focusing on the learning garden in the social context of food security and access to locally grown foods as well as notion that these programs can build self-reliance through learning gardens.

The next section addresses the local food movement in Portland, Oregon and its focus on increased access to locally grown foods, and the importance of sustainability in the local food movement. This study analyzes the Oregon Food Bank's *Seed to Supper* Program within the context of equitable and fair distribution of power. Specifically, this study looked at how the *Seed to Supper program* impacts access to locally grown food.

The Local Food Movement in the Portland Area: Background for Study

In 2009, a preliminary study sponsored by the McNair Scholar Program, allowed for an analysis of one segment of Portland, Oregon's burgeoning local food movement—learning gardens that focused on food insecure families and access to locally grown foods. Several learning garden programs initiated programs and spaces for food insecure people to learn about growing their own food. The Oregon Food Bank (OFB) and its Learning Garden Program--*Seed to Supper* agreed to work with me as a researcher and garden educator to help them analyze the effectiveness of their program.

Portland, Oregon is considered one of the leading sustainable and *"green"* cities in the United States, and supports a growing urban agriculture community. There are dozens of community gardens and learning gardens located in neighborhoods throughout the city and surrounding communities. Community supported agriculture (CSA), farmer's markets and food co-ops have prospered and grown in membership and participation over the past decades and Portland ranks high in sustainability areas such as land use planning, recycling, green buildings and green economies.

Sustainability has become a focal point in Portland with a movement toward local, earth-friendly food and public health policies to support these trends. There is a growing movement to integrate these trends and create a more unified approach to food policy and social justice with sustainability and public health in mind. Portland formed its own Food Policy Council in 2004 confirming its role as a

progressive city dedicated to creating a sustainable model. However, the lack of a

national food policy has been identified as a major issue for the 21st century by

authors and activists Michael Pollan (2008), Francis Moore & Anna Lappé (2002),

and Mark Winne (2008). In absence of national policies, cities like Portland help to

lead the way and set the standard for a national food policy.

Several Portland community leaders have identified the need to integrate

cultural and economic diversity when addressing food security issues in the

Portland region (Withers, 2010). They point to areas of Portland where there are

few options to low-income families in terms of obtaining healthy fresh foods. In

addition to the economic disparity that plagues many families in our community,

commercial agribusiness and its retail culture offer few nutritious foods to low-

income families. Many street intersections in business and neighborhood sections

throughout the city offer only fast-food restaurants or convenience stores on each

corner. Research and investigative reporting by authors like Eric Schlosser (2001)

and documentaries such as *Super Size Me* by Morgan Spurlock (2004) have shown

that the food sold in these establishments is highly processed and lacks nutritional

quality. Many neighborhoods in Portland offer little more than fast and convenience

foods creating "fresh-food deserts" for inhabitants. It is in this landscape and

political setting that the Oregon Food Bank works to counter food insecurity.

Community learning gardens are one alternative to the prevailing fast food culture.

Additionally, diverse populations often embrace gardening and bring their

knowledge to learning garden programs and the community (Withers, 2010).

Oregon Food Bank's Seed to Supper Program

The Oregon Food Bank (OFB), initially called Oregon Food Share, was founded in 1982 when revenue losses from decreased food and timber industries had statewide impact on hunger statistics. The mission statement of OFB has focused on "eliminating hunger and its root causes...because no one should be hungry" (OFB, n.d.). Now a hub for over 900 hunger-relief agencies, in 2010/2011 the Food Bank distributed over one million food boxes throughout the state. In addition to delivery of 91 million pounds of food donations, the OFB has developed an effective public policy advocacy program, nutrition and learning gardens program, and several community partnerships advocating for community food systems including FEAST (Food, Education, Agriculture Solutions Together), RARE (Resource Assistance for Rural Environments) and Food for Oregon.

This proactive approach effectively results in substantial poundage of food donations generated locally, statewide and through donations from national food programs like Feeding America, formally known as Second Harvest. Feeding America is the nation's food bank network and a major clearing house of Food Industry giants like ConAgra, Kroeger, WalMart, Nestle, and Cargill. Oregon Food Bank is a premier example of a food bank that delivers food to the needy. As Executive Director of Feeding America Bill Ayres notes in Building The Bridge: Linking Food Banks and Community Food Security, "Food bankers know that for hunger to end, people must be empowered to achieve self-reliance" (Fisher, 2005). Additionally, he writes that:

Food bankers have always seen themselves as a part of the
community as a whole…as the Community Food Security
movement has grown, food bankers have joined its efforts to
ensure that every community has access to safe, nutritious,
affordable food… many food banks today have their gardens, farms,
farm stands and partner with Community Supported Agriculture,
resulting in more fresh food for hungry people (Fisher, 2005, p. 3).

Oregon Food Bank, noted in the field for its achievements as a food bank,
both in terms of the amount and quality of food given as well as its creative
advocacy programming, is featured as an example in Winne's (2008) *Closing the
Food Gap: Resetting the Table in the Land of Plenty and* in Fisher's (2005) status
report on the comprehensive work of U.S. food banks and their linkage to
Community Food Security.   The fact that America's food banks have become
clearing-houses for social services to aid America's food insecure and at the same
time promote programs that build self-reliance is a key factor that influenced the
development of this study of the *Seed to Supper* learning garden program.

The *Seed to Supper* learning garden program was founded in 2004 as one of
OFB's initiatives for building food security through improved nutrition, community
food security and self-reliance. Other OFB learning garden programs include:
Cultivating Community, for at-risk youth, and *Dig In*, a community gardening
program for members at large to grow and donate fresh organic produce to the food
bank. The *Seed to Supper* program partners with local and state social service

agencies to host and teach basic gardening classes. The demographic for the Seed to Supper participants correlates with the general demographic data for those receiving a monthly emergency food box (Oregon Food Bank, 2080). Agencies affiliated with housing authorities, community centers, Head Start and other hunger-relief agencies host gardening classes, workshops and information fairs to aid participants in growing fresh produce, preparing nutritious foods and learning new life skills.

This study grew from a preliminary study conducted in 2009, which indicated that low-income participants in the *Seed to Supper* Program did not shop at the farmers markets or use Community Supported Agriculture (other than OFB programs). However, the results of the 2009 study have shown the social impacts of community building, nutrition, education and increased self-sufficiency on participants can improve access to locally grown foods (Withers, 2010). Additionally, *Seed to Supper* participants readily offered suggestions and recommendations for program improvement.

Research Questions and Importance of Study

This study looks at food equity and access within the context of urban agriculture and place-based learning in the *Seed to Supper* program. The basic research questions are: 1) How does the *Seed to Supper Program* impact food insecure communities and their access to fresh grown and local foods? 2) How are the goals of the *Seed to Supper* framed/designed and presented in the served communities? 3) Do these goals accomplish the overarching need for increased

food security in urban and peri-urban Portland? 4) Does *the Seed to Supper*

Program improve food literacy, self-reliance and create social capital?

Community-based Research

This study is an example of how collaboration between the academy and the

community can bring about change by working with participants and their ideas for

improving their learning gardens. My goal is to bring the voices of these gardeners

and the results of their efforts to public policymakers that promote Community

Food Security. Heffner, Zandee, and Schwander (2003) assert that "Community-

based research can be a bridge between the academy and the community, providing

a forum for building relationships, learning from one another and working together

for social change" (p. 127).

In this case, the community partner – OFB/*Seed to Supper*—was seeking

information on the results of the program and solutions to improve the program.

Many of the initial results and recommendations have already been presented to

Oregon Food Bank and other community partners and have led to changes and

additional partnerships to the program and participating communities.

Overview of Chapters

The following chapters include a literature review that examines the history

of learning gardens, garden-based pedagogy, and an overview of food insecurity

concepts within the framework of community food security and food democracy.

Chapter three focuses on this study's research methodologies, including information

on how the study was conduced and who participated.   Additionally, I include my

personal background experience as a researcher and the impact this research had on the sites where I conducted this study.

Chapter four describes the results of the study. The final chapter includes a discussion of the discoveries and the relevance this paper could have on programmatic changes, public policy and food justice. This discussion describes the implications for empowering food insecure populations through active citizenship and pathways to food democracy and food justice. Finally, Chapter 5 includes a discussion on how community-based research and the participation of the academy can impact local change and policy and engage community food systems.

At the beginning of each chapter in this thesis, a brief description from one of the learning gardens scenes opens the chapter. These thematic scenarios introduce the content of the chapters and the characteristics from that learning garden community. All the site names are pseudonyms. The following chapter focuses on the literature related to this study's focus on learning garden programs.

Chapter 2: Literature Review

Learning Garden Scene 2: Forest Hills: a Historic Community Garden

The recently restored learning garden at Forest Hills public housing project, originally designed and built in the mid-1940s, is also Oregon's first public housing project. As World War II ended, victory gardens still had a place in small communities to ensure food security for its members. The Forest Hills community garden was designed for a half-acre plot at the center of the housing project. Over time the garden fell out of use and was abandoned by the 1980s. In 2009, a services coordinator for Forest Hills Housing Complex, with the support of the community, decided to restore the garden to its original site. Today, the Forest Hills community garden is coming back to life through on-site garden programs, including Oregon Food Bank's *Seed to Supper* gardening classes, healthy cooking classes, a children's garden, a community composting system and a plant identification system for the garden created in partnership with a Portland State University capstone course. The community garden is open to members of Forest Hills public housing project and access to locally–grown foods increases with their participation in the learning garden program. This historic community learning garden site sets the scene for this chapter's focus on the literature, which captures how learning garden programs impact food insecure populations.

Overview to Literature Review

This literature review discusses research and theories showing the relationship between community food security, sustainability education as well as

how these concepts impact local, sustainable community food systems. After

providing a brief history of learning gardens and sustainability goals, this chapter

examines educational theories of the past century and how they have influenced

garden-based education and place-based learning. Then, through the lens of

garden-based education, this chapter explores food literacy and its connection to

food security. Next, this literature review examines the importance of ecoliteracy

(ecological literacy) and the sustainability movement in education to garden-based

learning because learning gardens have become vital places to convey the goals of

both ecoliteracy and sustainability movements (Gaylie, 2009). Following the

discussion about sustainability education, this review seeks to explore the

relationship between community food security, food democracy and food justice.

According to community food security advocates, food democracy and food

justice are evident in communities with improved food security (Gottleib & Joshi,

2010; Winne, Hugh and Fisher, 1997; Winne 2008). Furthermore, as the literature

indicates, there is an assumption that garden-based learning may empower and help

facilitate food equity and access (Gottlieb & Joshi, 2010; Nordahl, 2009; Winne,

2008).

Food advocacy groups such as the Community Food Security Coalition (CFSC)

movement have identified food inequities economic and social in our infrastructures

that impede access and create daunting barriers to culturally appropriate foods for

many low-income populations. For the purpose of this study "low-income"

populations are henceforth described as "food insecure"(Poppendieck, 1998, Winne, 2008).

Historical framework for Learning Gardens: What is a Learning Larden?

As the Forest Hills learning garden has shown learning gardens have the potential to help food insecure populations access local foods. This study begins with a description of the history of learning gardens and of the impact this history has had on today's learning garden programs. The history of learning gardens reveals patterns and trends that portray the garden as a tool to empower people and improve their access to fresh locally-grown and culturally appropriate foods (Lawson, 2005; Winne, 2008)). The *Seed to Supper* program is similarly modeled after learning garden programs designed in the early 1900s and the goals are also similar – to empower and build self-reliance, to beautify, and to improve access to locally-grown foods thereby alleviating food insecurity.   Anecdotal portrayals of the garden as a paradise, where humans can co-exist with nature in harmony without much resistance, dominate much of the literature about gardens (Hondagneu-Sotelo, 2010). The garden as a paradise is a cultural assumption found throughout the literature. If gardens serve as a place to teach self-reliance, increase access to foods and empower people, then a brief overview of the history may determine whether there is a connection between learning gardens and food security.

The definition of learning gardens can be traced over 100 years--dating back to the 1890s when urban and community garden development in United States expanded. Learning gardens have served many social, economic and educational

purposes. Laura Lawson (2005) has described some of these historic meanings of learning gardens over time, and postulates through her extensive research of garden programs in America that many of the assertions and claims about the benefits of learning gardens "were largely anecdotal" (xv). She also found the presence of learning garden "projects" practicing similar "patterns in organizational development, with typical justifications and goals for these projects" (xv). Public support for these projects has proven to be cyclical with stronger financial support during economic hard times, and often little support once "public attention shifted" (Lawson, 2005, p. xv).

Lawson's (2005) historical analysis in the book, *City Bountiful: A century of community gardening in America* has found that "in times of crisis, the neighborhood garden becomes a place to go, to get active, to meet neighbors and to make life more palatable" (p. 292). As early as the 1890s, vacant lots were developed into community gardens to assist unemployed laborers in Detroit, New York, and Philadelphia (p. 1). In addition to this social/economic reform activity, education reformers focused on developing urban gardens in vacant lots and in schoolyards in order to promote "interactive teaching venues that correlated with school subjects and taught civics and good work habits" (p. 1). As early as the 1890s, school gardens became a national movement, and by 1914 the U.S. government formed a special office in the federal Bureau of Education dedicated to school gardens called the Division of Home and School Gardening (Lawson, 2005).

Considering this historical perspective, much contemporary thinking about learning gardens and garden-based learning seems to derive from previous philosophies related to gardening and education. UN researcher, Subramainam, (2002) states: "The philosophy behind garden-based education is actually an amalgamation of the philosophies behind experiential education, ecological literacy and environmental awareness, and agricultural literacy" (p. 1). The history of learning gardens emphasizes the capacity of urban gardens to remedy our social ills, provide beautification, bring nature to our cities, and act as a place to further our knowledge base (Lawson, 2005). Lawson (2005) writes that urban garden programs were designed to improve urban conditions. At a time of great social and economic change in the United States of America, urban gardens improved housing situations and provided tangible outcomes that appealed to the general public. The success of these types of garden programs was repeated over time and today's successful learning garden programs grow out of this history and purpose.

The Goals of Sustainability Education

In addition to the history of learning gardens, the goals of sustainability frame learning gardens as a tool for sustainability education.   Gaylie (2009) asserts that learning gardens play a transformative role in addressing sustainability education goals and aid in providing common spaces for community engagement. This view is consistent with recent sustainability goals set by international organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO). These sustainability goals were formulated to address the

mounting environmental concerns of the 20th and 21st centuries.   UNESCO has set

the objectives for the UN decade of sustainable education (2005 – 2014) which

"seeks to integrate the principles, values and practices of sustainable development

into all aspects of education and learning, in order to address the social, economic,

cultural and environmental issues we face in the 21st century" (UNESCO, 2012).

Sustainability education "aims to help people to develop the attitudes, skills,

perspectives and knowledge to make informed decisions and act upon them for the

benefit of themselves and others, now and in the future" (UNESCO, 2012, p. 2).

Although prescriptive in nature, these goals have shaped and impacted the

development of garden-based learning for furthering sustainability goals through

the living laboratory of a learning garden. If the learning garden can help alleviate

food insecurity and address some of the barriers to accessing locally grown foods,

this outcome will contribute to the furtherance of sustainability goals.

This study posits that the learning garden is well positioned to serve as an

educational tool to expand community solutions for sustainable social ecosystems to

support local, sustainable food systems. The next section looks at specific learning

garden pedagogy and its importance to learning garden programs.

Learning Garden Pedagogy

Because of the nature of the learning garden as a hands-on experiential

learning process, programs like the *Seed to Supper* have adopted teaching methods

that draw on experiential learning pedagogy. The learning garden provides an

alternative to the classroom as well as access to an outdoor learning environment

(Subramaniam, 2002). In framing this research study, an examination of the various approaches by garden educators reveal that many pedagogical concepts have remained consistent.   Subramaniam, 2002 states, "Today, the ideas of experiential and naturalistic education, integrated curriculum, and the ideals of environmental education and agricultural literacy have found a new context for instruction beyond the four walls of the classroom—the school garden" (p. 1).

The learning theories affiliated with learning gardens are consistent with patterns of educational theories developed over the past one hundred years, along with the addition of environmental and sustainability goals in the 20th century. Additionally, the influence of 19th century educational theorists on place-based and experiential learning has been associated with progressive educational theorists, such Kolb, Dewey and Gandhi.   Another consistency is the overall lure of the garden as a panacea for society's ills, which Lawson (2005) maintains has compromised the creditability of urban gardening, and may be one reason for the lack of permanency on the landscape from the 1890s through the 1990s.   In spite of its lack of permanence, the learning garden has captured the interest of educators over the past two centuries.

Experiential Learning Theory and the Garden.

Learning garden pedagogy has been influenced by the educational theories of experiential learning, a Western European framework for learning derived from the progressive educational theorists John Dewey, Maria Montessori, Mahatma Gandhi, and more recently Kolb (Desmond, Grieshop, & Subramaniam, 2002; Gaylie 2009;

Subramaniam, 2002). Experiential learning and education have been defined as "a process through which a learner constructs knowledge, skill, and value from direct experiences" (Subramaniam, 2002). Gaylie (2009) has identified the roots of experiential learning in early philosophical writings of Jean-Jacques Rousseau, Johann Heinrich Pestalozzi, and Friedrich Froelbel. These early philosophers saw the critical importance of learning in nature through observation and being out-of-doors—the premise for experiential learning. Pestalozzi coined the phrase, "hands, heart and head" (Subramaniam, 2002; Gaylie, 2009) to describe the emphasis in hands-on learning. Pestalozzi was an early supporter of schoolyard gardens in the 19th century (Subramaniam, 2002) a time when there was a proliferation of learning gardens in public schools. These early theorists continue to influence today's garden-based learning objectives as do the theories of modern educator John Dewey, a major influence on experiential learning.

John Dewey, a 20th century American theorist of the progressive education movement, saw the naturalist environment as a realistic and powerful opportunity to teach about the sciences.   He asserted that the history of humans and their relationships to the working environment might promote the humanitarian causes of the 20th century. He states that "education in order to accomplish its ends for both the individual learner and for society must be based upon experience—which is always the life-experience of some individual" (Dewey, 1938, p. 89). Dewey's contribution to 19th century experiential learning theories is the 20th century ideology (politics) associated with progressive education. Another politically

motivated educator, Mohandas Gandhi, believed in moving education from "the confines of the fours walls of a classroom" (p. 1) in order to bring practical applications to learners (Subramaniam, 2002). Experiential learning defined outdoor education models and nature-based learning that blossomed after this mid-20th century thinking. Gandhi's model of "self-sufficiency," which advocates developing independent communities, is an important influence on our current educational framework for learning gardens and their goal of helping others to develop self-sufficiency. In the 21st century, garden educators and philosophers are still theorizing about experiential learning practices as they relate to gardeners.

Another experiential learning theorist, Kolb, adapted his experiential learning model from Dewey, Piaget and Lewin creating a "holistic model of the learning process and multilinear model of adult development, ...which is consistent with what we know about how people learn, grow, and develop" (Kolb & Boyatzis, Mainemelis, 1999, p. 2). This model for learning starts with a concrete experience based on doing followed by an activity reflecting on the experience. Following this reflection activity, the learner concludes the experiences through a conceptualizing activity, and lastly, an active experiment, planning or trying what was learned (Kolb, 1984). The learning garden provides the perfect canvas, so to speak, for this model of experiential learning.

Gaylie (2009) suggests that: "the garden itself is a paradox in that it represents a simple, local solution to large, complex, global environment problems. Learning in the garden is immersion in dichotomy and difference as a bridge towards

29

understanding and community"(p. 8). This paradox is evident in many of the complex problems educators, planners, and community organizers face in the 21st century. Certainly Dewey and Gandhi, among others, argued for the use of garden-based learning in a place-based context as well as for the potential for powerful learning experiences and community building.

Place-based Learning in the Garden.

These theorists and educators saw value in real life learning, recognizing the significance of place-based learning. This study has sought to identify what role place-based learning has in the success of learning garden programs. More recently, place-based learning advocates have focused on the contribution learning gardens can make to creating sense of place and empowering people. According to Lawson (2005), and Hondagneu-Sotelo (2010), the garden has been promoted as a place that creates a sense of well-being, and promotes self-reliance. One of the foundations of place-based learning is the use of an integrated and versatile curriculum—one that is related to place and to community. Because of this versatility, Gruenewald (2003) describes the unique aspects of place-based learning as a theory that:

> ...lacks a specific theoretical tradition,… its practices and purposes can be connected to experiential learning, contextual learning, problem-based learning, constructivism, outdoor education, indigenous education, environmental and ecological education, bioregional education, democratic education, multicultural education, community-based education, critical

pedagogy itself, as well as other approaches that are concerned with context

and the value of learning from and nurturing specific places, communities

and regions (p. 3).

Because of this versatility, place-based learning lends itself to a broad range of

applications and to a diversity of places and situations. Gruenewald (2003) cites

Williams, 2001 as stressing the importance of people in place and the relationship to

power and politics as central to place-based learning. The empowerment of the

individual that Williams refers to and the relationship to learning in place and

building this connection to community, helps define garden-based learning and its

popularity. Gruenewald (2003) notes, "place-based pedagogies are needed so that

the education of citizens might have some direct bearing on the well-being of the

social ecological place people actually inhabit" (p. 4).   The potential impact of such

place-based learning pedagogies can be applied in garden-based learning. Often

learning gardens are located in a community and become a powerful tool for garden

educators, community organizers and policymakers. These are a few reasons we

need to understand experiential pedagogy within place-based learning theory

because these theories can transform and empower people.

The next section of this literature review examines the role of food literacy

in current garden-based learning and specifically, in learning garden programs like

Seed to Supper. By teaching food literacy, educators can provide a link to food

security and to sustainability education.

Food Literacy in Garden-based Learning: A Link to Food Security

Food literacy is one of the basic precepts used in learning garden programs. Hawkins (2007) defines food literacy as to the degree to which people are able to obtain, process, and understand basic information about food in order to make appropriate health decisions, (p. 238). Learning gardens can increase food literacy and create sustainable lifestyles for food insecure populations and, as Nordahl, (2009) has stated, food literacy may play an important role in building capacity for this knowledge. In her book, *The Learning Garden: Ecology, Teaching and Transformation,* Gaylie, (2009) asks garden educators "How does a garden teach?" (p. 1). She envisions the garden as a living space for interdisciplinary and ecology-based collaboration, adding that firsthand knowledge of how things grow empowers teachers and students (Gaylie, 2009). Teaching food literacy in learning garden programs has the potential to make a significant difference for food insecure populations. As Gaylie (2009) asserts, firsthand knowledge of how food is grown empowers people and meets the goals of sustainability.

Many educators, urban farmers, and food activists have posited the use of urban learning gardens as one of the building blocks for the local food movement. They also see urban learning gardens as one potential solution for alleviating food insecurity and for building community equity in underserved communities. A growing number of educators and policy makers teaching about how food is grown and the traditions that have perpetuated growing our own food purport these traditions as critical to food literacy (Williams & Brown, 2012; LaDuke, 2005;

Nordahl, 2009; Winne, 2008). Learning garden programs stress the cultural

importance of linking the processes of growing food and food preparation, creating

opportunities for resiliency and developing self-reliance.

Food literacy, a concept adapted by the U.S. Department of Agriculture's

health literacy initiative, promotes community health objectives including food and

nutrition. According to the 2010 USDA health literacy initiative, the inability to

prepare basic foods by food insecure populations has been identified by government

researchers as a critical breakdown in our health systems. The link between literacy

(knowledge) and our food is major focus for today's health communities. From a

seed, as the name *Seed to Supper* implies, we can create a meal—our supper. This

simple concept is used by researchers to describe the link between community

health and the importance of culturally appropriate food, nutrition and physical

activity (Kolasa, Peery, Harris, & Shovelin, 2001).

In Nordahl's (2009) book, *Public Produce: The new urban agriculture,* he

stresses the importance of food literacy and the potential of learning about our food

from our environment. Additionally, Nordahl (2009) has identified food literacy

and knowledge about where our food comes from as important components of a

sustainable, local, community food systems. He asserts that "much of this forgotten

knowledge surrounding food has much to do about supermarket convenience and

the amount of processed and fast foods in our diets" (Nordahl, p. 116). He has

identified the social need to learn from our peers within our environment and

states, "what we learn is what we see" (Nordahl, p. 116). The knowledge and the

intergenerational traditions learned from our families and the culture we live in define who we are culturally (Nordahl, 2009). Observing and learning how to grow food in a garden is an important way to learn and develop a culture of food literacy. Based on Nordahl's perspective, I conclude that food literacy is a key component to attaining sustainable community food systems and to overcoming barriers to locally grown food.

This traditional approach of passing knowledge on from generation to generation is fostered in learning communities where place-based experiential pedagogy empowers individuals (LaDuke, 2005; Nelson, 2008; Nordahl, 2009). As Nordahl, (2009) has stated, this culturally intrinsic community-based approach to gaining food literacy in the context of place has important implications for learning garden programs. If research can demonstrate that learning gardens really do impact food insecure populations and improve access to locally grown foods, this knowledge could potentially alleviate the funding problem identified by Lawson (2005). Thinking along these lines—positioning food literacy within the scope of sustainability education, the concept of ecoliteracy defines the connection between ecology, sustainability and educational theories such as experiential and placed – based education. Sustainability education encompasses many threads of experiential pedagogy; ecoliteracy has defined sustainability within the concepts of biodiversity and the web of life. The learning garden is the perfect metaphor for teaching sustainability within the experiential learning model.

Ecoliteracy: Concepts of Sustainability in the Garden

The *Seed to Supper* program addresses sustainability in subtle and indirect ways through its focus on organic gardening and other stewardship principles. In many of the programs, sustainability has become a focal point. The concept of sustainability is central to garden/place-based learning and fosters a sense of concern and investment in our environment and future generations. Capra (1996) states that "there are solutions to the major problems of our time, some of them even simple" (p. 4). He defines sustainability as a key concept in the ecology movement—and posits this challenge for our time, " to create sustainable communities …social and cultural environments in which we can satisfy our own needs and aspirations without diminishing the chances of future generations" (p. 4).

In addition to Capra's challenge, Costanza (2010) considers urban ecology a focal point of the sustainability movement in 21st century. He stresses the importance of this moment in the Earth's history and the challenges we face in creating a sustainable future. He advocates for the a solutions-based approach. If we are to address the complex socio-ecological systems of our planet, sustainability education is critical (Costanza, 2010). The growing sense of urgency for change in our communities (what Capra calls deep ecology or a paradigm shift) has enabled principles of sustainability to permeate multiple disciplines of learning.

The learning garden lends itself to experiential and sustainability learning in our natural environments and fosters appreciation for stewardship of nature (Gaylie, 2009). The learning garden model offers a "solutions-based" approach to

teaching sustainable education goals. As Capra (1996) suggests, "from the systemic point of view, the only viable solutions are those that are sustainable" (p. 4). The garden provides a solutions-based approach to sustainability education and provides sustenance for living. Humans are interconnected with nature's web of life and co-exist with nature in the garden (Capra, 2002).

Human interactions in learning gardens can help us understand this web of life theory that is so critical to sustainability education. Capra (2002) stresses the importance of "ecoliteracy" goals for all individuals and has developed the Center for Ecoliteracy in Berkeley, California. Capra states, "ecoliteracy—the understanding of the principles of organization that ecosystems have evolved to sustain the web of life—is the first step on the road to sustainability" (2002, p. 232 – 233). The Center for Ecoliteracy uses an education system that is based on ecological literacy. This pedagogy is based on the concept that life is part of a complex web and the learning model focuses on "the experience of learning in the real world" (p. 232). In positioning his theory, Capra uses the example of growing food and how sense of place develops from growing our own food, establishing the interconnectedness of all life's cycles, from waste matter into compost, compost into plants and the plants sustain humans. This food system is an ongoing cycle. Ecoliteracy and sustainability education follow the four main principles of the sustainability movement, which include: ecology, economy, equity and more recently education (Edwards, 2005). These goals are imperative to the learning garden and fit the ethics and objectives of sustainability education. The last section

of this literature review seeks to describe the political/activist aspects of learning garden programs and the connection to increased citizenship and the democratization of food security.

Community Food Security and Food Democracy & Food Justice

Proponents of community food security assert that local, sustainable, community food systems are achievable by creating social equity (Fisher, 2002; Winne, 2008). The following section is an overview of the literature that connects community food security, food democracy and food justice. The learning garden as a potential space for learner empowerment sets the scene for greater community food security through activism in food democracy and participation in food justice.

Fisher (2010) has defined food democracy as a concept "based on the principle that citizens or "food citizens" have the power to determine food policies and practices locally, regionally, nationally and globally. Food democracy asserts that it is a right and responsibility of citizens to participate in decisions concerning their food system" (Fisher, 2010). Food Justice, similarly asserts the role of citizenship and empowerment. These two concepts, food democracy and food justice look to rights-based democratic processes to influence control of local, national and global food systems. Food justice came out of the environmental justice movement in the early 2000s (Gottleib & Joshi, 2010), and is a social justice approach to solving food insecurity issues and to achieving access to locally grown foods.

The Community Food Security Coalition based in Portland, Oregon and Washington, DC has described community food security as "building local capacity for food production and marketing, distributional equity, social justice, and ecological sustainability"(Fisher, 2010, para 1). As part of its mission to mobilize a rights-based food system, the coalition has created guidelines, measurement tools and a nationwide coalition to help communities create sustainable, healthy, just and local community food systems. They advocate for democratic systems dedicated to building community voice and building capacity for change. Community food security advocates value community participation in decision-making, design and implementation of local food systems. Community food security also applies a community-focus to problems rather than 'blaming the victim' (Anderson and Cook, 1998, p. 145).

The philosophy reflects a rights-based and democratic model that uses social justice principles (Anderson and Cook, 1998). Anderson (2008) further stresses the importance of a rights-based food system, and argues that the U.S. failure to recognize "economic, social and cultural rights (ESCR) as basic human rights on a par with civil and political rights… perpetuates food insecurity, poor health associated with diet and lack of democratic participation in political decisions about food" (p. 595). Food security advocates and researchers have addressed community food security (CFS) and its relationship to community learning gardens as a space for food justice, equity and building resiliency (Winne, Hugh, & Fisher, 1997). Winne et al. (1997) state "the goal of Community Food Security is to develop

communities that are food secure" (p. 4). Along with problem solving for food

insecure communities, CFS has focused on decentralized and small-scale food

systems that promote local access and solutions for lack of access to food.

The concept of sustainable community development that goes beyond

'blaming the victim' has some of its roots in Nobel Prize recipient Amartya Sen's

(1999) book *Development As Freedom.* Sen (1999) has written about the Irish

potato famine and the political implications of cultural superiority and cultural

alienation (p. 175) found in colonial and post-colonial governments. Sen focuses on

the tensions between entitlements (basic economic freedoms) and interdependence

and writes that "hunger relates not only to food production and agricultural

expansion, but also to the functioning of the entire economy and—even more

broadly—the operation of the political and social arrangements that can, directly or

indirectly, influence people's ability to acquire food and to achieve health and

nourishment" (p. 162).

The political, social and economic factors cited by Sen shed light on much of

the current thinking about charity as a reaction to economic disparity. Food banks

have picked up the tab so to speak, the *Seed to Supper* program is one example.

There is a danger that charity organizations that promote the concept of the

learning garden as a space to learn self-reliance and self-sufficiency may in fact

perpetuate a large, abusive system that overshadows societal ills such as poverty

(Poppendieck, 1998). Sen's (1999) theories about the right to food as a basic human

right underlie the resistance to emergency food as charity. Proponents of

community food security have criticized the role of charity and instead focused on a rights-based food system (Anderson, 2008).

It is within this context that this study seeks to understand the benefits of the learning garden as a potential democratic space with the power to influence political decisions about food. When considering a rights-based food system with the capacity to empower food insecure communities, the question to ask becomes, how does one measure the success of a community food system?   The Coalition for Community Food Security (CFSC) has documented many indicators of successful community food systems as well as a theoretical framework for how to develop these systems. This framework is too in its large a scale for the scope of this study; however, these indicators would be helpful to consider when analyzing the results from this study.

The CFSC's 2010 executive summary, they identified indicators of success based on six years of data collection on their community food program activities and outcomes including: "healthy people, strong communities, thriving local economies, vibrant farms and gardens, sustainable ecosystems and justice and fairness" (p. 1). These indicators of success can be used as tools to analyze learning gardens and their role in community food systems. The goals of the Community Food Security Coalition and the goals of the *Seed to Supper* program are both intended to alleviate food insecurity and build self-reliance through hands-on experiences.

This study examines a learning garden program that claims to bring gardening skills to food insecure populations with the goal of creating community

food security. And as Lawson (2005) has asserted, through gardening, one learns

not only practical skills associated with gardening—the steps necessary to nurture

seed to fruit—but also the civic-mindedness to nurture community open space

(Lawson, 2005, p. 7).   Lawson (2005) has also maintained that "gardens [serve] as

a democratic space and gardening as an activity… brings diverse groups together in

mutual self-interest" (p.8). Lawson has identified this as "self-help." Lawson's

observation regarding "self-help" plays out through the democratic processes

developed in the community food security movement. Food justice practices and

rights-based practices can further be defined as activism—an essential component

to food democracy—and one that may transform self-help and self-reliance into

active citizenship or food democracy.

Oregon Food Bank's *Seed to Supper Program* has identified "self-reliance" as a

main initiative for its program, which correlates with Lawson's (2005) notion of

"self-help." This study looks at healthy people and communities as indicators of a

successful food system and it also examines the learning garden as a democratic

space for building social capital.

Conclusion

The learning garden has historically served as a prescriptive solution to

economic and social inequity. These early examples of learning gardens help us

understand the use of urban learning gardens as a space to empower, improve living

conditions, increase access to food as well as to help people build self-reliance.

Gardens bring nature to urban settings, providing opportunities to build self-

reliance, and community. Educators have focused on the benefits of experiential place-based learning in learning gardens.

Ecological and sustainability movements and agendas of the 21st century have embraced the learning garden as a contemporary place to foster "stewardship" of the land. The literature portrays a strong tradition of learning gardens that focus on the development of ecological and sustainability curriculums. The continued focus on self-reliance has captured food advocates' attention and learning gardens have become a popular tool to achieve greater food security. Additionally, the learning garden has a potential to make a contribution to community food security and to empower communities to build local food systems that contribute to a stronger food democracy.

It is important to study and document learning gardens because they provide an accessible common space for implementing sustainability goals and food literacy, and offer the potential to increase food security and access to locally grown foods. The next chapter addresses the methodologies and the relevance of community-based research principles and the impact this ethic has had on this study.

Chapter 3: Methodology

Learning Garden Scene 3: Interview at Bell Tower Community Center: Linking up with Community-based Research

The first *Seed to Supper participant interviews* began in a community center located in a busy urban neighborhood in Portland, Oregon. The Spanish-speaking participant had finished her first series of the *Seed to Supper* learning garden classes and she had agreed to interview with me. The *Seed to Supper* instructor, also a services coordinator for the community center, agreed to translate. After we explained the consent forms and set up the digital recorder, I presented the first question in English, "As a result of taking the *Seed to Supper* learning garden workshop, have you gained enough experience to grow some of your own fruits and vegetables?" The instructor translated and the participant enthusiastically shared her story about gardening and what the garden workshop had meant to her. Each interview began with the same question, and each interviewee shared a unique story about accessing locally grown food and their connection to food as well as what growing their own food, or the potential to grow their own food, meant to them.

The practice interviews I had conducted in advance did not prepare me for the excitement of the face-to-face interviews with *Seed to Supper* participants. The intense energy, enthusiasm and challenges of language, interpretation, knowledge levels (in addition to outside distractions) shaped each interview. Bailey (2007) describes the preparation that is required to "frame the interview" (p. 104) and reminds the interviewer that a good interview does not necessarily begin with the

questions. Setting up the interview, selecting a location and making the space convenient and comfortable impacts the first impressions that often influence the quality of the interview (Bailey, 2007). This scene from the Bell Tower interview, represented weeks preparing the interview questions for approval from the Human Subjects Committee with oversight from my PSU faculty mentor and the *Seed to Supper* program coordinator—the results were worth the effort. This scene also sets the context for this chapter, which focuses on community-based research using mixed methods approaches in the collection and analysis of data collected over a three-year period (2009 – 2011).

This study is primarily based on the theories and principles of community-based research. Community-based research often begins with questions that are generated from the local community (Minkler, 2005). Minkler (2005) has described community-based research partnerships as "authentic partnerships…that are locally relevant and community-based" (p. ii3). For this study these partnerships between the researcher, the academy, the faculty mentor and program of study requirements—in addition to the community partner's needs—influenced the process and findings, as well as the analysis and the implications.

This chapter clarifies the on-going interactive processes that community based research utilizes and will address the mixed methods framework for this project including reasons for combining both qualitative and quantitative research. Additionally, this chapter includes a discussion of grounded theory used to support

community-based research methods, along with a description of the sites observed and population involved in the study.

Other matters considered here are the validity and ethics used in this study as well as the positionality of the researcher. First, I describe how this research project began.

Research Study Background and Development of the Community Partner

This research project was created in 2009 as part of the McNair Scholars Program at Portland State University. The McNair Scholars program sponsors undergraduate students and pairs them with a faculty mentor to conduct an original research project. My McNair research project later evolved into this Master's thesis, influenced by my participation with the theories and coursework of the Graduate School of Education's Leadership in Sustainability Education program from fall, 2009 through winter, 2012.

The McNair faculty mentor, with whom I collaborated, advised me to develop a community partner and to base my research project on their program needs. During my meeting with a representative from Oregon Food Bank, the representative suggested collaboration with the program coordinator of their Learning Gardens Programs. The initial research question was co-created with the coordinator of the *Seed to Supper Program,* and with oversight from my McNair faculty mentor, Professor Lisa Weasel, a microbiologist with an interest in feminist community science and social/food justice theories. The focus of the project was an evaluation and analysis of some aspects of the *Seed to Supper Program.*

The initial research question—"How do learning gardens help low-income families access fresh locally–grown foods?"—focused on food insecurity and access to local foods. This preliminary question was modified as the process of gathering data led to new information about the learning garden program and due to my participation in the Leadership in Sustainability Education (LSE) program coursework. The revised thesis statement became: the purpose of this study was to discover whether learning gardens such as the *Seed to Supper* Program increase access to locally grown food and successfully include and empower food insecure people and their communities. Out of this thesis statement came the following set of research questions.

Research Questions

This study looks at food equity and access within the context of urban agriculture and place-based learning. The basic research questions are: 1) How does the *Seed to Supper Program* impact food insecure communities and their access to fresh grown and local foods? 2) How are the goals of the *Seed to Supper* framed/designed and positioned/presented in the served communities? 3) Do these goals accomplish the overarching need for increased food security in urban and peri-urban Portland? 4) Does *the Seed to Supper Program* improve food literacy, self-reliance and create social capital?

Research Design and Rationale: Community-based Research Using Mixed

Methods

This study examines the effectiveness of the *Seed to Supper* program through

a community-based research approach using a mixed methods research design.

My approach was to establish long-term relationships within the community

partners' environment and to gain insights about the *Seed to Supper*'s program

approach, and its impact on food insecure populations in order to convey an

insider's view of the potential of learning gardens to empower food insecure

populations and increase access to locally-grown foods. Using a combination of

quantitative and qualitative data collection served both the needs of the community

partner and the researcher by illuminating, describing and exploring the nature of

garden-based learning on food insecure populations.

Wolcott (2009), stresses the importance of "linking our research to others"

(p. 65), and his message is fundamental to this study. One of my goals for this thesis

has been to bring the voices of the participants of the *Seed to Supper* program to the

attention of my colleagues in the academy, to public policy makers and to the

coordinators of the Oregon Food Bank's *Seed to Supper* program. The use of

community-based research methods in this study balanced the needs of the

community partner and positioned the researcher within the learning garden

communities to collect data with the collaboration of the community members.

Heffner, et. al., (2003) state the challenges a researcher faces when

conducting community-based research:

The challenge for academic researchers who engage in community-based research is to stay connected to the process long enough to make sure that action for social change is the result of the desired change and work to implement it, but academic researchers who care about community change do more than just prepare a final report and then move on. Embarking on a community-based research project requires a longer-term commitment on the part of the academic researcher and a willingness to enter into the "messy" world of community dynamics (p. 130).

I would not characterize this research study as "messy," but it did require risk taking by becoming involved and staying involved in the community learning garden settings.

Community-based research fits within the theoretical framework of place-based pedagogy as a method to engage with community partners to achieve common goals. For my part, I wanted to discover whether learning gardens helped food insecure communities access locally-grown foods, while the Oregon Food Bank wanted to know if their program was successful in alleviating food insecurity and building self-reliance. These goals intersected in a collaborative and engaged community-based learning environment and research partnership. Because of the place-based nature of the *Seed to Supper* Program and the dynamic nature of community-based research, a mixed quantitative and qualitative research methods approach best addressed the questions inherent in this study.

The quantitative aspect of the study design included an evaluative survey distributed by the Oregon Food Bank voluntary instructors following the *Seed to Supper* classes. This quantitative method provided statistical evidence about the impact of the learning garden, which was the prime focus of the community partner, The Oregon Food Bank. The qualitative aspect the study included fieldwork techniques of observation and field notes, semi-structured interviews, and interactive participation by the researcher, with the community partner, the *Seed to Supper* learning garden sites.

This mixed-methods design allowed for a more collaborative and adaptive research environment. Mixed methods design includes the "use [of] mixed data (numerical and text) and alternative tools-[field work: including observational notes and interviews], including developing a grounded theory" (Tashakkori & Teddue, 2003, p. 711). Tashakkori & Teddue (2003) state that this type of research design allows for collection of data "concurrently or sequentially, and involves integration of the data at more than one stage of the research process" (p. 711). The mixed methods approach allows for community-based researchers to collaboratively make changes, using critical and reflective thinking and analysis (Heffner, et. al., 2003). "This interaction between investigator and the subjects of the investigation requires dialogue, careful communication, and a certain degree of trust that takes time to develop" (Heffner, et. al, 2003, p. 127).

A welcoming and long-term relationship developed based on careful investigation and open communication between the community partners and the

researcher. This provided the researcher with an insider's perspective, paving the

way for thick descriptions of the learning garden scenes.

This study also made use of ethnography in its qualitative research methods.

Ethnography is the study of people and their culture; it is also a method used in

qualitative research (Tashakkori & Teddue, 2003). Because of the nature of

community-based learning gardens--the garden-based programs and the settings

they reside in--ethnographic data collection, observation, interviews and

relationship building became inevitable features of this study. Bernard, (2000)

states that ethnography "is understanding … people's lived experiences" (p. 348).

This method proved invaluable in the garden settings and as Bernard suggests, a

few "key informants" articulate their knowledge and position to describe a culture

or place – this type of information collection is not from an "unbiased sample of

people" (p. 344).   The interviews conducted for this research project led to this type

of ethnographic discovery of key participants who were integral to the gardening

communities I examined, and critical to me as the researcher and to the discoveries I

made. Early in the process of the interviews, it was clear that in each community

site I visited, eventually a key participant would emerge to guide me in my research

process, revealing the internal workings of the garden, its community and culture.

As a result of this collaboration, I learned that the process of assimilating into the

learning garden communities would take time and my place as a researcher would

naturally evolve. As Heffner, et. al, (2003) state:

University people have to earn the right to contribute. Community

organizations and community members often view academics with

suspicion or skepticism. It takes time for trust to develop, and learning to

communicate clearly and honestly is sometimes a challenge (p. 137).

As this study progressed, I became part of the community landscape—both in the

offices of the community partner, Oregon Food Bank, and at the learning garden

sites. The field observations for this project were handwritten notes in a journal

format and photo journals of the gardens kept throughout the study time period,

June, 2009 through the Fall of 2011.   The gardens and the people who worked in the

gardens became a part of my personal experience within the research process.

These recordings are reflected in the "Learning Garden Scenes 1-5" and are further

developed in the results found in chapter 4.

These real life settings provided opportunities to develop thick descriptions

about the impact of the learning gardens on the individuals and in the larger context

of the community settings. By including both quantitative and qualitative methods,

the researcher and community partner gleaned a realistic description the learning

garden activities over time. These combined methods of observations provided

deeper reflections about the impact these activities had on the participants and their

communities.

Research Sites

This study was based on research over a three-year period (2009-2011) in

the context of garden-based learning that took place within the Oregon Food Bank's

Seed to Supper program classes situated in classrooms and settings located within the participants' community. These place-based communities were situated throughout the Portland metro regions and included Multnomah, Clackamas and Clark counties. The classroom and garden sites were located within public housing authorities, community centers, senior centers, Head Start program locations and other hunger-relief agencies.

Table 1 describes the sites where the study took place. The *Seed to Supper* program partners with local (county and state) social service agencies to host and teach basic gardening classes to populations being served by these agencies and by the Oregon Food Bank's emergency food programs. The program locates in the communities where participants live and/or receive social services.

These sites hosted *Seed to Supper* gardening classes, workshops and information fairs to aid participants in growing fresh produce, preparing nutritious foods, and learning new life skills. The survey and fieldwork, including, observations, interviews and photography took place at the sites in Table 1. The real names of locations have been changed.

Table 1

Seed to Supper Sites for survey and fieldwork

Seed to Supper Sites			
Name	**Type**	**Services**	**Learning Garden Description**
Riverside Court	Senior Center	Loaves and Fishes Site	No learning garden on site – uses various gardens throughout the Metro region
Cascade Views	Food Pantry (Faith-based)	Emergency Food boxes, misc. social services	Large learning garden – 30 participants
Brookplace	Public Housing site	Community center, social services coordinator for county	Large Community garden utilizing raised beds. Large blueberry field 30 participants
Forest Hills	Public Housing Site	Social Services Coordinator for county	Large Community garden with children's garden, community patch and individual raised beds 30 participants
Bell Tower	Community Center	Social Services Coordinator for county	Container Garden site on patio

The survey was distributed at all of the *Seed to Supper* sites listed in Tables 1 & 2.

Fieldwork was conducted at sites listed in Table 1. Table 2 lists sites that only

participated in the survey.

Table 2

Survey sites only

Seed to Supper Sites	Type	Services
Lakeview Correctional Facility	Correctional Facility	Incarcerated individuals
Mountain View Treatment Center	Drug Recovery Center	Mental health, alcohol and drug abuse recovery treatments
The Tower	Senior Center Home	Housing
Head Start	Early pre-school education facility	Educational programs
Our Lord	Faith Based Facility	Social Services support
The Way	Faith Based Facility	Social Services support
Tribal Nation	Native American Reservation	Social Services center
Youth Center	Youth Center & Shelter	Emergency services for youth
Urban Homeless Shelter	Homeless Shelter	Emergency services for homeless
Religious Charities	Faith Based Facility	Social Services support
Housing Authority of Portland	City Housing Department	Housing
The Place Mental Health	Mental Health Facility	Mental Health Support Services
Metro Family Services	Multnomah County Family Service	Social Services Support

Research Participants

The research participants self-selected to take *Seed to Supper* classes and

volunteered to participate in this study. There was no pressure to actively take part

in any aspect of the study. Because volunteers teach the *Seed to Supper* program,

the onsite staff coordinators decide on the participant selection process. This is

explained in greater detail in the section on data collection.

In order to participate in a *Seed to Supper* workshop, both survey and

interview populations qualified for food bank services and were pre-approved by

the various research site staff coordinators. Eighty-one percent of participants

surveyed from the *Seed to Supper* Program were earning less than 200% of the

poverty level. Ethnicity was not addressed in the learning garden survey because

the community partner, Oregon Food Bank, conducts its own bi-annual survey. The

survey, *Oregon Hunger Factors,* provided ethnicity and other data represented here

(OFB, 2008). For this reason, the Seed to Supper survey does not collect data about

ethnicity, or age, as the demographic composition of the Seed to Supper participants

correlates with the general demographic data for those receiving an Oregon Food

Bank emergency food box—74% White, 14% Hispanic, 3% Native American, 2%

Black and mixed – 4% (Profiles of Hunger & Poverty in Oregon, p. 3, 2008). See

Figure 1.

Figure 1. Demographics for OFB *Seed to Supper* Survey Respondents
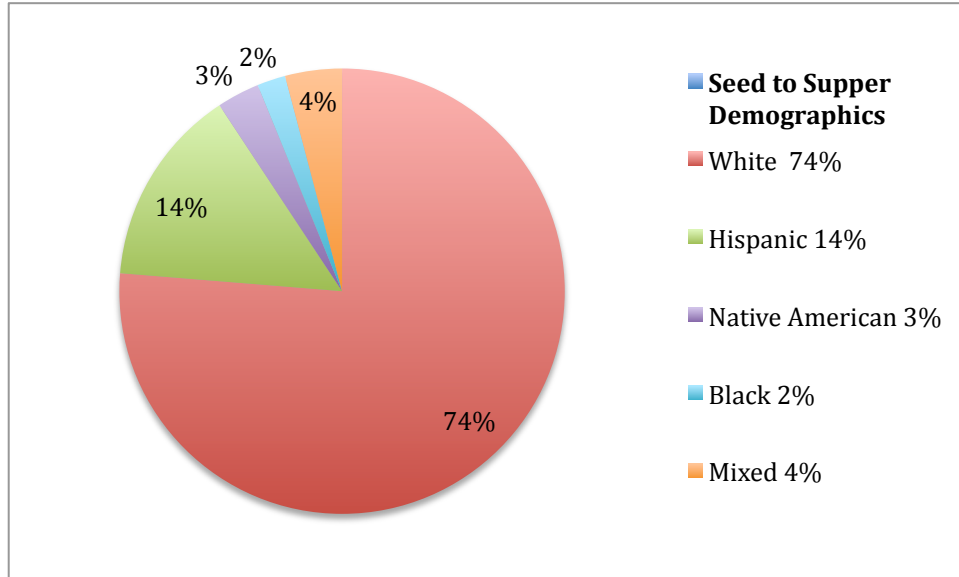
Oregon Hunger Factors: 2008

The interviewees included 15 females and 5 males for a total of 20 interviewees. The interviewees ranged from college-aged to retirement-aged (the *Seed to Supper* classes are primarily offered to adults). There were three categories of interview groups. Nine of the interviewees were *Seed to Supper participants*, three were *Seed to Supper* instructors and eight of the interviewees were key community members and/or leaders in the Portland region. The community members often played several roles, including county staff coordinators for the sites, as well as volunteers for the *Seed to Supper* Program. Other community leaders were active in food insecurity policy, community garden programs and education in the Portland region. The "Key Participants" are informants in the research process, collaborating as guides to the researcher (Bernard, 2000; Bailey,

2007). The key participants played a larger role in the research process at the sites. These key participants are highlighted in bold in Tables 3, 4, & 5.

The demographics available and category of participation are listed and described in the tables below. The names have been changed to protect the interviewees' confidentiality.

To understand the various levels of participants and interviewees, the following tables are divided into three groups: group 1 represents *Seed to Supper* participants, group 2 represents *Seed to Supper* Instructors and group 3 represents both community members and leaders as described previously.

Table 3

Interview participant information – Group 1: Seed to Supper Participants

Name	Group 1	Gender	Site	Role	Employed
Becky- key participant	*Seed to Supper Participant*	Female	Brookplace	Community member & volunteer	
David	*Seed to Supper Participant*	Male	Riverside	Community member, volunteer	
Mary	*Seed to Supper Participant*	Female	Brookplace	Community member	
Alfred	*Seed to Supper Participant*	Male	Brookplace	Community member	x
Bill	*Seed to Supper Participant*	Male	Brookplace	Community member	
Louise	*Seed to Supper Participant*	Female	Brookplace	Community member	
Hillary	*Seed to Supper Participant*	Female	Riverside	Community member, Volunteer	x
Alicia	*Seed to Supper Participant*	Female	Bell Tower	Participant only	
Terry	*Seed to Supper Participant*	Female	HeadStart facility	Community volunteer	x

Table 4

Interview participant information – Group 2: Seed to Supper Instructors

Name	Group 2	Gender	Site	Title	Employed
Raymond*	*Seed to Supper Instructor*	Male	Riverside	Services Coordinator	x
Susan*	*Seed to Supper Instructor*	Female	Bell Tower	Services Coordinator	x
Linda	*Seed to Supper Instructor*	Female	Lakeview	Volunteer	

* Both of these instructors were also paid staff members and worked at the site.

Table 5

Interview participant information - Group 3: Community members and leaders

Name	Role	Location
Elizabeth	Assistant to Elected Oregon Official	Washington, DC
Helen – key participant	Site Coordinator	Clackamas County
Braden	Major Garden Program Coordinator	Multnomah County
Melissa	Director, Community Gardens Program	Multnomah County
Carol	Elected County Official	Multnomah County
Misty	Garden Coordinator	Multnomah County
Anna – key participant	Program Coordinator	Tri-County area
Rachel – key participant	Program Coordinator	Tri-county area

Data Collection

The data collection phase of the study began in Summer 2009 after the

approval from the Portland State University Human Subject Review Committee. The

data collection phase had two parts: a quantitative evaluative survey instrument co-

created with Oregon Food Bank, and a qualitative component which included a set

of interview questions, observations, and participation designed by the researcher

to further understand the issues of food insecurity and access to locally-grown

foods. Both the survey and interview questions were created and submitted to the

Human Subjects Review Committee prior to beginning the study.

The ethical context of this research project deserves some clarification. The

true names and places have remained anonymous to protect identities and specific

gardens. However, some aspects of this project, in terms of implementation as a

community-based research project, have involved sites that have cooperated jointly

with PSU University activities for classes, demonstrations and other community

spirited activities. In this environment, some places have been revealed with

permission from the participants and key community members. Nowhere in this

paper do the true names or places appear, only references to the activities and

general descriptions of where the activities took place. However, as a small

community it is most likely that some identification is possible.

Quantitative: Survey Design and Implementation

Design & Sample Questions

The survey was co-designed with the coordinator of the *Seed to Supper*

Program with additional input from my faculty mentor. Using a combination of

forced-choice questions using Likert-scaled scoring, in combination with open–

ended questions, the survey was approved by late Spring, 2009 (see Appendix A:

Seed to Supper Survey). The Likert-scaled questions were designed to specifically

assess the impact of the *Seed to Supper* program on access to fresh foods as shown

below in Table 6, as well as program evaluation.

Table 6 reflects the research questions, with examples of survey questions

that addressed these four questions.

Table 6

Research Questions and examples of survey questions

Research Questions	Survey question: Lickert Scale of 1-3	Open-ended question or forced choice
1. How does the *Seed to Supper Program* impact food insecure communities and their access to fresh grown and local foods?	Survey Q2. I have gained enough experience to grow some of my own fruits and vegetables.	Survey Q.15. Please share a story about your gardening as result of this workshop. Q. 11 How often do you eat fresh fruits and vegetables?
2) How are the goals of the *Seed to Supper* framed/designed and positioned/presented in the served communities? *	N/A	N/A
3) Do these goals accomplish the overarching need for increased food security in urban and peri-urban Portland? **(This question addresses barriers)**	Survey Q7. I currently use a community garden space. Survey Q8. I have a garden in my yard.	Survey Q13. What prevents you from obtaining fresh fruits and vegetables or growing your own? Forced choices: Cost, availability, garden space or no time to garden
4) Does *the Seed to Supper Program* improve food literacy, self-reliance and create social capital?	Survey Q3. I grow some of my own produce.	Survey Q15. Please share a story about your gardening as a result of this workshop.

*Research question 2 was designed to be answered by the interview questions with instructors, key community participants and community leaders – see Table 6 & 7.

In addition to the research questions, the main goal of the survey was to

assess the learning garden program. The following survey questions are good

examples of open-ended questions that addressed program assessment and needs.

14. What would you recommend changing or adding to improve these workshops?

15. Please share a story about your gardening as a result of this workshop.

16. Do you need more information or advice to grow a garden? If yes, please explain

17. Where do you get your gardening questions answered?

The survey's main purpose served the needs of the community partner in providing suggestions for program improvement as well as testimonial statements about the successes of the program. Additionally, the survey identified the barriers affiliated with food insecurity.

Survey Implementation

Survey implementation began in the June, 2009 and continued through October, 2011. Oregon Food Bank's staff and volunteers administered the survey to the *Seed to* Supper participants while they were at the *Seed to Supper* research sites (see Tables 1 & 2). *Seed to Supper* participants self-selected and were not required to complete the survey. When needed, a translator was available to help with translation of the survey and to answer questions. There were 212 surveys returned over the three-year period, June 2009 through October, 2011. The data was entered into Qualtrics for statistical and comparison reporting.

Qualitative: Interview Design and Process

Interview Design: The Questions

Qualitative interviews provided a method for gaining not only answers to the initial question regarding access to locally grown foods, but also a fuller understanding of access barriers and program success. To gain more detailed information about access to locally grown foods, the interview questions expanded upon the survey questions to address the four research questions. Table 7 outlines sample interview questions linked to research questions.

Table 7

Sample Seed to Supper Participant interview questions linked to research questions

Research Questions	Interview questions yes/no:	Open-ended question or multiple choice
1. How does the *Seed to Supper Program* impact food insecure communities and their access to fresh grown and local foods?	Interview Q2. I have gained enough experience to grow some of my own fruits and vegetables. Q2. As a result of taking a learning garden workshop, do you eat more fresh-grown produce? If yes, what kinds, did you grow or purchase them?	Interview Q.14. Is there anything you would like to share about your Seed to Supper experience? Q. 4 How has this workshop changed the kind of food you eat?
2) How are the goals of the *Seed to Supper* framed/designed and positioned/presented in the served communities?		Interview Q8. What would you recommend changing or adding to improve these workshops? Interview Q.14. Is there anything you would like to share about your Seed to Supper experience?
3) Do these goals accomplish the overarching need for increased food security in urban and peri-urban Portland? (This question addresses barriers)	Interview Q1. As a result of taking a learning garden workshop, have you gained enough experience to grow some of your fruits and	

	vegetables? If yes, explain, If no, why?	
4) Does *the Seed to Supper Program* improve food literacy, self-reliance and create social capital?	Interview Q3. Were you growing fruits and vegetables before the workshop, or after the workshop?	Interview Q9. Please share a story about your gardening or meal experience as a result of this workshop.

The qualitative semi-structured and open-ended interviews were based on a series of fourteen questions derived from the survey questions (see Appendix B: *Seed to Supper Participant Interview* questions). These interview questions represented a series of yes/no questions, multiple choice and open-ended questions. All of these questions gave the *Seed to Supper* interviewees the opportunity to expand on their experiences in the classes or workshops. They also examined closely the barriers to food security, limitations participants' faced in gardening, and specifically what was important to them regarding access to locally grown foods.

A separate set of interview questions was designed for the key community members and instructors that related to the research questions, and specifically question 2, "How are the goals of the *Seed to Supper* framed and presented in the served communities?" As the interviews progressed, interviewees addressed the goals of the *Seed to Supper* program and its design within the context of their involvement in learning garden programs or specifically within context of the *Seed to Supper* program.

Table 8

Community Members/Leaders & Seed to Supper Instructors interview questions

Community Members and leaders – Interview questions		
Question 1) How do community garden educational programs help low-income families access locally grown foods?	Question 2) How effective are Portland educational programs in achieving this goal?	Question 3) What are your suggestions for improving low-income families access to fresh locally grown foods?
Seed to Supper Instructors		
Question 1) How does the *Seed to Supper* Program help families access fresh locally grown foods?	Question 2) In your opinion: How effective is the *Seed to Supper* Program in accomplishing its goals?	Question 3) What are your suggestions for improving the *Seed to Supper* program impact on low-income families access to fresh locally grown foods?

Interview Implementation: Framing the Interviews

The interviewees reflected the same three groups used to represent the group categories and demographics in the survey. Due to limited time and resources, the Human Subjects Review Committee suggested that I interview less than 20 *Seed to Supper* program participants and community members, (see Tables 3, 4 & 5), thereby limiting the number of interviews to a total of 18.

A good interview does not necessarily begin with the questions (Bailey, 2007). Bailey (2007) stresses the time spent nurturing relationships as critical to one's data collection as the time spent designing the questions. Attention to details includes where the interview will take place, how to use courtesy, what ethics are important to the population you are interviewing, how the interviewer can insure rapport, and Bailey suggests how the interview should be brought to closure (Bailey, 2007). These are all important aspects of the interview process and

implementation. The types of interview techniques must also be considered. These include how to get started, who leads the questioning, how to probe the interviewee, and learning how to interview (Bernard, 2000).

For this study, I used a semi-structured interview process using the same set of questions for each group of interviewees. However, with semi-structured format, there is flexibility to allow the process, or the flow of the interview to unfold. For example, several questions may be answered in one response, and require some re-ordering of the questions to allow for an organic development. Using an interpretive paradigm of inquiry or inductive process as used in grounded theory, semi-structured interviews use a formal structure with flexibility (Bernard, 2000; Bailey, 2007).

In order to practice and refine the interview process, I set up three pilot semi-structured interviews. Following all of the protocols required by my human subjects application, I interviewed three gardeners. One was a home gardener, one an activist gardener, practicing gorilla gardening on the eastside of Portland. The last interview was with a Portland State University gardener active in the student community garden on campus. These interviews provided an opportunity to use the digital recorder, practice the fourteen interview questions and feel my way through various techniques of introductions, closures, listening and refraining from interrupting the interviewees, and prompting them to talk more about a question. The following section describes how the interviews were conducted for each of the interview groups.

The majority of interviewees were participants of the *Seed to Supper* program – Group 1. Participants were contacted through electronic mail, a personal letter or by a request from the *Seed to Supper* instructor asking if they wished to participate in an interview about their gardening experiences. Once they agreed to an interview, I would contact the participant and set up an appointment and location for the interview. The interviews lasted 30 minutes and were conducted within the participant's garden or community center. When possible, the participants selected a location from an option of choices. Once the consent forms were signed and the digital recorder set-up, the interview took place. I took notes and prompted the interviewees using the questions.

I followed a similar process for the interviews with *Seed to Supper* instructors (Group 2) and community members and leaders (Group 3). However, the questions were open-ended and focused on program effectiveness. These interviewees were selected for their interest or participation in learning garden programs. However, in many instances key participants in the study recommended I interview people that they knew or with whom they had experience with; this process that is referred to by social scientists as "snowball sampling" (Bernard, 2000). This phenomenon was exciting and provided access to several active community members and leaders.

Although the interviews were semi-structured, the community leaders and key community members, as anticipated, spoke in an open-ended manner and in general about their role in addressing food insecurity in Portland. The *Seed to*

Supper instructors also were given a lot of latitude to discuss what they felt was important about the program.

Participation in the interview process was voluntary and each interviewee was notified of their right to end the interview at any time through the informed consent process mandated by the Internal Review Board responsible for graduate research involving human subjects. Wolcott (2009) advises interviewers to, "pay as much attention to your own words as you do to the words of your respondents" (p. 112). This advice is paramount for a researcher who seeks to gain insights into a community or culture— through the interview process.

Participant and Nonparticipant Observation, Notetaking, Journaling and Photographic Fieldwork

Bailey (2007) informs student researchers that " just as relationships are deeply embedded… in our experiences, field relationships similarly affect the field research process"(p. 73). The bulk of my observational fieldwork at the learning gardens was overt and unstructured. In general, the people of the community knew I was there to make observations about the role of the garden in their community. My participation was minimal. However, after three years, it was clear I was noticed and acknowledged by many members of the community. Bailey states, "the decision whether to participate or observe, or perhaps to do some of both, is affected by the paradigm and the tradition of inquiry being used" (2007, p. 81). In community-based research, it is expected that on some level the researcher will participate (Minkler, 2005).

During the second year of the study, I attended a *Seed to Supper* Instructor

training and began volunteering as an instructor for the *Seed to Supper* program. In

this capacity, I received first-hand knowledge about the curriculum, the training

process for the instructors, and what the Oregon Food Bank *Seed to Supper* Program

coordinators expected for the program. From this inside vantage point, I became a

participant in the program—as well as a researcher. My techniques for participant

observation were simple: I kept copious notes and journals, during and after

trainings, or workshops or presentations I attended or was giving. I assisted one of

the *Seed to Supper* instructors during a six-week gardening session at Brookplace,

and volunteered for several Fix-It (informational) Fairs. During this experience, I

did not bring my camera or notebook, I was there to teach or provide information. It

was a humbling and transformational learning experience for me as a garden

educator.

The following methods were used during my fieldwork as a nonparticipant

researcher: Journal keeping: Before each visit to a site, or before an interview, I took

preparatory notes about what I anticipated during my visit. I would either take

notes during an interview or if I was simply visiting a garden site, I would sit in the

garden areas and write down my observations, and make notes about aspects of the

garden that had changed from season to season. My observations were often

focused on place-based details or aspects of the community that had changed.

Photography: During my visits, I always brought my camera and

photographed the gardens, the garden art, the surrounding grounds, plants and

other things that stood out in the landscape. These photos became invaluable journals about the nature of the learning gardens. The photos gave me chronicle of the events, seasons and various styles of gardening techniques found in the community garden sites.

These fieldwork techniques provided insight into the life of the garden and the gardeners. The culture and experience came to life through these sessions and are reflected throughout my thesis and were an important element of data collection in addition to surveys and interviews.

Data Analysis

As formidable as folders of survey results, notes, journals, photos and transcribed interviews can be, the process of organizing the data and identifying patterns and trends is the heart of the research process. A system for organizing the data is invaluable for tracking and coding the data.

I used grounded theory as a framework for data analysis, which shaped the discoveries and emergent theories. Grounded theory is an analytical qualitative social research theory and method that provides guidelines to assist the researcher in studying social issues using inductive reasoning from observation (Bryant & Charmaz, 2007). Grounded theory also serves as a data collection and a data analysis system that allows for an emergent process of the discovery, which allows the theoretic frameworks to be revealed in the research process (Charmaz, 2003). Often grounded theorists will begin data analysis early in the data collection process, thereby simultaneously collecting and analyzing the data in order to allow

for emergent patterns, interests and discoveries. This pattern of analysis can be repeated and may redirect the questions and queries that initially motivate the researcher (Charmaz, 2003).   From a theoretical point of view, grounded theory describes the discovery process for emergent theories that I used to conduct this mixed-methods research project. As Charmaz (2003) suggests, I created a body of field notes to compare with interview notes. I coded the notes to identify similar categories, concepts and trends. After creating a large body of ideas, I created tables categorizing the concepts and cross-referencing all these to the surveys and my own observations. This took place during the first round of interviews in August 2009 and I repeated the process in the winter of 2012.

Qualitative Data

Grounded theory played a role in the interpretation of the fieldwork methods including note taking and interviews. As data were collected, each interview was transcribed and coded for patterns and trends as well as similarities and differences among participants, instructors and key community players (Bernard, 2000). Initially, for the preliminary study (the McNair study), a set of patterns and trends were identified and catalogued in order to address the first research question regarding the impact of the learning gardens on low-income families access to locally grown foods. For the purpose of this thesis, the interviews were re-analyzed and coded with the four main research questions in mind.

In addition, the coding was expanded to include new terminology introduced by the Leadership for Sustainability (LSE) program of study regarding sustainability,

garden-based pedagogy and food literacy, food justice and food democracy. By

combining the previous codes from the preliminary study and the LSE terminology,

I continued with grounded theory methods of coding. This flexible and resilient

coding method, as formulated by Glaser and Strauss in 1967, provides the

researcher with a set of relevant predictions, explanations, interpretations and

applications to follow. This sociological method of interpretation and coding process

has contributed to the creative interpretative unfolding of this research project.

Quantitative Data

The early survey data were recorded using an excel spreadsheet. During the

second year, the old surveys were re-entered along with the new incoming surveys

into a Qualtrics statistical analysis program. Qualtrics is an online Internet survey

program that allows for easy inputting of original data. It also provides a complete

statistical reporting system, and can be exported for charts, figure and summaries.

This program is ideal for survey design and implementation, but in this study, the

population was not equipped for this type of distribution. Qualtrics was strictly

used for the analysis aspect. The following (Figure 2) illustrates the reporting

capability and results of survey question number 1, "This workshop taught me

something that I will be to use in my garden."

Figure 2. Example of Survey Question with Statistical Analysis

1. This workshop taught me something that I will be able to use in my garden.
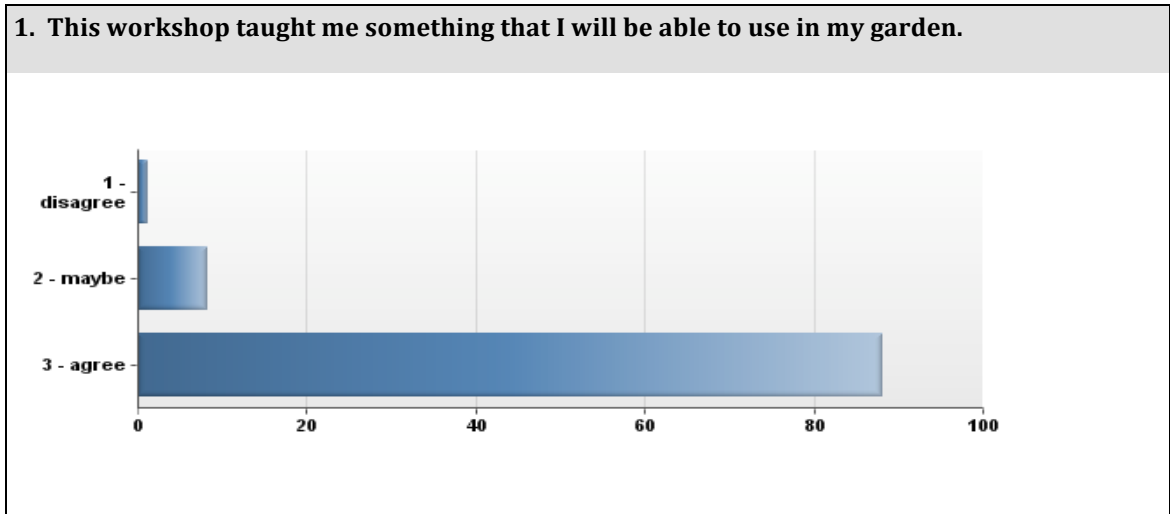
#	Answer		Response	%
1	1 - disagree		1	1%
2	2 - maybe		8	8%
3	3 - agree		88	91%
	Total		97	100%

Statistic	Value
Min Value	1
Max Value	3
Mean	2.90
Variance	0.11
Standard Deviation	0.34
Total Responses	97

Figure 2 illustrates the capacity that Qualtrics supplies to collate the survey responses and the options for presenting statistical responses. This program supplied a program assessment to Oregon Food Bank staff.

Validity

The issue of validity is critical to mixed methods research. This study was informed by several practices for trustworthiness and reliability. Guba's, (1981), criteria for validity as presented by Gay, Mills, & Airasian (2009), recommends a number of strategies for accomplishing validity. Below, I have outlined the primary strategies used for this study as described by Gay, et. al. (2009):

These strategies included prolonged participation at the site, persistent observation, peer debriefing, and collected documents (including film, articles, slice-of-life data, detailed descriptive data, especially through use of photography and note taking). It also involved developing an audit trail, practicing triangulation and practicing reflexivity. I will elaborate on a few of these strategies to clarify why they are outlined here.

The triangulation central to this study involved collecting data from several sources. Bailey (2007) suggests the importance of data collection "from respondents who occupy different social locations or are likely to have divergent views" (p. 77). In this study, the interviews involved three levels of groups whose involvement with the *Seed to Supper* program differed. For instance, I interviewed participants, instructors and community leaders. All of these interviewees were linked in some fashion to the *Seed to Supper* Program. The quantitative survey was

another form of data collection that could be compared to the interview data and triangulated. Bailey (2007) recommends triangulating as many types of data as possible (p. 77). This study used as many options for triangulation as possible.

Additionally, the long-term affiliation with the study and my involvement with the program established rapport and acceptance as an observer with key participants and community members. Lastly, the practice of reflexivity through journal keeping on a regular basis gave me the opportunity to go back through journals to recollect memories, observations and general discoveries. These proved helpful and informative, adding to the trustworthiness necessary for qualitative data collection.

Another factor influencing the validity of this study was serendipitous in nature, but very helpful and insightful to the analysis of the data. The numerous writing assignments during my course of study in the Leadership for Sustainability Education Masters program contributed to analysis and reflection of the work I was conducting for the study. I took every opportunity to reflect on this study for the course work, term papers and reflection writings required by my assignments.

Limitations

One limitation to consider in addressing the research design and the methods of this project is that it focused on multiple sites of one learning garden program—*The Seed to Supper* Program. With this in mind, generalization is limited by the small sample size of the study. The participants self-selected and generally had a predisposition for food literacy and gardening.

For the purpose of the community partner, the information derived from the survey and interviews proved invaluable. For the researcher, the importance of impartiality and sample size point to the need for future evaluations, longitudinal studies and further opportunities to create a random population in which to measure the success of learning gardens and the impact on access to fresh locally grown food and community food security. The scope and scale of this project were limited by resources and time, and by the importance of serving the interests of a community partner.

In concluding this chapter on methodology, I want to describe my positionality in this research as a gardener and as a person who has wanted to understand food security, community food systems and access to locally grown foods throughout my life. My positionality has played a significant role in the research design and process.

The Positionality of the Researcher

The positionality of the researcher is an important contribution to the research process and is a pivotal aspect of any thesis project. My personal experience has played a significant role in my motivation about this research topic. My personal experience with food insecurity, as well as my desire to grow my own food to develop self-reliance has spanned five decades. I bring an understanding of the historical context described in chapter one concerning the deterioration of access to healthy local foods, and have also witnessed, and participated in, the beginnings of the local food movement. My family stayed in the urban

neighborhoods of the 1960s and 1970s, and witnessed middle class flight, saw fruit stands disappear, along with the fresh bottles of milk delivered to our door replaced by plastic bottles of milk at a 7-11 convenience store on the corner next to the McDonald's restaurant ½ block from our home.

As a young person my reaction to, and solution for, this abrupt change within my foodscape was to become a vegetarian. Influenced by the counterculture food movement and its resistance to the industrial food system, I felt empowered to plant one of my first gardens in the rocky soil of our urban backyard. My life-long quest to grow my own food began from a loss of choice and a lack of fresh locally-grown foods in my neighborhood. The garden as a place of learning has a personal significance in my life story.

The transformative powers of the learning garden directly changed my personal access to locally grown foods and empowered me by increasing my food literacy and attainment of garden-based knowledge. My first learning garden experience was in a public high school program in the early 1970s. We studied horticulture, plant identification, vegetable gardening and soil management. This learning garden experience proved transformative to my food literacy and knowledge base for growing my own food and overcoming some of the food barriers I faced in my life. The reason I chose to study learning gardens is directly linked to this early life educational/transformative experience.

Significance and Conclusion:

The methods section describes how this research study was conducted and how the results were discovered. The *Seed to Supper* interviews and surveys and field data revealed a robust gardening community supported by many different community players and participants. As a gardener and a researcher, my willingness to get involved positioned me, and gave me the opportunity, to observe the potential of learning gardens and the various aspects of the *Seed to Supper* Program and the communities served. These components of the methodology are the nuts and bolts of the research process and position the researcher favorably (or not) into the community under examination.   The next chapter focuses on the results of the study in relation to the research questions.

Chapter 4: Results

Learning Garden Scene 4: A Senior Center with a Focus on Fresh Locally-grown Foods

Every day over 250 meals prepared for Riverside Court senior meals program use fresh locally grown foods from five community gardens, including Portland's city hall community garden. Serving meals prepared from fresh foods is one strategy Riverside Court uses to build a local sustainable community food system which increases access to locally grown foods. To strengthen these efforts, Riverside Court has partnered with the *Seed to Supper* program to improve food literacy for its members through hands-on gardening experiences. In my interviews at Riverside Court, members referred to increased self-reliance and improved food literacy as outcomes of their participation in the *Seed to Supper* program. This vibrant meal center is an example of a locally engaged community food system that has created a web of community gardens to serve its community, and sets the scene for the results discovered by this study.

Introduction to Chapter 4

This chapter addresses the four main research questions and presents the results and themes discovered through the data collection from the *Seed to Supper* sites. The first question addresses the impact on food insecure communities' access to fresh and local foods. The second research question examines the *Seed to Supper* program goals through *place-based learning and learner empowerment.* The third research question clarifies the *barriers* for the *Seed to Supper* participants and how

they define these barriers and finally question four asks how the program increases

food literacy, self-reliance and creates *social capital*.

Overview to Research Question 1

The first research question is: "How does the Seed to Supper program impact food insecure communities and their access to fresh and local foods?"

The data shows that the *Seed to Supper* program impacts food insecure communities by improving access to fresh and local foods through garden-based learning, which increases capacity for community building. The following three sections provide the findings from the survey, interviews and observations from the *Seed to Supper* research sites to support this general claim. Then, I show how community building fosters increased access to local foods through learning garden programs.

Survey Results: Increased Access to Fresh and Local Foods

The survey results showed that the *Seed to Supper* program has had a positive impact on food insecure communities and their access to fresh and local foods. First, survey results indicate that the workshops provided gardening knowledge that facilitated gardening practices (see Figure 3 *Seed to Supper* Survey Question 1). Second, *Seed to Supper* participants' indicated they were "encouraged to plant a garden" (see Figure 4 *Seed to Supper* Survey question 2). A majority of the participants also agreed they purchased more fruits and vegetables as result of the program and their gardening experiences (see Figure 5 *Seed to Supper* Survey Question 7). These results indicate that participation in the *Seed to Supper* program

led to increased access to fresh and local foods. The following survey questions

illustrate these findings:

Figure 3. Seed to Supper Survey Question 1

1. This workshop taught me something that I will be able to use in my garden.

#	Answer		Response	%
1	1 - disagree		1	0%
2	2 - maybe		15	7%
3	3 - agree		188	92%
	Total		204	100%
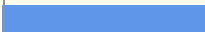
Figure 4. Seed to Supper Survey Question 2

2. This workshop has encouraged me to plant a garden.

#	Answer		Response	%
1	1 - disagree		5	2%
2	2 - maybe		25	12%
3	3 - agree		176	85%
	Total		206	100%

Figure 5. *Seed to Supper* Survey Question 7

7. I purchase more fresh fruits and vegetables.

#	Answer		Response	%
1	1 - disagree		34	18%
2	2 - maybe		39	21%
3	3 - agree		111	60%
	Total		184	100%

These survey results indicate a positive impact for learners and support the

conclusion that the *Seed to Supper* program improves participants' access to fresh

and local foods. In addition, the interview responses added descriptive details and insights to the first research question.

Interview Responses: Increased Access to Fresh and Local Foods

The interview comments from the *Seed to Supper* participants confirmed the survey results (see Table 9 Comments from *Seed to Supper* participants). The results from the interviews to research question number one indicated that the majority of *Seed to Supper* interviewees (Group 1) gained enough experience to grow some their own fruits and vegetables. These responses indicated that the program imparted some knowledge the participants needed in order to increase their access to fresh and locally grown foods. The interviews also revealed the importance of building a supportive community where garden-based learning is encouraged and supported. The comments in Table 9 were generally in response to interview question 1, which asks: "As a result of taking a learning garden workshop, have your gained enough experience to grow some of your own fruits and vegetables?" However, since the interviews were semi-structured, often comments would come later in the interview in response to a different question.

Table 9

Selected Comments from Seed to Supper participants related to research question 1

Seed to Supper Participants	Site	Comment
Bill	Brookplace	"I had so many tomatoes and shared my tomatoes with close friends. I don't buy many vegetables, mainly fruits at a close by store. I concentrate on [growing] tomatoes and green onions."
David	Riverside Court	This workshop… "what it has done for me is that I am more selective about fruits and vegetables, I go out of my way to eat more beets, swiss chard, and broccoli, and I tell people all about my eating habits… I grow my salad bowl on my balcony."
Alicia	Bell Tower	"I worked as a farm worker… and tried to grow [on my own] potatoes and beans, but they didn't grow, I didn't understand the needs of the soil, so they didn't do so well." … [From this workshop] "I learned how to increase the fertility of the soil. So I can grow a lot of vegetables in a small space and continue year after year."
Terry	Head Start facility	"One family took three containers to grow tomatoes, basil and all the kids were trying new foods. The *Seed to Supper* instructors did a really good job—the Head Start families talked about the class for weeks and we tied it into our curriculum."

These comments from *Seed to Supper* participants showed the positive impact from the program and how garden-based learning improved access to fresh and local foods.

Observations and Comments from Researcher Fieldwork Notes and Photos: Access to Fresh and Local Foods

In addition to the survey and interview results, my visits to the garden sites also provided further visual data illustrating the impact of the *Seed to Supper* program on the gardens. The garden beds were abundant with ripe tomatoes, onions, herbs and flowers in bloom. This visual data helped me understand the positive implications of the early survey results. This garden photo is evidence of how Seed to Supper garden-based learning impacted participants with their

gardening skills thereby increasing access to local and fresh foods (see Figure 6

Abundant Garden Bed).

Figure 6. Abundant Garden Bed

Community building emerged as a central theme as I examined the responses

that related to research question 1: "how does the Seed to Supper Program impact

food insecure communities and their access to fresh and local foods?" This major

theme points to the importance of building a supportive community where food

literacy is encouraged and supported and where garden-based learning is allowed

to take root—literally transforming community. The survey, interviews and

fieldwork journals pointed to the importance of creating a place/community where

members are encouraged grow food, share food and access food. Oregon Food

Bank's *Seed to Supper* program is impacting food insecure communities by building

community food security and, improving access to fresh and local foods through

community building activities.

> Community Building Leads to Greater Sense of Food Literacy and Access to
> Local and Fresh Food

The results of this study indicated that the *Seed to Supper* program impacts

the communities it serves through community building, which fosters garden-based

learning and food literacy. Community building and greater food literacy (to be

discussed in more detail in research question 4) led to improved access to fresh and

local foods in the *Seed to Supper* research sites. The results revealed through survey

responses, participants' stories and observational data collected at the *Seed to

Supper* sites supported the impact of the program. The stories from participants, as

well as the abundant gardens, indicated that participants had greater access to local

and fresh foods through increased community building activities. Moreover, the

community building that resulted from the *Seed to Supper* classes helped members

access more resources and activities that contributed to increased access to fresh

and local foods.

For example, during each harvest season, the garden coordinator at Cascade

View Food Pantry organizes a harvest fair and salsa-making contest. This annual

event has grown into a celebration where sharing the harvest, recipes and

gardening knowledge has led to increased community participation. The waiting list

for the community garden keeps growing as a result of all these kinds of activities.

All members of the food pantry community are welcome to attend this annual event

that makes it very popular and well attended. Community building is found in the

relationships built around the gardening activities and classes, including friendships

and partnerships developed both internally and externally.

The following survey results also show enthusiasm for community-building

activities and the eagerness of the participants to learn more about gardening.

Survey question 15, an open-ended question asked *Seed to Supper*

participants to share a story about their gardening following their workshop

experience (see Table 10 Survey Comments about classes). There were 111

responses to survey question 15. These short stories speak to the impact on the

relationships brought about by community building.   All of the *Seed to Supper*

survey respondents were anonymous.

Table 10

Selected Survey Comments about Classes Survey Question 15

15. **Please share a story about your gardening as a result of this workshop?**
"I live at the Meadows Community. We are starting raised garden beds which are new and I am very excited and need to get started."
"I now have two beautiful plants on my balcony that I am really "caring" about thanks to the *[Seed to Supper]* instructors."
"Keeping the food and sharing it with fellow human beings—and maybe some little creatures as well."
"We planted some collard greens, it was fun and interesting, yey!
"I like the opportunity to share experiences with others."
"I liked the "community" of the garden. It's a place to let your guard down safely and at the end of the day the "open arm" environment towards the earth and each other shines through."

Many of these comments offer simple one-line responses, however, over 50%

of the responses to this open-ended query related to some aspect of their

relationships with others, and to their community, as well as the successes they were experiencing in the garden. For many of the participants, sharing stories about their gardening experiences were important to them, indicating they turned to their friends, family and neighbors to gain more information or advice about their garden pointing to the importance of community.

Three categories stood out among the 147 responses to Survey Question 17: "Where do you get your gardening questions answered?" The most common response was personal friend or family member and others; second, books, magazines, and brochures, and third, classes—most indicated the *Seed to Supper* class. I interpret these findings to indicate that learning from others combined with book knowledge and classes created a learning community for the participants. These informational communities offered participants answers about gardening practices, and also these communities provided support systems to build on each other's successes.

In addition to the survey results, the interviews with the *Seed to Supper* participants (Group 1) and with key community participants (Group 3) shared the importance of building a supportive community where food literacy is encouraged and supported and where there is a place to grow food, share food and access food. Seven out of nine interviewees agreed when asked: "Do you share what you grow with your relatives or neighbors?" Additionally, they shared that having access to garden-based learning close to home was valued, as was a supportive and sharing community environment.

According to the participant interviewees, the *Seed to Supper* classes had

encouraged them to plant a garden and thereby had increased their access to fresh

and local foods. Additionally, they relied on their community's capacity for

networking through internal and external partnerships that helped the participants

access more garden-based learning, more resources, and basic skills to improve

their food security and sense of community (see Table 11 *Seed to Supper*

Interviewee comments about community). These comments are generally in

response to the first seven questions of the *Seed to Supper* interview questions, see

Appendix B for specific questions. The interviews were semi-structured and these

comments were often at various points in the interview.

Table 11

Selected Seed to Supper Interviewee comments about community

Seed to Supper Participants *Group* 1	Site	Comment
Louise	Brookplace	"When you grow more than you can eat—they have a table downstairs where you can put the extras, we all seem to have tomatoes!... sharing is number 1!..because there are so many folks without a garden."
Becky	Brookplace	"I work at the food bank…that's where I get my inspiration to share my knowledge with other people, we get a lot of vegetables … and I'm really trying to implement them, and give others different ways to serve them."
David	Riverside Court	"This program, being here has made a big difference in my life, given me a sense of community and it's like I have a family and everyone is a part of it….it's about community… the quality and the life that we have… the meaning is in the little things."

In addition to the *Seed to Supper* participants, several community members

and leaders (Group 3) shared their opinions about learning gardens and community

building with me (see Table 12 Community members and leaders, especially Group

3 Comments about value of community building). Braden, an instructor for a large

garden educator program stated that "the goodwill that is fostered by learning

garden programs is as important as the horticultural learning and these programs

symbolize the importance of community building as possibly more important than

the garden skills building." Similar to Braden's comments, other community leaders

observed the importance of the sense of community that is fostered through

potlucks, health fairs, workshops, collaborative programs and community

gatherings focused on the community, as evidenced in Table 12.

Table 12

Community members and leaders – Group 3 Comments about Value of Community Building

Community members and leaders – Group 3	Role in Community	Comment
Carol	Elected County Official	"This is really a priority of our district, to be involved with the urban food movement and use of the office and all the connections of the county and the commissioners to help the community outreach for more access to local food, more knowledge for healthy food preparation and to achieve that by working in partnership and collaboration across jurisdictions… with multiple agencies within the county. One of the foremost agencies working on this is our health department. We also have a sustainability department and … it fits with our image as a very green community and the health departments' health equity mission as well as the general public health mission of creating community where value is not just taking care of sickness, but promoting healthy communities. The other thing about gardening-- it's being outdoors… and can be quite a public activity and tends to sponsor relationships, so you meet your neighbors…creating a greater community way… [growing food] This is very much a foundation of everybody's life – eating—it is also a great way to cultural diversity."
Misty	Garden Program Coordinator	"The gardens have provided greater access to more fresh and local foods – in the middle of a crime ridden area – the garden is viewed as a sanctuary and a protected space – the community in general honors this great space. Our community garden is an oasis in a crime ridden, gang and drug oriented neighborhood, the garden time after time remains untouched by vandalism, graffiti and I know this is considered a sacred place in the community."

Misty, the garden program coordinator for Cascade View was amazed by the

partnerships and friendships that the workshops promoted and how they provided

a place for community building. Equally moved by the "sense of community"

created by gardening, the Brookplace site coordinator, Helen feels that "gardening

itself is a hopeful activity, it's a way for people to think of themselves in a different

way and it's a place to hang out." In addition to the interviews, my observations

reinforced the survey results and the interviewee responses about the importance

of community building to accessing fresh and local foods.

I spent many hours at the Brookplace housing project over the three-year

study period. The gardens expanded after the first year, and after many interviews

at this location, I received invitations to attend community events. I enjoyed my

visits and always came away feeling that this community had something special. I

wanted this same feeling for my own neighborhood.

One of the most memorable events I attended was the Health fair at

Brookplace (see page one, Learning Garden Scene 1). There were a dozen

information tables next to the community garden beds and dozens more inside the

community center. Many of the residents were sitting with friends eating turkey

burgers from the community potluck and trying out the blueberry shakes. It was a

pleasant day, hearing the stories and seeing all the residents relaxing and gathering

information from all the service agencies. I felt a strong sense of place, as if I were at

a farmer's market. The children were running around, the elders chatting and many

experts were available to discuss health, nutrition, gardening, emergency food

services and numerous ways to access skills and services to improve one's life. This

scene is indelibly etched in my mind and stands out as one of the most powerful

examples of sense of community. The Brookplace community has centered many of

its activities around the community garden.

Another site where I observed a strong sense of community was at Riverside Court with *Seed to Supper* participant, David's circle of friends. He spent a lot of time spreading the word about healthy eating and gardening and adding to the community by helping others help themselves. David mentored other gardeners, harvested produce and assisted the instructors for the *Seed to Supper* classes. The *Seed to Supper* provided resources for this community to build a learning environment that fostered a healthy sense of community.

This study shows that the *Seed to Supper* program impacts food insecure communities by providing greater access to garden-based learning, resources needed to help plant gardens, as well as community building activities. Activities such as community harvest tables, knowledge sharing and networking helped to increase access to fresh and local foods. When a food insecure community as a whole realized its potential to develop community food security, individuals and groups within that community began to use their abilities to garden, to teach others, and to lead. This capacity for increased community food security will be addressed in question four and in the concluding chapter.

Overview to Research Question 2

Research question two asks: "How are the goals of the Seed to Supper Program framed and presented to served communities?"

This research question addresses how the goals of the program are designed and operationalized within the context of the classes. The goals of the *Seed to Supper* Program are 1) community food security, 2) self-reliance and 3) building

food security through improved nutrition. From my observations and interpretations of the data, the goals are framed and based on educational models that bring experiential learning/education to food insecure populations by helping them help themselves through self-reliance, improved nutrition and helping build community; many of the components of community food security. This study found that these goals were operationalized by the *Seed to Supper* program through place-based education and learner empowerment.

Place-based Learning and Learner Empowerment: Foundations of the *Seed to Supper* Program

Place Based Learning

Experiential learning through hands-on instruction in a shared common space that is place-based is one of the foundations of the *Seed to Supper* program. Because the classes are place-based, the potential for shared traditions and culturally appropriate knowledge increased. The *Seed to Supper* program delivers this place-based garden learning approach in order to achieve its main goal of increasing community food security. This is achieved through greater understanding of our food systems, nutrition and ultimately self-reliance, within the context of each community. The place-based nature of the classes, which is unique at each of the sites, is a key element affecting how the goals are framed. The following survey results, interview responses and observations help analyze how the program in reaches its goals.

In survey question 2: "This workshop has encouraged me to plant a garden"

(see p. 3, Figure 4), 85% of *Seed to Supper* participants felt encouraged to plant a

garden. I found this result to reflect positively on the place-based success of the

program. Each research site was unique and the program instructors adapted the

curriculum to fit the learning environment. The positive result of survey question 2,

indicates this approach is working for the *Seed to Supper* program and helps to

operationalize the goal to build greater community food security.

The next survey question that addresses operational strategies is survey

question 14: "What would you recommend changing or adding to improve these

workshops?" This question helps clarify how the program is framed because it

provides insight into what participants are seeking to improve the program; what

worked and what wasn't working within the place-based approach. Over 80% of

the responses were positive. A few examples express this positive result: "the

classes are great" and "nothing, they are just fine" and, "they were very helpful." The

recommendations were unique to each site emphasizing the positive results of

place-based approaches.

The interviews with the *Seed to Supper* instructors also clearly demonstrate

how the *Seed to Supper* program is operationalized—these individuals make the

program and curriculum adaptations to improve the program's effectiveness. Two

of the three instructors interviewed for the study both served as *Seed to Supper*

instructors at the sites where they worked, and also as program coordinators,

providing services for *Seed to Supper* participants. Because of their unique

positions, these instructors were best able to respond to the needs of each site.

Table 13 shows comments from all of the instructors in response to interview

question two: "In your opinion how effective is the Seed to Supper in accomplishing

its goals?"

Table 13

Responses from Seed to Supper Instructors on the Effectiveness of Program

Seed to Supper Instructors - *Group* 2	Site	Comments to question: In your opinion how effective is the S2S in accomplishing its goals?
Susan	Bell Tower Title: Services Coordinator	"It is a successful class if it can inspire someone… even if it is to plant a small container garden because a lot of people don't have a lot of space, so that is really good, because it [the program] is geared towards whatever space you do have."
Raymond	Riverside Court Title: Services Coordinator	"The *Seed to Supper* program is helping families in a variety of ways, from the basic elements… it demystifies the whole idea of having a community garden and of gardening itself and it reawakens for many people the process they were used to as children…here at Riverside we are getting away from processed foods to natural foods… we are distributing (these foods) to those people most in need. And we took it upon ourselves here at Riverside to try to focus a lot of these people's energy. The way we thought to begin this was with the *Seed to Supper* Program. We had a five week class in which people learn what farming is and through that, the process of food became demystified."
Linda	Lakeview Correctional Facility Volunteer *Seed to Supper Instructor*	"Since re-introducing the garden in our facility, we have struggled with getting the kitchen to use the produce [from the garden]…because they were used to the easy, open a box, everything is washed and throw it on a plate and through the *Seed to Supper* program, it was really instrumental in— the women—asking for the food that was being grown in the garden and wanting that as part of their meals and also some of them worked in the kitchen…they helped promote that. I think the awareness and the learning about organic foods…through tasting the food [from the garden] and talking about the difference, all of this led to the expansion of the garden …and a lot of this has come from the women asking for the food from the garden."

The responses from the *Seed to Supper* instructor about the effectiveness of the program put into perspective the impact the program had on participants within the place they resided or frequented. As pointed out in the comments, participants often gained valuable knowledge from the program and in many instances this knowledge impacted their diets through the inclusion of locally grown foods into their diets. Each is example exemplifies the unique responses to place, learner's needs and available resources.

Raymond, a *Seed to Supper* instructor and site coordinator facilitated place-based learning by relying on place-based experiential learning in the context of the community he served. His approach to learning involves creating relationship to working the land and making connections between working the soil, farming and consuming locally grown foods. Making these connections triggered memories of farming as children or, for some, as young adults. He stated, "for centuries, people have farmed the Willamette Valley – farming starts with a seed and our hands in the soil, there is no great mystery." These instructors adapted the *Seed to Supper* program to fit the needs of the participants using place-based education and also meeting the goals of the program.

During the interview with Terry, a *Seed to Supper* Participant and Head Start instructor, she shared the importance of tying the *Seed to Supper* curriculum into her classroom unit on growing food. By connecting the children and their families on site to participate in a container gardening workshop for apartment dwellers she felt the program met their curriculum goals to teach about food literacy.

Additionally, the *Seed to Supper* program goals of community food security, self-reliance and improving nutrition were met by this collaborative place-based approach. The *Seed to Supper* program provided all the resources needed to plant seedlings in five-gallon containers, including fertilizer to stimulate plant growth. This insured success for the gardeners contributing to increased understanding of growing one's own food in the context of where one resides. Table 14 provides additional comments about the benefits of place-based education from community members and leaders (Group 3).

Table 14

Comments from Community Members on Place-based Learning

Community members and leaders – Group 3	Role in Community	Comment
Helen	Brookplace Services Coordinator	"The community garden is a place to hang out and creates a sense of community and can be a positive thing… working together on flower beds, all the interactions are so important." In my position-- to facilitate services, one of the things that has really helped me with this garden in terms of the work I do…is really getting to know people, in the process of working in the garden, doing the work, you get to hear about their goals and hear about who they are.. it is a place to hang out." With the *Seed to Supper…*it is dependent on the instructor and their connection to the participants, it is very important."
Misty	Cascade View Garden Program Coordinator	"Cascade View's community garden is a place where participants can develop pride, independence and hope. Through celebration of place, *Seed to Supper* classes and bringing in speakers about specific topics of interest to our community members. Over 100 people attend our annual garden party. We sponsor a salsa-making contest and invite all of the community to attend the harvest party."

Each of these community members organized *Seed to Supper* classes or workshops enabling them to see first hand the impact of the program on participants and their communities. Each community is fostered by a place-based learning approach where members are encouraged to participate based on their needs.

One example of place-based learning that illustrates this approach took place at Lakeview Correctional Facility. To accommodate the incarcerated *Seed to Supper* participants, the program instructors adapted the garden planning lesson so that learners could implement their plans once they were released from the correctional facility. According to the *Seed to Supper* instructor, many of these garden plans have been put into use by several of the participants (now released). Additionally, several of the participants have been trained to help instruct the *Seed to Supper* classes at the correctional site (there is an extensive learning garden at this facility as well). Many of the surveys from this site reflected the gardening planning and the participants' anticipation to garden in the future and also their willingness to help others learn to garden.

As I became more familiar with the sites, I found that the place-based application of the *Seed to Supper* curriculum was critical in meeting the needs of *Seed to Supper* community site members. I saw *Seed to Supper* participants sharing knowledge with one another. Sharing knowledge about what to plant and when to plant created place-based support systems that advanced learner empowerment and self-reliance—program goals for the *Seed to Supper* program.

Often the gardeners with advanced garden knowledge didn't speak a

common language with other community members. At Brookplace, funding for the

language interpreter during the *Seed to Supper* classes was eliminated, which

hindered communication between community members and with the *Seed to Supper*

instructors. The following photos, Figures 7 and 8 illustrate the importance of

place-based communication in a community garden.

Figure 7. Photo of Garden Signage I
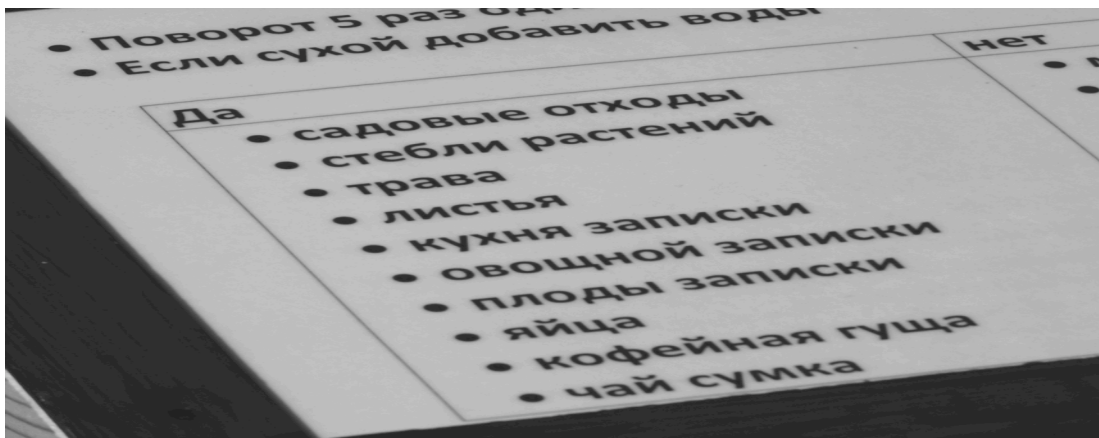
This signage in Russian sits alongside another sign in English, both list appropriate

foods and items for a composting system installed at Brookplace during the Summer

2011 by a Portland State University Senior Capstone course. This place-based

learning experience stressed the importance of accommodating language needs.

Figure 8. Photo of Signage II
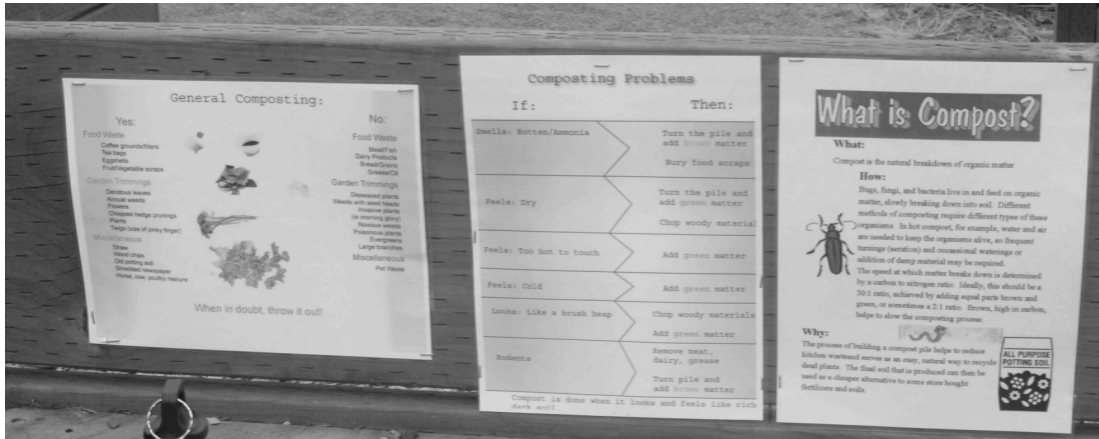
The signage installed at Forest Hills shows gardeners how to compost and what to expect. One community needed language accommodation and the other needed basic information on how to compost. Both examples show a place-based response to the learner's needs about composting specific to the community they live in.

Learner Empowerment: Building on Success

In addition to pointing out the importance of a place-based approach, the survey and interview responses indicated that participants had become empowered through their participation in the *Seed to Supper* program. Learner empowerment led to greater community food security by augmenting self-reliance, increased community involvement and improved gardening skills. The following results indicate that in addition to place-based learning, the *Seed to Supper* program has positive impacts on learner empowerment.

The survey results indicated that *Seed to Supper* participants' interest and knowledge increased, thereby helping the to improve their gardening techniques and enhancing their sense of empowerment. Survey question 15: "Please share a

story about your gardening as a result of this workshop?" best illustrates learner

empowerment and how that impacts *Seed to Supper* participants, see Figure 9.

Figure 9. Survey comments about Learner Empowerment

15. Please share a story about your gardening as a result of this workshop?

"I have gained a great deal of valuable knowledge which will assist me in becoming a successful gardener."
"We're planting more this year!"
"I started seedlings from seed for my garden for the first time in my life."
"I am planning to re-think how I plant and raise tomatoes."
"My plants are growing now because I took this class and now I know what I did wrong."
"I have learned how to keep bugs away, how to trellis and many other things."
"I've planted marigold and used the lime for my tomatoes, I also put a few trellises in. My garden is growing perfect."
"I am going to try to start my own herb garden."
"I have created a garden idea and made the idea achievable."
"My plan is to build a garden, involve my daughter in our garden. I also want to participant in "plant a row"—that is so good! Then, 3 days a week --take my daughter to volunteer at a community garden and give her the gift of giving."

Many of these comments reflect a willingness to try new garden techniques, which

led to greater self-confidence in the gardens. Increasing garden knowledge had a

significant impact on *Seed to Supper* participants and their access to locally grown

foods and their sense of empowerment.

The interviews with the following *Seed to Supper* participants revealed a

sense of achievement and learner empowerment. Both of these participants felt they

had gained knowledge, and additionally they felt empowered to help other people in

their communities access more knowledge about gardening and preparing food

from fresh grown foods as indicated in Table 15.

Table 15

Selected Comments from Seed to Supper participants on Learner Empowerment

Seed to Supper Participants *Group* 1	Site	Comment
David	Riverside Court	" The advantages [of growing your own food] there are so many, for one, the satisfaction of putting the time and effort, plus, you know what it does for older people, it is gives you something to look forward to. Life is so much more, if you have something to look forward to... also it is comforting, and when you're growing and planting you have to plan how to water them, what you're going to do with them and it also works with the rest of your life." The first thing they [*Seed to Supper* instructors] did, (to encourage me) ... was to show me the results of gardening and healthy food, and, it's not just feeding me – the garden is for the community ... Plus, you're learning... people come to me about their gardening questions and what I do is volunteer 7 days a week for Loaves and Fishes.
Becky	Brookplace	" I do buy a lot more vegetables even in the winter, now than I did before. I had never grown zuchinni or squashes and you know I didn't really know what to do with them. Now, I'm teaching "Healthy cooking on a Budget" here. ...A lot of people don't know what to do with a lot of vegetables and I started a class to teach them how to work with the fruit and then we got the gardens, a lot of people enjoy growing but they get tired of eating it the same way."

As these interview comments point out, learner empowerment often led to greater

community involvement, leadership roles, and the communities were able to

address food security through the human resources available on site.

The following Table 16 shows that community members and leaders also

commented on the importance of learner empowerment as important for

community food security. In framing the *Seed to Supper* classes, it was important to

these leaders for participants to see the benefits of growing their own foods and of

empowering others to have the confidence to garden. Each of these community

members views learner empowerment from a different perspective, but they all

value the impact garden-based learning has on food insecure populations.

Table 16

Comments from Community Members and Leaders about Learner Empowerment

Community members and leaders – Group 3	Role in Community	Comment
Misty	Cascade View: Garden Coordinator	"The classes and gardens increase self-sufficiency and enhance their experience in the garden… they grow their own food. Cascade View has been successful in achieving the goals of the program, and the director of the facility wanted to create more space for the garden program… to give people a chance to develop pride, independence and hope."
Helen	Brookplace Services Coordinator	"Gardening is such a complex skill, you need to know how to plant, prepare your soil, you have to learn how to incorporate gardening into your life… as a lifestyle… gardening is not something you can be successful at without some basic garden knowledge. … there is canning, and what to do with all the produce you get, how to use what you grow to provide food during the winter. You grow different things in each month of the year. The educational component is key to access to garden knowledge. And to help shift the cultural perspective of gleaning excess foods from corporate food systems to growing your own."
Melissa	Community Gardens Director (Metro region)	[referring to Cascade View gardens] " it is a fabulous concept and gardens are really a beautiful thing… you walk by and can feel that— it's pretty contagious. They provide options and feelings of empowerment by providing pathways for growing your own food. There are many benefits… gardening with other people, the value in social activities and building leadership and self-sufficiency for people… especially the connectedness to others."

Each community member had a different set of criteria that described how learning garden programs contributed to learner empowerment and how this helps build sense of self within the community.

One example of the impact of learner empowerment took place during a *Seed to Supper* class I was assisting. During this class, it became clear to us (the instructors) that the participants wanted to lead the discussion and share their gardening stories about planting seedlings. They were refining their gardening expertise through comparing notes and sharing stories and knowledge. There was a quiet pause as the instructors let go of the planned slide show and let the class proceed—self-led by the participants themselves. In my observation, these kinds of open discussions helped the participants practice their knowledge and share what they had learned about garden-based knowledge through their experiences (Research Journal, Spring, 2011). In all of my interactions with *Seed to Supper* participants I gained additional garden knowledge in the form of advice, food preparation for garden vegetables and cultural knowledge.

One afternoon while visiting Brookplace for an interview and photo session with several gardeners, a well-known gardener explained how to make green Borscht using sorrel leaves from her garden. The interesting aspect of this encounter was that she did not speak English and I did not understand Russian, with the help of other people visiting the garden that day, I left with a thorough understanding of how to make her sorrel soup. I had hoped to interview her, but was never able to connect with an interpreter to do so. By sharing her recipe with

me, and the visitors in the garden that day, she felt empowered by the exchange. The encounters I had with her proved to be productive exchanges, which contributed to my observations of the garden culture at Brookplace. The learning garden is an ideal location for impromptu learning settings, which empower learners—especially learner's with previous experience.

The data shows that the *Seed to Supper* gardening classes are framed to help participants build greater connections to each other through place-based, garden learning. And, when individuals are empowered to apply what they have learned-- this led to greater sharing and success in the gardens and communities. On the whole, the *Seed to Supper* participants' felt they had learned enough through the garden workshops and felt encouraged to grow more fruits and vegetables thereby successfully achieving the program goals.

Overview to Research Question 3

Research question three asks: "Do these goals accomplish the overarching need for increased food security in urban and peri-urban Portland?"

The *Seed to Supper* program goals include increasing community food security, increasing self-reliance and improving nutrition to increase food security. However, the barriers to increased food security remain daunting for food insecure populations. While this research shows the *Seed to Supper* program does increase food security, the analysis of this research question focuses on the barriers to food security indentified in the findings of the survey data and interview responses. The relationship between increasing food security and the barriers directly correlate to

whether or not the program is successful in achieving its goals. The barriers that

emerged include: cost and availability of fresh fruits and vegetables, access to

garden space, transportation, and economic hardship.

Barriers to Food Security

Cost and Availability of Fruits and Vegetables

The majority of the survey respondents and interviewees agreed that cost is

a major consideration when purchasing fruits and vegetables (see Figures 10 & 11*).*

Survey question 13: "What prevents you from obtaining fresh fruits and vegetables

or growing your own?"—provides a framework for a more detailed exploration of

the barriers to food security. This question specifically asked participants about

barriers to obtaining or growing their own food. Fifty eight percent listed cost, 52%

listed garden space, 35% listed availability and 21% listed no time to garden.

Figure 10 shows the results to question 13, the barriers to obtaining fruits and

vegetables.

Figure 10. Barriers to Obtaining Fruits and Vegetables or Growing Your Own.

13. What prevents you from obtaining fresh fruits and vegetables or growing your own? Check all that apply

Min Value	1
Max Value	4
Total Responses	N=154
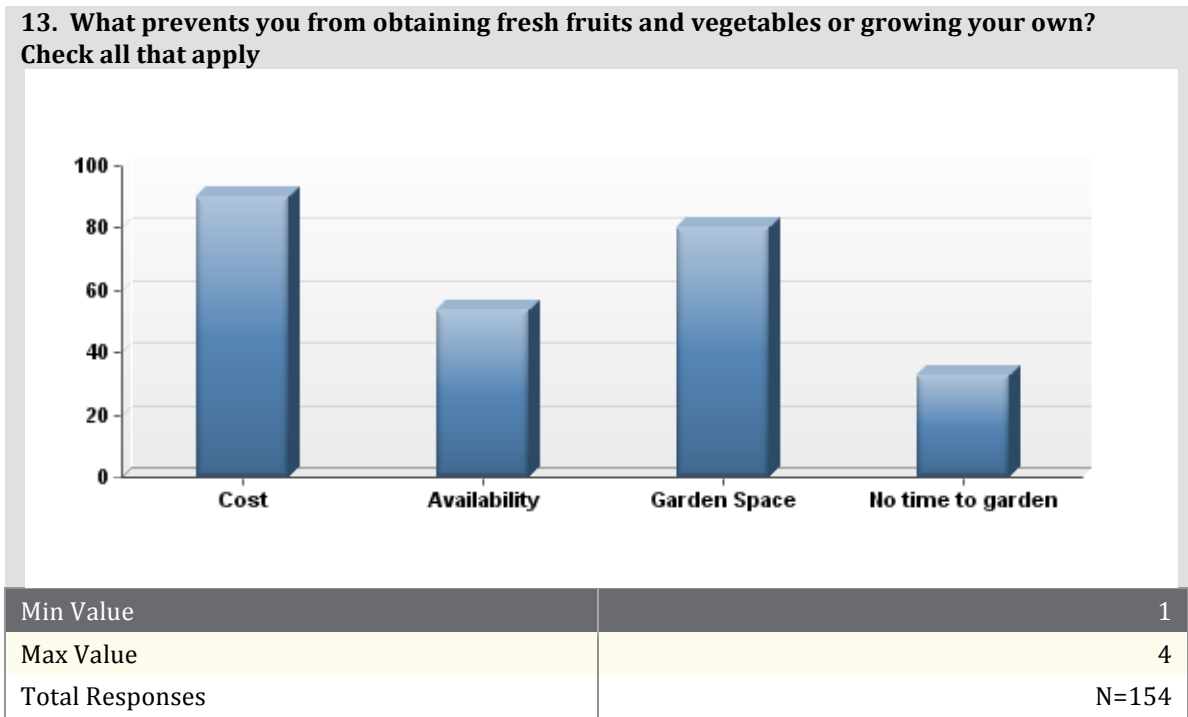
Cost and space consistently stand out as the biggest barriers to food security.

The survey results from question 12: "What additional things do you need to grow a garden?" identified seeds and money to buy garden supplies as most needed, third was space to garden, followed by garden tools and advice, see Figure 11.

Figure 11. Survey Results for Additional Items Needed to Grow a Garden.

12. What additional things do you need to grow a garden? Check all that apply.
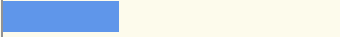
#	Answer		Response	%
1	Seeds		124	66%
2	Garden Advice		74	40%
3	Labor in Garden		53	28%
4	Access to how-to Garden Books		58	31%
5	Garden Space		80	43%
6	Help putting in garden		41	22%
7	Gardening tools		78	42%
8	Money to buy garden supplies		98	52%
9	Other		31	17%

N=187

As indicated above in Figures 10 & 11, *Seed to Supper* participants felt that cost is the single biggest barrier to obtaining fresh fruits and vegetables or growing them.

Although cost consistently impeded access to fresh grown foods, the importance of including fruits and vegetables was shown to be an important dietary priority for *Seed to Supper* participants. The following survey question asked participants how often they eat fruits and vegetables.

Figure 12. Frequency of Consumption of Fruits and Vegetables

11.	How often to you eat fresh fruits and vegetables?			

#	Answer		Response	%
1	1 time per day		70	35%
2	2-3 times a day		79	39%
3	Once a Week		17	8%
4	5 times a Week		36	18%
	Total		202	100%

N=202

This survey result indicates a potential correlation between participation in the *Seed to Supper* program and the increased consumption of fruits and vegetables. However, this claim would require a further longitudinal study for validity.

The interview responses further support these results and provide insight into how cost impacts shopping patterns, including how *Seed to Supper* interviewees decide what to purchase and why, and what influences overall consumption of fruits and vegetables. During an interview with the *Seed to Supper instructor* at Bell Tower, she explained how people often have to make difficult and careful choices when using their limited amount of food stamps (SNAP) to purchase foods, especially fresh fruits and vegetables.

The responses to interview question six focus on *Seed to Supper* participants' responses to the question: "what influences your decision to buy fruits and vegetables?" When participants were asked in the interview what influences their decision to buy fruits and vegetables, cost was the number one factor, see Table 17. This was consistent with survey results, which showed 58% of the respondents checked cost as a factor in obtaining fruits and vegetables (see Figure 10). The

second factor that interviewees said influenced their positive decision to buy fruits

and vegetables was nutritional value as evidenced in Table 17. Sixty percent of the

survey respondents agreed that they purchase more fruits and vegetables at the end

of a *Seed to Supper* workshop (this result also supports the need for further study as

indicated for Figure 12 results.)

Additionally, when asked during the interview if they felt they ate enough

fruits and vegetables, one half of the interviewees said they do not eat enough fruits

and vegetables. When they discussed their shopping habits and decisions about

fruits and vegetables, cost was the biggest barrier to eating more fruits and

vegetables.

Table 17

Aspects that Influence Purchase of Fruits and Vegetables

Interview question 6 *What influences your decision to buy fruits and vegetables?*		
Most important Influences		***Least mentioned influences***
Cost – 6	Availability – 2	Taste – 1
Nutritional Value - 5	Transportation – 2	Other - 0

N=9

Several *Seed to Supper* participants shared stories about the cost of fruits and

vegetables, (see Table 18). The importance of and the nutritional value of fruit and

vegetables are highlighted by the following comments. Consistent with the

preceding results, the barriers of cost, availability, and transportation are found

these comments.

Table 18

The Impact of Cost and the Importance of Fresh Fruits and Vegetables.

Seed to Supper Participants *Group* 1	Site	General Comments (from interviews)
Louise	Brookplace	"I'd like to grow some fruit… or pick my own…I am a big fruit eater and it is expensive therefore that is one of the things I would really like to have in my garden… I would eat more of the food that I like, meaning the fresh vegetables, fruits are still at a premium, I actually have to buy less produce because of the money involved."
David	Riverside Court	"I'll get Brussels sprouts, which I like and normally they are $4-5 per pound, but the Christmas before last…you could get 2 to 3 pounds of Brussels Sprouts for $1.99, boy, that's a deal… I do go to the farmer's market, but they are a little over-priced. I like going there and looking around, but I'm on a very limited budget."
Alicia	Bell Tower	"I have always known it is healthy to eat fruit and vegetables – as much as you can. But recently, I have thought more about it because my son has health issues. I am trying and I realize how important it is to eat a healthy diet…we shop at WinCo, Food for Less… the biggest influences on my decisions to buy fruits and vegetables is nutritional value and cost. I am looking for the cheapest, but healthiest (fruits and vegetables)."
Mary	Brookplace	"I'm trying to get more fruits and vegetables into my diet, nutritional value is important. [I grow fruits and vegetables] because they are cheaper, and they taste better."
Misty- Seed to Supper Instructor and Service Coordinator	Cascade View	"One woman participating in this garden told me "…because of this garden is why we have fresh foods"… cost is big factor and her children like vegetables now—because of the garden."

Although cost is a consideration, the majority of interviewees value fruits and

vegetables and 39% eat fruits and vegetables 3 times a day (see Figure 12*)*. This

indicates the importance of including fruits and vegetables in their diets, in spite of

the cost. Many of the comments in Table 17 support this major barrier, however,

the desire to access more fruits and vegetables is indicated as well.

Access to Garden Space

Access to garden space ranked second to cost as a barrier to accessing fresh fruits and vegetables (see Figure 10 & 11*).* For the *Seed to Supper* participants, access to garden space is a major barrier. In survey question eight, "I currently use a community garden space," 46% of the respondents indicated they did not use a community garden space. In the next survey question nine, "I have a garden in my yard," 37% of the respondents did not have a garden in their yard, while 48% did have a garden in their yard. Approximately half of the respondents have access to a garden space, which is important, since a place to grow food is critical to building community food systems. These results are further elaborated on in the interview responses related to access to garden space.

Seed to Supper participants emphasized the importance of access to garden space close to home. If interviewees did not have garden space they all maintained container gardens. To overcome this barrier, the site coordinator at Bell Tower (Learning Garden Scene 3) organized container gardening classes to interested members of the community. The *Seed to Supper* program provided all the containers, soil, fertilizers, seeds and plants to participants. Several participants were delighted to have everything available and in their hands so they could more fully understand how to grow lettuce on their balcony or doorstep.

The container gardening classes are popular and well attended according to *Seed to Supper* instructors and community leaders. The following Table 19 highlights comments from the participant interviews related to container gardening

and the need for more space to garden in. Although this barrier inhibits access to

locally grown fruits and vegetables for *Seed to Supper* participants, the container

gardening workshops provide a limited increase in access to both space to garden

access to fruits and vegetables.

Table 19

Comments about Container Gardening and Comments About Access to Garden Space

Seed to Supper Participants *Group*s 1, 2 & 3	Site	Comment
Alicia	Bell Tower	"I have a small space, but I have plants in buckets, zuchinni, tomatoes, but I want to improve the soil. I also have a garden here at Bell Tower…we need more help, if the agencies could help develop more garden space, seeds, soil amendments so that more people could garden. More places close to home."
David	Riverside	" Right now I have some [fruits and vegetables] on my balcony, but I grow them in everybody else's yard. I'm like the shoemaker…we're growing in Vancouver, a nice garden there, basically what I'm doing is helping out and overseeing the plantings, there is the Multnomah County garden and the City Hall garden."
Susan Seed to Supper Instructor	Bell Tower	"The success is planting a small container garden, a lot of people don't have a lot of space. More space is needed to garden in."
Elizabeth	Assistant to federally elected official	"A key issue is the regulations on placement of gardens…Where we place gardens is key. We are working on legislation that would provide financing either grants or loans for projects that want to bring and that are going to provide fresh food in underserved areas that could be grocery stores but that could also be farmer's markets, CSA's, etc… that one issue, from the garden perspective… it is going to be partly federal and a lot of the time this is going to be state and local, making sure that regulations are changed so that you can put a community garden in an area—so that we're putting them in areas that make sense. We need to put them in urban areas."
Carol	Elected Official- County	"Evidence-based practices and the fact that we can map and measure—that's a question we need to really address and since the focus here is on low-income people, … really the point here is that this (the Urban Food Movement) should be accessible to everybody and the more we create

		space for community gardens and the more we make it culturally okay—chuck out your lawn and put in a raised bed garden there. The more access low-income people will have… but how much access that is, I don't know. And I think that has to do also with access to grocery stores and the cultural role as well. It has to do with access…"

Seed to Supper participants actively pursued alternatives when confronted with garden space limitations and the *Seed to Supper* program provided resources to reduce this barrier. Policymakers on the other hand, realize the impact of the barrier and the need for mapping (evidence) and regulation changes to free up access to more public lands for urban gardening (and shopping) for increasing access to local and fresh foods.

The following photos illustrate how the use of public space for community gardens for Seed to Supper helps alleviate the barrier of access for participants to grow and harvest fruits and vegetables (See Figures 13 & 14). Community volunteers maintain the garden beds and the produce harvested by *Seed to Supper* participant volunteers goes to a food kitchen serving food insecure populations at Riverside Court.

Figure 13. Multnomah County Ecoroof Community Garden

Figure 14. City Hall Community Garden

Seed to Supper participants have access to the produce raised in both of these public spaces, which the City of Portland and Multnomah County have been dedicated for use by food insecure communities. Regulation for increased use of public lands for urban agriculture helps alleviate the barrier of access to garden space.

Transportation

Although the majority of the participants interviewed reside in public housing projects and have a degree of stability in their lives, the issues of cost, a space to garden in, and transportation were major barriers to accessing fresh fruits and vegetables. Some of the participants have problems with access to affordable discount grocery stores like WinCo (Stands for: Washington, Idaho, Nevada,

115

California and Oregon), and Food for Less, due to the lack of transportation. Public transportation was viewed as too cumbersome for shopping long distances from their home.

In a few of the communities, I observed shared transportation options such as carpooling and organized field trips to farmer's markets, Community Supported Agriculture sites, nurseries, and large discount grocery stores. The ability of the participants to share costs of transportation or to create alternative means of accessing food depended on a sense of community and members who facilitated these activities. For example, one participant biked from community garden to community garden in order to harvest produce. During the summer he delivered vegetables to the meal kitchen daily. During our interview, we walked to a bike shop and he showed me the bicycle he wished for. It was a large city bike with huge produce saddlebags on each side. He was confident that eventually he would deliver produce with that bicycle.

Most participants shop at the grocery store nearest to their home due to limited transportation as shown in responses to interview question five: "Where do you purchase or obtain most of your fresh produce?" The responses revealed where participants obtained their fresh produce. One interviewee belonged to a Community Supported Agriculture (CSA) organization and occasionally shopped at New Seasons (a local grocery store known for its excellent selection of locally grown foods) and Trader Joes. Only two people shopped at farmer's markets, and all interviewee mentioned that farmer's markets are too expensive. All interviewees

indicated they shop at the supermarket closest to where they live: primarily

Albertsons and Safeway (see Figure 15).

Figure 15. Seed to Supper Participant Interviewee Shopping Patterns
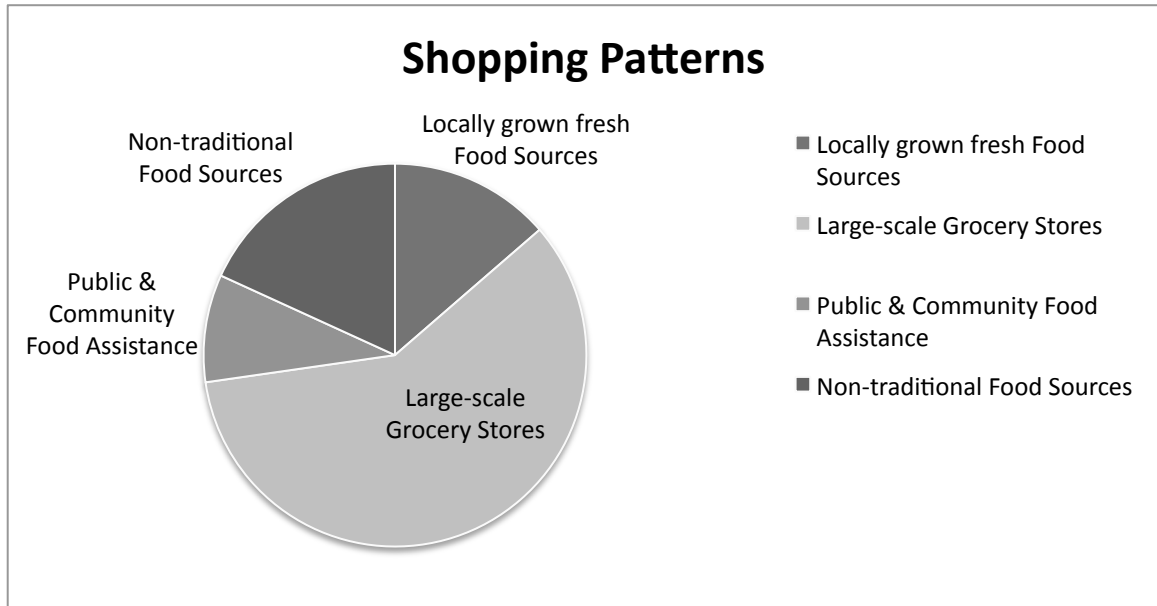
n=9

The interviewees indicated that they shopped at these stores because of

convenience, not necessarily because they are less expensive. WinCo was often

mentioned as a shopping place to find good value—but getting to a WinCo store is

difficult for most, because they rely on public transportation. Several of the

interviewees said they preferred fruit and vegetable stands to farmer's markets and

three participants regularly shop at local fruit stands because of freshness and good

prices. Traveling to fruit stands was an issue for them all, but they felt it was worth

the savings if they could get there (Withers, 2010). See Table 20 for samples of

comments related to transportation.

Table 20

Selected Comments from Seed to Supper Participant Interviewees Related to Transportation

Seed to Supper Participants *Groups* 1 & 2	Site	Comment
David	Riverside Court	"I go out of my way, I get on the train and go out to 162nd to Grower's Outlet. I get onions for .39 cents per pound, sometimes I get cucumbers, 4 for a buck and they have great produce. Normally, they're open 7am – 7pm … and it's all local, I bet. I get milk there; it's hormone free. I believe there is a difference in the taste of the milk and the vegetables out there, the tomatoes, the Romas, I pay more in town than out there. It's worth it to get on the train."
Christine	Brookplace	"Cost and transportation influences my decision to buy fruits and vegetables and availability. I used to be able to walk, but now I can't, it's just too much. I used to have a cart. If I have to take the bus, go downtown cross the tracks, wait for the bus to get to Albertson's I have to put in as much time with transportation each way as I do for shopping. One winter, I had a very bad experience in the cold waiting for bus and became very ill as a result, I'll never forget that."
Susan – *Seed to Supper Instructor*	Bell Tower	"Transportation is hard, they [*Seed to Supper participants*] need to live close to their garden…even buying fresh food at the grocery store can be an issue."

The following community members and leaders shared comments about the importance of access to transportation for food insecure communities. The lack of available transportation creates barriers for accessing fresh locally grown foods. Both of these on-site services coordinators have first hand knowledge about the impact of this issue on food insecure populations (see Table 21).

Table 21

The Impact of Limited Transportation Options on Food Insecure Communities

Community members and leaders Group 3	Site	Comment
Helen, site services coordinator	Brookplace	"In terms of improving people's access to locally grown foods, transportation is really key, especially at Forest Hills. Being able to get to the (closest) farmer's market is even a struggle because of limited bus service up there. There is no service on the weekend, which is when the farmer's market takes place…it (transportation) is a barrier to all sorts of things, especially for getting fresh foods. There's a close-by food market, but it's really expensive."
Misty, Services and garden coordinator	Cascade View Pantry	"This neighborhood is on the edge of the city – the bus lines and routes are limited and transportation is a barrier. Developing access/transportation to the farmer's markets is important for members of our community."

These selected first-hand observations and comments from site coordinators indicate how significant transportation barriers are for food insecure populations, especially in accessing locally grown foods. Many of the participants rely solely on public transportation and many areas of peri-urban Portland do not provide regular public transportation on weekends or if they do, it is very limited. For *Seed to Supper* participants, this limits access to farmer's markets, food coops, CSA's and other alternative shopping options, inhibiting access to locally grown foods. The next section focuses on the overall issue of economic hardship and the impact on *Seed to Supper* participants.

Economic Hardship

Economic hardship is the biggest hurdle to overcoming food insecurity. Addressing this barrier is difficult in terms of the scope and scale of this study, but

119

nevertheless warrants discussion. This barrier impacts all aspects of food security

including finding or creating garden space, paying the annual fee to join a

community garden, buying plants or seeds, buying locally grown produce and foods,

education costs, and buying gas for transportation to access a community garden, a

nursery, or grocery store. The results discussed below raise additional questions

and focus on the overwhelming reality of social inequity for food insecure

populations. This next section reflects the attitudes and opinions from the survey

participants, interviewees and observations from my fieldwork.

The survey results revealed the four main barriers (see Figure 10), three of

which I have addressed in the preceding sections. Although this study found the

Seed to Supper program goals—building self-reliance, improving nutrition and

increasing community food security—provided pathways to increase food security,

the challenges of economic hardship are major factors in preventing food security.

In order to address research question three: "Do these goals accomplish the

overarching need for increased food security in urban and peri-urban Portland?" I

ask a related question: "are the Seed to Supper program goals alleviating food

insecurity?" In order to answer this question, it is important to understand how the

program addresses the barriers to food security.   A number of themes contribute to

improving food security including community building, place-based learning,

learner empowerment, building self-reliance, food literacy and greater social capital

(discussed in next section). Additionally, the main program goal—to achieve

community food security—is primary, while building self-reliance and improving

nutrition are secondary goals. The latter goals are strategies to achieve the main

goal of food security. This distinction is important. Historically, learning gardens

have been viewed as remedial in nature, as noted in the literature review, and have

stressed building self-reliance and self-sufficiency—hands-on learning and

increasing access to gardening knowledge (Lawson, 2005).

However, as the Riverside Court instructor stated, gardening and farming are

the heritage/legacy of many cultures in the Willamette Valley as well as the culture

of recent emigrants. Self-reliance and self-sufficiency are inherent to these

populations. What I found from the participant and community member interviews

is that in order to create local community food systems, more resources, such as

funding, transportation, and motivation/incentives are needed to connect with

other community members to build community food systems. The *Seed to Supper*

program sites examined for this study appeared to be more successful in creating

"community" and the networks for community food systems than many middle class

neighborhoods in Portland. While technically, food security is most likely higher in

these middle class neighborhoods, this is most likely due to higher economic

incomes and greater resources than to any community building efforts; this point

could can be argued given all the neighborhood efforts to build community in

Portland, Oregon.

Several community leaders were aware of this distinction between the

cultural and economic impact on neighborhoods, however, they felt that is was their

mission to facilitate a "major food paradigm shift" (Carol, elected official). Several

community leaders felt increased economic impact could only come from a major shift in government funding that would change how farm subsidies are allocated by altering the 2012 farm bill. Additional improvements could be achieved through local, and state efforts to reform land use policy and to create local solutions for alleviating food insecurity. The garden instructor and leader at the Riverside Court felt that a combination of food literacy and grassroots organizing directly with food insecure populations could alleviate food insecurity with the greatest success.

Another talented and effective services coordinator felt that building a community food system through the learning garden provided hope for the populations she worked with. Additionally, she felt the garden provided an opportunity for participants to learn to get along with others and how to overcome differences and cultural barriers were imperative to building a food secure garden-community. She states, "every day participants face the difficult choices of how to use their resources and live with economic hardship." She continues to say that instilling some hope and providing food alternatives to the members of the communities were some of the main goals of the instructors and coordinators directly dealing with the *Seed to Supper* populations.

All of these observations, comments and suggestions point to the importance of coalescing community interests and building stronger community ties, ultimately leading to food democracy and food justice in overcoming economic hardship.

The notion of instilling hope and providing food alternatives segues into the fourth question: "how does the Seed to Supper program impact improved food

122

literacy, self-reliance and create social capital?" Asking *Seed to Supper* participants

directly about food literacy, self-reliance or social capital was not an option for this

study due to the semi-structured interview questions relating to the survey and the

decision to keep the inquiry less invasive. However several open-ended questions

focused on sharing a story or experience about the *Seed to Supper* program. And

often throughout the interviews, participants would share stories about growing

food, buying produce and how these activities played out in their lives and how they

personally impacted socially and economically. By being present at the sites and

spending the past three years visiting, observing, participating and learning along

side participants, I have gained an understanding about how their lives relate to the

learning gardens. These on-going discussions and observations helped to shape my

perspective on the findings related to research question number four.

Overview to Question 4

Question four asks: "Does the Seed to Supper program improve food literacy,

self-reliance and create social capital?"

Question four focuses on improved food literacy, self-reliance and the social capital

that was created through the *Seed to Supper* classes, workshops and the

partnerships formed.

Food Literacy
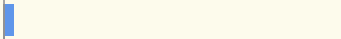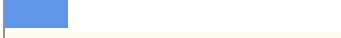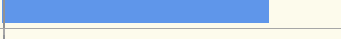
Food literacy means possessing knowledge about where food comes from and

how we access food—literally how it is grown, harvested and prepared (Nordahl,

2009). Although garden-based learning and sustainability education are closely

connected to food literacy, when the term "food literacy" is used, it refers to the culturally embedded aspects of food derived from collective and individual memories about the food our families grew, prepared and ate. Although several generations may not have lived on a family or a commercial farm or even near an urban garden, the connections are often still alive.

The survey results illustrate the overall positive impact of the *Seed to Supper* program impact on food literacy, with 92% agreeing that the workshops taught them something that they would use in their gardens (see Figure 3). The fourth survey question, "I have gained enough experience to grow some of my own fruits and vegetables" showed that 79% agreed (see Figure 16).

Figure 16. Participants Agree They Have Enough Experience to Grow Some Fruits and Vegetables

4. I have gained enough experience to grow some of my own fruits and vegetables.

#	Answer		Response	%
1	1 - disagree		6	3%
2	2 - maybe		37	18%
3	3 - agree		159	79%
	Total		202	100%

N=202

These results indicate that the *Seed to Supper* program has impacted the participants by improving their gardening knowledge and food literacy. The survey results show that 59% of the participants had grown some food in the past two years (see Figure 17).

Figure 17. High Percentage of *Seed to Supper Participants Have Grown Food Within*

Two Years

6. Within the past two years I have grown some food.

#	Answer		Response	%
1	1 - disagree		51	27%
2	2 - maybe		27	14%
3	3 - agree		112	59%
	Total		190	100%

N=190

   A majority of the *Seed to Supper* participants had existing gardening

knowledge prior to the *Seed to Supper* classes, indicating some degree of food

literacy. However, the garden based classes and workshops better prepared them

to deal with garden issues such as pest management, seasonal planting cycles and

other dilemmas gardeners face.

   In survey question 5, 64% indicated they would accept more gardening

advice and gardening training if it were available (see Figure 18). Within this

population, access to gardening knowledge and food literacy is welcomed and

anticipated.

Figure 18. Seed to Supper Participants Would Like Additional Training

5. I would like more gardening training.

#	Answer		Response	%
1	1 - disagree		18	9%
2	2 - maybe		53	27%
3	3 - agree		124	64%
	Total		195	100%

N=195

These survey results indicate an informed population receptive to garden-based learning and food literacy. The interviews further demonstrate the existing knowledge base and willingness to share within their communities. *Seed to Supper* populations demonstrated knowledge and the desire to access more garden-based learning through the *Seed to Supper* program, each other and their community resources.

Many of the stories about farm life, or gardening remain embedded in the collective memories through family lore shared by grandparents, parents and other close family members (Nordahl, 2009). Traditional communities, both indigenous and historically agrarian cultures have passed down gardening and food literacy knowledge (LaDuke, 2005; Nordahl, 2009; Parajuli, 2002). The following examples illustrate a few *Seed to Supper* participants that have strong connections to embedded garden-based knowledge.

"I love the taste of my homegrown tomatoes," exclaims Bill, a part-time gardeners at Brookplace. "I don't have a lot of time, but I grow all my tomatoes and onions." He explained that his parents were farmers in Japan and they grew all of their own food. Now, as a returning college student, he is pursuing a degree in computer software programming, but having access to better tasting food is the main motivation he participates in the community garden at Brookplace. Although a small portion of his diet is homegrown, he is aware of his preference for fresh tomatoes and other vegetables, and finds a way to access other fresh foods that he is accustomed to at an Asian market located at the peri-urban fringe of Portland.

Another *Seed to Supper* participant, David, has a history of farming experience and knowledge and he takes an active leadership role in his community by assisting with classes and harvesting produce for the meal center where he volunteers. He shared that, as a child, his family was "very poor," but they always had food on the table because they raised all their own food. He exclaimed, "we milked the cows and every day collected eggs from the chickens. We grew all our greens and potatoes. I remember all that!" They did not experience food insecurity, but they were "very poor."

The interviews revealed that most of the participants had food literacy that went back to their childhoods. Most had direct experience with farm life, a garden plot or a close family member who imparted gardening knowledge to them. These memories were vivid and gave them motivation to grow food now. The *Seed to Supper* workshops and classes were enriching reminders of their own food culture.

The confidence that comes from knowing how to plant a package of seeds and to use compost and other soil amendments to help them grow is very empowering. In an interview with another participant she expressed her gratitude for learning about the connection between soil amendments and enriching the soil; she referred to the process as a "*milagro*" (miracle). This participant was previously a farm worker and she spoke passionately about growing her own food on a small scale. Although she had experience in a commercialized farm setting as a farmworker, the *Seed to Supper* classes taught her about the soil and the amendments needed to create healthy microorganisms. She spoke of her reluctance

to add chicken manure to soil that would produce food she gave her children. But once she understood how it improved the soil she realized its importance. She gained respect and expressed wonderment for the miracle of growing things. The miracle of gardening and the awe of growing your own food is an important component of food literacy and sustainable education (Withers, 2010).

Understanding the impact and challenges of diversity within food insecure populations is important for analysis of food literacy. When asked what she meant by cultural food shift, public official Carol passionately described her observations about the many diverse cultural groups locating in the Portland region that have closer connections to farming and food production than many of our local dominant culture. She saw this diversity as an opportunity to create cultural exchanges that could lead to a "cultural food shift or paradigm shift." She referred to the need for a paradigm shift in order to create greater local access and systems for locally grown foods. She continued by describing the need to move from "processed to fresh foods" and the enormous task of educating the public about the benefits of fresh foods. She cited economic barriers and the cultural influences of the media--including the constant exposure to cheap processed foods advertised on billboards and on television—as major obstacles to a healthier local food system. People have come to expect convenience and speed. She pointed out that one key resource for improving this situation could come our diverse populations. She suggested these populations have a lot to teach us. She asks the question, "How can we access this knowledge?" She felt the community garden is a place where the cultural barriers

128

can be crossed and we can benefit from learning about new foods and food preparation.

To add a different perspective on food literacy, Brookplace services coordinator Helen stated, "People really don't have access to fresh locally grown foods without a community garden and a lot of people are not able to participate in a community garden without the education programs to support them in doing that, unless they happen to be from a community where people have historically gardened like at Brookplace; a place where we have a big group of immigrants and seniors who grew up with the idea of gardening. But if you grew up in neighborhood that didn't have that history, and the education programs are not provided, there will be people who are not comfortable participating in gardening. It is something so new them, not something you can be successful at without some basic garden knowledge.

Participant Profile: Food Literacy

Becky resides at Brookplace. She has been involved with the community garden since its inception. Her mother gardened and Becky assisted her as a young girl, but did not actively garden until she moved to Brookplace. She is now an active volunteer there and has become an on-site cooking instructor, helping the residents adapt fresh garden produce into their diets. To facilitate learning and learner empowerment, she offers group classes, but also works one-on-one with members who have special dietary needs. As an educator and organizer, Becky is an example of a Brookplace member who has embraced food literacy and created a leadership

129

role in the community. Recently, she shared with me that she had overcome her battle with type-2 diabetes and had controlled the diabetes through dietary and exercise programs. She courageously told her story in public at the 2011 Multnomah Food Summit and attributed this to her active lifestyle and involvement in growing as much of her own produce as she could and by utilizing healthy foods available through Oregon Food Bank's programs.

Very often the participants of the *Seed to Supper* program already have active community gardens and possess collective gardening knowledge among their community members. Many of the *Seed to Supper* participants who had a high level of food literacy possessed confidence about their participation in the learning garden and felt connected to their food heritage. Their participation in the community garden manifested greater food literacy and empowered other members around them with personal food security as well. These individuals often took leadership roles in passing knowledge along about growing food and accessing food.
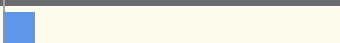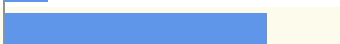
Self-Reliance

The Community Food Security Coalition states on its website, "Community food security projects emphasize the need to build individuals' abilities to provide for their food needs. Community food security seeks to build upon community and individual assets, rather than focus on their deficiencies." How do we measure self-reliance? While it is difficult to quantify self-reliance, the survey used in this study asked participants to share their stories about gardening. Many of the stories focused on the pride and joy of growing a good tasting vegetable, as well as

130

increased community activities and celebration of food through harvesting, weeding

parties and the classes (see Table 15). The following survey responses show the

impact the program has had on building self-reliance.

Survey question three asks *Seed to Supper* participants if they grow some of

their own produce. This question focuses on whether participants were using

garden-based learning and putting it to use. Figure 19 shows that 78% grow some

produce. This leads me to conclude that a majority of the *Seed to Supper*

participants possess self-reliance, and as the previous section on food literacy

suggests, they already possess self-reliance. However, it is likely that the program

imparted additional knowledge necessary for them to grow their own produce.

Figure 19 Percentage of Seed to Supper Participants that Grow Produce

3. I grow some of my own produce.				

#	Answer		Response	%
1	1 - disagree		19	9%
2	2 - maybe		25	12%
3	3 - agree		157	78%
	Total		201	100%

N=201

Many of the survey results supported the impact on self-reliance through greater

learner empowerment.

One example of building self-reliance through the *Seed to Supper* program

took place in a HeadStart program was previously discussed in an earlier section on

place-based learning. The teacher, and *Seed to Supper* participant, Terry told me

about the success and popularity of a container gardening class she helped to

arrange. She was surprised when 25 people arrived (the parents and children) to learn how to grow tomatoes, basil, and salad makings on their balconies and in their small yards. In addition to using the school curriculum with a hands-on activity, the families were taught skills that could lead to greater access to fresh grown foods. The instructor felt involving families provides role modeling for self-sufficiency and self-reliance.

Misty, the garden coordinator at Cascade View food pantry felt the *Seed to Supper* program had "done wonders for many of the participants in her learning garden program." One of the gardeners at her facility had shared with her that "participating in this garden is why we have fresh foods." She was encouraged because her children actually like vegetables and she felt it was due to the hands-on experience of growing their own produce. Many of her clients would not have access to this much locally grown food otherwise. One of the first things she told me was that the *Seed to Supper* learning garden concept helped "increase self-sufficiency and enhanced their experiences in the garden."

Another garden coordinator interviewed for the study emphasized that giving people a chance to grow their own food would foster pride, independence and hope; she said it was better than, "just showing up for free food." The added value of self-reliance versus free food played a role in the culture of the service providers and program coordinators, and policy makers of the emergency food services and programs. In the interviews, elected government officials, Oregon Food

Bank leaders, instructional leaders and the community services coordinators stressed the importance of imparting self-reliance in the *Seed to Supper* program.

Another venue that warrants mention is City of Portland's Bureau of Planning and Sustainability's annual neighborhood FIX-IT Fairs held throughout the city. The fairs honor and promote healthy families, healthy homes and offer free workshops, classes and information tables. These fairs are targeted to food insecure populations. At each of the fairs, located throughout the Portland Metro regions, the *Seed to Supper* program offers gardening, composting, and container garden workshops. The workshops and demonstrations are packed with participants – generally 30-40 people attend these workshops eager to gain specific vegetable gardening basics for the Pacific Northwest. The interest in learning how to garden and improve gardening technique is evident by the questions asked in the workshops, which varied from basic beginning gardening techniques to more advanced questions on crop rotation, soil amendments and harvesting. The *Seed to Supper* participants are eager to develop greater skills leading to greater self-reliance and self-sufficiency. The FIX-IT Fair is a successful venue for providing *Seed to Supper* program's gardening knowledge to an eager audience.

Participant Profile: Self-Reliance

David, an active volunteer at the Riverside Court discussed how important the *Seed to Supper* program has been in his life. He shared his feelings of self-sufficiency, satisfaction, comfort and security. He has gained satisfaction from assisting the program by harvesting and delivering produce on a daily basis to the

scratch kitchen at Riverside court. Interestingly, David was a member of the Future

Farmers of America as a young person, and has gardened all this life. He felt giving

back to his community enhanced his experience as a garden volunteer and provided

him a leadership role. This involvement brought greater meaning and comfort to

his life. His sense of self-reliance impacted his community through his on-going

volunteerism to impact access to local foods.

The survey results, interviews and field observations lead me to conclude

that a majority of *Seed to Supper* participants gain more confidence, knowledge and

independence through participation in learning garden programs.

Social Capital

The last aspect of question four focuses on social capital. One definition of

social capital is "the value of social networks, bonding similar people and bridging

between diverse people, with norms of reciprocity" (Dekker & Uslaner, 2001, p. 2).

Social capital is an important concept related to the success of community food

security projects. The national Community Food Security coalition sees social

capital as integral and "seeks to engage community residents in all phases of project

planning, implementation, and evaluation" (n.d. para # 6). The empowerment

needed to motivate individuals to take on leadership roles within their

communities, can lead to not only social capital, but also food democracy and food

justice. Mobilizing people in food insecure communities to take action and make

change is a main motivator for the site coordinators and policy officials supporting

programs like the *Seed to Supper.* Based on the survey, interviews results, as well as

134

my observations, I conclude the learning gardens provided opportunities for building social capital, which is closely related to community building. The following section briefly discusses several communities that have improved food security through building pathways to greater social capital and providing opportunities for citizen involvement in food justice issues.

Perspective of an Engaged Community Food System

The concept of social capital is important this study's effort to identify factors that lead to engaged community food systems. One community that has achieved greater food security is Brookplace. The community learning garden has become central to its engaged-community food system that uses multiple partnerships to provide opportunities to share and learn about food security. The economic benefits to the community have been numerous. There are more raised garden beds, a mature blueberry patch provides fresh blueberries and the future goal/dream is to develop and plant a community fruit tree orchard. This past summer a Portland State University senior capstone class worked with community members to build a composting system for the learning gardens and in the fall Brookplace held their first community Health Fair—described in Chapter One's Learning Garden Scene 1. The community services coordinator has obtained numerous county and city grants to help the learning garden expand its infrastructure and its educational programs.

The social capital generated around the Brookplace learning garden is evident and on a summer day—it is pleasant to visit the gardens, talk with

gardeners, share stories and, if lucky, a community potluck is taking place. For

many members, having these opportunities to eat healthy foods, in close proximity

to their home is critical due to transportation issues, economic hardship, health

issues and comfort levels. Attending events in their garden is similar to spending a

day at one of Portland's farmer's markets. The economic goals are certainly

different—but the social capital gained is similar. The smiling faces, children

playing and shared community experience brings greater food security with the

added value of some of the trappings of economic advantage.

Several community leaders and educators referred to the goodwill that is

fostered by learning garden programs, and asserted that this type of community

building may be more important than the garden skill building. One prominent

community garden leader, involved in Portland's community garden programs since

the 1970s, stated that she focused on building democracy and citizen involvement

through community gardens. Regardless of the terminology used, city officials, state

and federal government leaders increasingly recognize the social capital benefits of

community garden programs.

Site Profile: Lakeview Correctional Facility Learning Garden Project

Once the learning garden at Lakeview Correctional facility took root, the

volunteer *Seed to Supper* instructors described how effective the program became in

impacting access to fresh and locally grown foods for the incarcerated participants.

The garden has doubled in size and the on-site kitchen has incorporated the fruits

and vegetables into the meal plans. After a convincing demonstration of how the

garden impacted the incarcerated participants, the kitchen staff embraced the learning garden program and suggested they help write a "Healthy Foods" grant to build a greenhouse to expand the capacity of the garden. Building on success, a partnership between facility staff, volunteer instructors and the participants' work collaboratively in a unique setting where social capital improved as a result. The Lakeview Correctional Facility is also a Portland State University Capstone site for the class entitled: "Women's prisons and Organic Gardening" providing another opportunity for a partnership to improve access to locally grown foods.

Conclusion

This study has examined whether learning garden programs such as the *Seed to Supper* Program increase access to locally grown food and successfully include and empower food insecure people and their communities.

The Oregon Food Bank's focus on the learning gardens and advocacy has helped food insecure citizens' access food security by gaining critical knowledge by improving food literacy, which creates opportunity for empowerment (self-reliance) and economic advantage (social capital). These pathways to greater food security often led to greater food democracy (citizen involvement) and created increased social capital. Once these patterns were established in the communities included in this study, the external and internal partnerships also provided leadership opportunities for capable members of the communities. The final chapter discusses the implications of the findings presented here.

Chapter 5: Discussion, Implications for Practice & Conclusion

Learning Garden Scene 5: Community-Based Learning and Food Democracy

On the final day of the Portland State University (PSU) Capstone class, "Food, Democracy, and Sustainability," the residents of Brookplace prepared a celebration meal for the students of the capstone. I arrived at Brookplace for the celebration to the smell of BBQ turkey burgers and to a table of salads, condiments, fruit and beverages. Everyone was excited about the new composters built by the students over the eight-week period. The celebration took place next the garden beds and they were beautiful with flowering vegetables, vining tomatoes, corn, and herbs everywhere. We took group photos and I had a hard time fitting the whole group into the frame: there were over 30 people, gardeners, students, grounds staff, the on-site coordinator, and visitors.

Using community-based learning principles, the capstone course connected Portland State University students with the local residents to complete projects for Brookplace and Forest Hills. The students studied literature about sustainable community food systems, food justice and food democracy. Their assignments were rigorous and included content about the process and the science of building composters, as well as the literature describing food justice.

The PSU course objectives addressed food democracy and food justice within the context of building a local partnership between the PSU students and the residents and *Seed to Supper* participants at Brookplace and Forest Hills. Forest Hills wanted educational signage (plant identification) for their learning garden,

138

which includes a children's garden, a greenhouse, fruit trees integrated throughout the plot, and a community composting area. As the partnership unfolded, the composting systems and signage were designed and built by the PSU students with the oversight, input and participation of the community members. This community-based learning setting sets the scene for chapter 5 and a discussion of the impact of the *Seed to Supper* program on food insecure populations through community building and partnerships.

Chapter five focuses on the successes of the *Seed to Supper* program and the implications for best practices that emerged from this study. This discussion builds on the results of Chapter 4 by further exploring the findings about the impact of learning garden programs on food insecure people and on their access to locally grown foods.   Furthermore, this discussion describes the implications for empowering food insecure populations through active citizenship and pathways to food democracy and food justice.

To begin, I explore the *Seed to Supper* program's external and internal partnerships by using a concept known as the "web of inclusion" (Helgesen, 1990; 1995). Building on this concept, I discuss the role of community-based partnerships and the integration of sustainable leadership in the web of inclusion (Helgesen, 1990; 1995). Several of the research sites included in this study manifest organizational and social behavior patterns associated with the web of inclusion. As I discovered, many of the program outcomes can be attributed to these patterns.

In this chapter, I also posit implications and best practices in the following three areas:

1) Programmatic methods for sustainability and garden educators;

2) Barriers and policy recommendations for community leaders and the public service sector; and

3) Suggestions for fostering citizenship and creating pathways to food democracy and food justice.

In concluding, I focus on the impact of community-based learning in educational research settings, and describe the benefits gained by the academy when it engages with external community organizations and partners with food insecure communities. Lastly, I reflect on the significance of the study for me personally and next steps for further research.

Web of Inclusion, Integrated Partnerships and Sustainable Leadership

The lack of food security has developed over many decades of economic and agricultural policies that have created a global (large-scale and centralized) food system that has disrupted local and sustainable community food systems. Large-scaled food systems have created barriers for access to locally grown and culturally appropriate foods for many populations (Poppendieck, 1998; Winne, 2008). Contrary to today's large-scale, globalized, corporate food systems and to what many conservative policymakers purport, the findings of this study indicate that local sustainable food security is achievable when certain key practices are employed. In the following section, I introduce the central concept

of the "Web of Inclusion," (Helgesen, 1990) which helps explain how integrated partnerships and sustainable, "social system networks" (Senge, 1990) promote local, sustainable, community food security.

The findings of this study showed that the learning garden sites utilized a network of partnerships that exemplified whole system designs and systems thinking principles (Mollison, 1988; Senge, 1990). Borrup (2006), Flores (2006) and Goldbard (2006) write about community development in various disciplines and help define "community" and "community development" or "community building" (the term used for this paper) as creating culture within the definition of a geographical space; a place defined by its boundaries. The work of organizers and community members collaborating to express, build and expand cultural social change can be defined as "development" (Goldbard, 2006). Closely related to this definition of community development and building is the concept of ecological design processes or "permaculture" (Mollison, 1988; Hemenway, 2009; Flores, 2006; Holmgren, 2002). Flores states, "using ecological design processes to organize community projects bring the ecological ethics" (p. 218) that are embraced through community building in the garden, [and] by "developing a detailed action plan helps ensure smooth implementation" (p. 218). By using ecological design practices such as goal setting, observation, recognition of boundaries (or edge), identifying resources, analysis, design, sector analysis, and evaluation (feedback loops) organizers can foster successful activities for food insecure communities.

The learning garden sites in this study also mimicked what Helgesen (1995) has defined as the "web of inclusion." Helgesen (1995) has identified an organizational style that integrates nurtured relationships, open lines of communication and less hierarchical ranking. She discovered that "women tended to put themselves at the center of their organization rather than at the top" (p. 10). This deliberate circular pattern of communicating and inclusion in the decision-making process fostered nurturing environments that lend themselves to more interconnected systems (Helgesen, 1990). Helgesen cites Capra's theory of "an interconnected web" with endless connections and mutually reliant factions that are related to our universe, affirming the value and importance of every fragment. These concepts of connectedness support the goals and precepts of sustainability education; many of these patterns of connectedness were identified in the research sites for this study.

In addition to the web of inclusion communication model, Gaylie (2009) found that the learning garden was often a place of transformation. She means this both metaphorically for the individuals working in them, and physically, as gardens are transformed "from junk piles to organic garden[s]" (p. 99). When the web of inclusion model was present in the *Seed to Supper* learning garden communities, opportunities for transformational change led to successful gardening and often more leadership opportunities. These opportunities for transformation and sustainable leadership roles provided more human resources, volunteerism, and

142

stronger communication linkages and provided avenues for self-reliance and

responsibility within the learning garden communities examined in this study.

Figure 20 illustrates the internal web-like community networks used at

Brookplace, as opposed to the top-down hierarchical structures typically found in

many organizations and communities (Senge, 1990). Smith, (2001) states that

Senge's theory focuses on the decentralization of leadership in organizations.

Decentralizing leadership roles enhances the capacity of all people to work together

towards common goals. The figure below illustrates how this "web" or

"decentralization" works within the context of the learning garden community sites.

Figure 20. Web of Inclusion At Brookplace
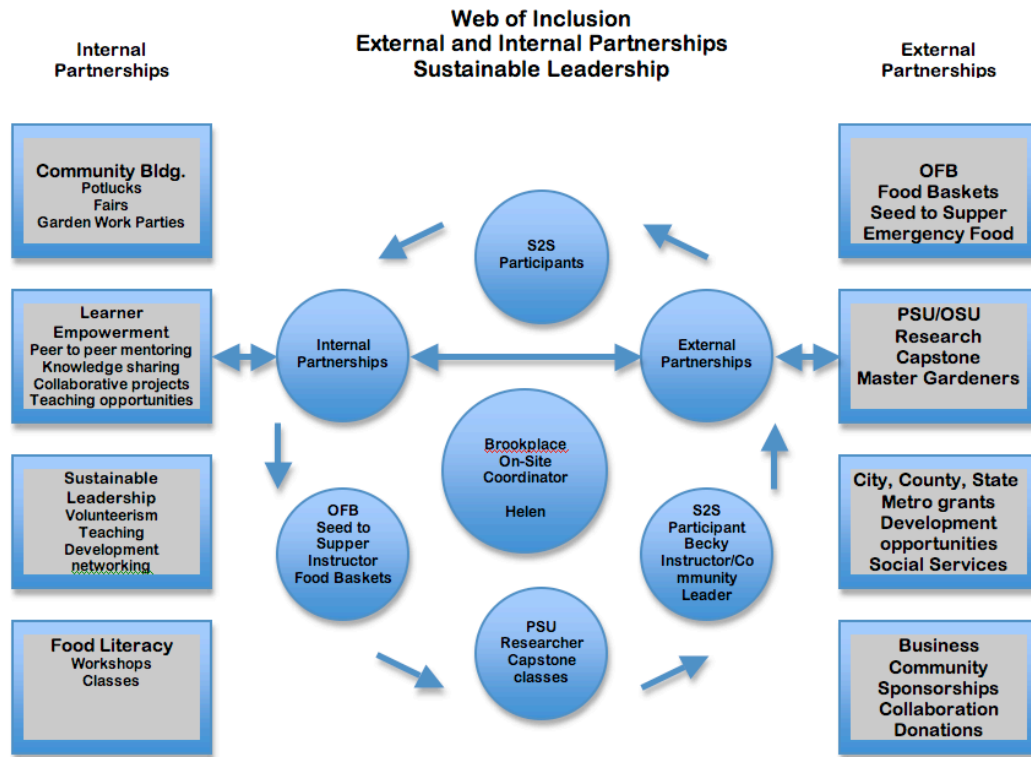
In figure 20, the web in the center shows the site interrelationships with the internal and external partnerships on either side of the web. The internal partnerships correspond to the main patterns that appear in the study's findings: community building, learner empowerment, sustainable leadership and food literacy. The external partnerships illustrate resources and services available to the site from outside sources. The interactions among all of these interrelated systems create the web of inclusion identified in this study that contributes to increased food literacy, self-reliance and social capital. Additionally, the web of inclusion sets the scene for engagement in food democracy and participatory citizenship.

Gaylie (2009) maintains that learning gardens provide opportunities for democratic processes. Similarly, the web of inclusion allows for these democratic processes and can be compared to Capra's web of life theory, which focuses on interconnectedness and ecosystems (Capra, 2002). In Helgesen's (1990) study, she found "ecological" leadership patterns in the women leaders and their organizations. Helgesen (1995) describes "ecological" leadership as having a concern for the group or the whole, thus the visualization of a web with the orb and radial lines creating more connection points. These points created a stronger bond for the group (or community) and encouraged a sense of inclusion (p. 49) that increased the likelihood of democratic participation.

Helgesen (1995) states that the web of inclusion is a perfect metaphor of how science affirms an explanation for our universe. She notes, "identity is inseparable from relationship" (Helgesen, p. 10). This dynamic connection and example of whole systems design was evident in many of the *Seed to Supper* learning gardens I examined. Most often one individual placed themselves at the center of the community. This individual had expertise and authority, but they also listened, facilitated and involved all members of the community in the process of building and managing the gardens. This behavior encouraged and fostered community building and sustainable leadership in the learning garden communities.

The concept of sustainable leadership is also consistent with Helgesen's web of inclusion theory. The patterns Helgesen (1990) identified in her early study were similar to sustainable leadership traits identified by Ferdig (2007) and Heifetz and

145

Laurie (1997). These traits included helping others develop voice, access, open communication and networking as well as encouraging and providing opportunities to develop and practice leadership skills. And, as Ferdig (2007) writes, when leaders "lead 'with' rather 'over' others in ways that account for the long-term viability of complex, interconnected systems" (p. 25). These patterns of inclusion, collaboration and networking led to community systems that supported local, sustainable community food security as demonstrated at many of the *Seed to Supper* sites.

The following internal and external partnerships shown in Figures 21 & 22 illustrate the range of partnerships operating at Brookplace and Forest Hills.

Figure 21. Integrated Partnerships: Brookplace
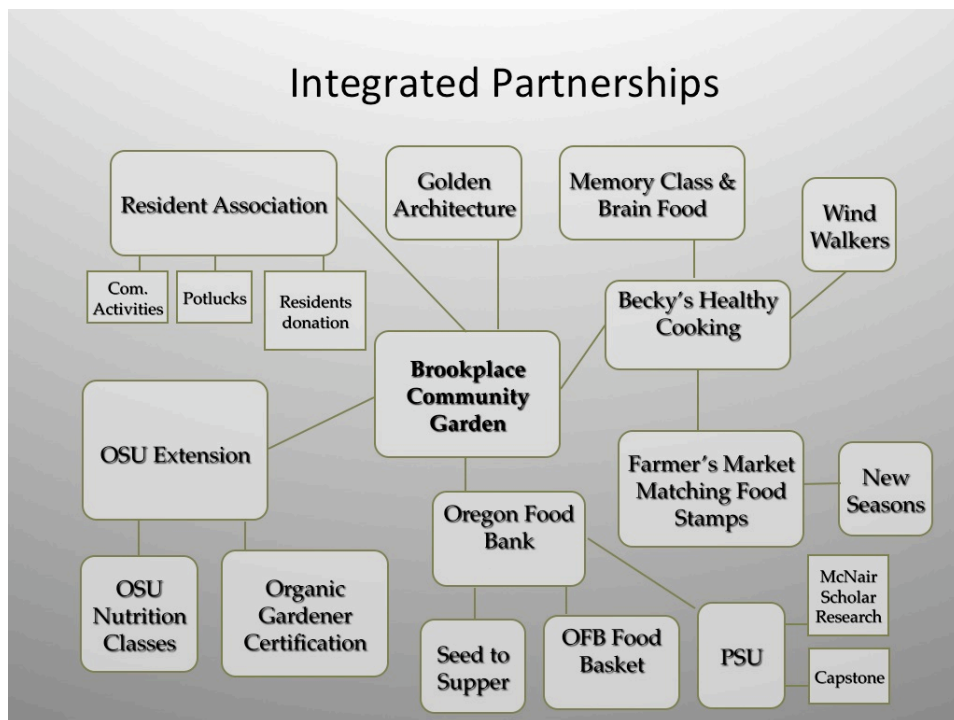
Figure 22. Integrated Partnerships: Forest Hills
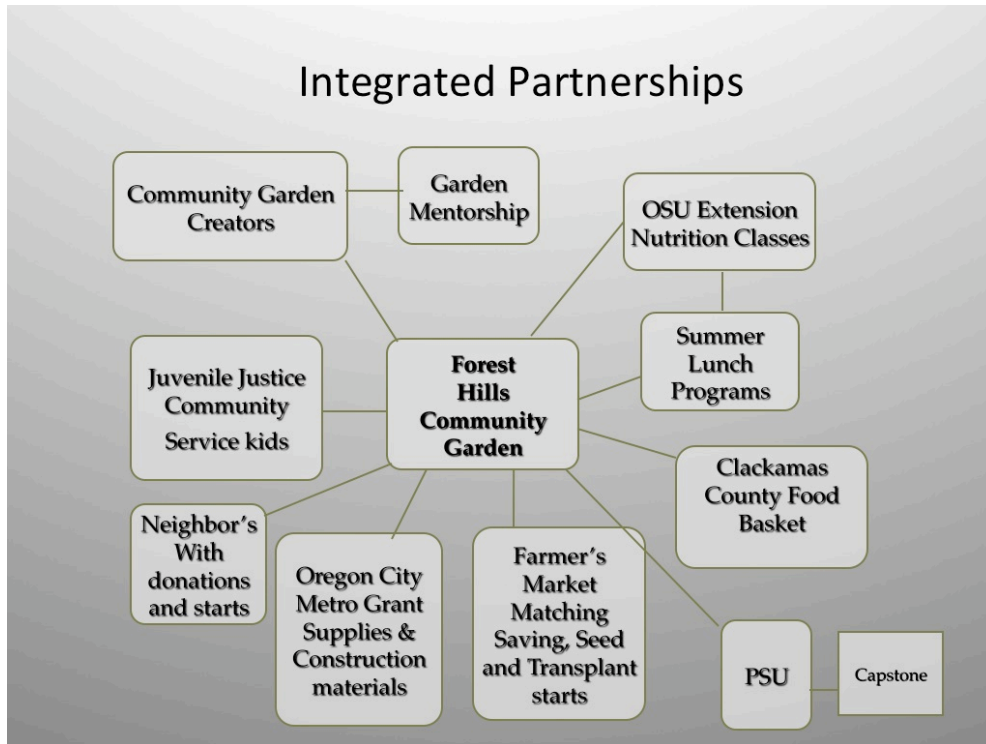
Helen, the on-site coordinator for both sites, with the help of a few key Seed

to Supper participants and other community residents, coordinated the

partnerships in Figure 21 and 22. These partnerships represent the integration of

internal and external services contributing to the community food security of both

these communities. The numbers and strength of these connections bring greater

social capital to the gardeners and residents, thereby resulting in increased access

to locally grown foods as well as empowerment for community members. This

study points to the importance of integrated partnerships as essential tools for

building local, sustainable community food systems.

The following section builds on the strengths of the webs and networks and

introduces the implications and best practices that emerged from this study. It also

includes recommendations to consider for long-term impacts on food insecurity,

and lastly, suggestions for fostering citizenship through community activism and

participation.

Implications, Best Practices and Policy Change

The main implications from this study are presented in the following order:

1) Programmatic best practices for sustainability and garden educators;

2) Barriers and policy recommendations for community leaders and the public

service sector; and

3) Suggestions for fostering citizenship and creating pathways to food

democracy and food justice through community activism and citizen

participation.

This study found that these three areas are important to developing local,

sustainable community food security.

The following best practices, recommendations and policy suggestions are

based on interviews, surveys and on my observations, as well as my coursework in

the Leadership for Sustainability Education program. And finally, some of the

recommended practices reflect my own experiences as a community organizer and

non-profit manager over the years. In most instances, I note the source of the

recommendation/best practice.

1) Programmatic Best Practices for Educators, including Site Coordinators and Community Activists

Community Building

Based on the findings from this study, a stronger sense of community developed when learning garden educators and site coordinators built integrated internal partnerships into learning garden program practices. Hinrichs (2007) states, "the issue of social inclusion in food system practice[s]… involving diverse stakeholders and participants can ensure multiple viewpoints and solidify the democratic foundations of practice" (p. 9). As Hinrichs' stated, the practice of inclusion in community building created opportunities for all participants or "stakeholders." Community building is therefore key to developing democratic food systems.

Best Practices for Community Building through Internal Partnerships

The following best practices stood out as important to community building. These best practices are divided into several categories: experiential learning, learner empowerment and food literacy.

Experiential Learning: Recommendations

Educators define experiential learning as a process where learners construct knowledge, skills and value from direct experiences (Subramaniam, 2002; Gaylie, 2009). Often situated both indoors and outdoors several of the *Seed to supper* sites combined hands-on learning with classroom discussion centered around a powerpoint presentation. Participants commented that hands-on participation proved most useful for their learning needs.

a. Practice garden-based learning through hands-on learning techniques and experiential learning methods such as starting a class in the garden with a demonstration, then moving into the classroom setting. (As practiced at Riverside court.)

b. Organize garden work parties to encourage and build personal relationships in the garden. (Most of the *Seed to Supper* sites practiced work parties.)

c. Promote garden clubs as a way to contribute to an engaged educational community.

d. Develop a cookbook of participants' recipes and a recipe-sharing program. (Many small communities develop cookbooks for fundraising and community building. My experience with this took place in Sisters, Oregon during the 1980s.)

e. Organize special events to celebrate community within the garden space. Organize food sharing through coordination of the following activities: potlucks, eating locally grown food from the garden, harvest events and contests, such as baking, specialty foods, and making seasonal recipes, (i.e. pickling or preserving foods).

In addition to experiential learning methods, best practices for community building through internal partnership include developing learner empowerment and food literacy. Many of the *Seed to Supper* site coordinators and instructors used these practices to plan and implement garden programming in place-based settings. *Seed to Supper p*articipants shared stories about their improved self-reliance and

confidence from their experiences in the workshops and classes. They also felt

empowered by their increased food literacy and they wanted to share their

knowledge with others by teaching and facilitating community food security.

Learner empowerment led to sustainable leadership practices, increased resiliency,

volunteerism and community relatedness.

Many of the following practices in the *Seed to Supper* program, are

suggestions and recommendations from the participants, instructors, on-site

coordinators and community leaders. The following best practices focus on

planning and developing curriculum and community activities to enhance learner

empowerment and food literacy.

Learner Empowerment and Food Literacy in the Garden Education

Curriculum: Recommendations

The *Seed to Supper program* teaches food literacy through garden-based hands-

on learning that leads to greater learner empowerment. These practices enhance

learner involvement and participation.

a. Teach garden-based learning by including hands-on experiences combined

with classroom discussion and visual materials, including hand-outs and

PowerPoint presentations. This is a standard practice for *Seed to Supper*

classes and workshops. Learners benefited from visual aids and discussions

about the garden-based lesson plans, combined with hands-on learning.

b. Consider beginning classes with a meal or garden snack. Growing and eating food from the garden may enhance confidence and create a stronger relationship to foods and greater food literacy.

c. Teach complex gardening skills such as composting, vermiculture, permaculture, organic gardening, sustainable gardening practices, planting from seed, harvesting seeds. Teach no-plow methods and lasagna gardening or sheet mulching for seniors to lessen weeding and bending over. These practices enhance practical knowledge and help to build confidence.

d. Build peer-to-peer teaching and learning into curriculum activities for empowering learners to demonstrate new knowledge and pre-existing knowledge.

e. Incorporate feedback loops through evaluation processes including surveys, interviews and other assessments tools for all activities. These kinds of feedback loops contribute to the knowledge base for curriculum development and teacher training.

Instructor training for Enhancing Learner Empowerment: Recommendations

In addition to teaching methods, communication and leadership practices were found to contribute to the successes of the *Seed to Supper* program. The practices listed below can enhance teacher in-service training by building stronger communication and sustainability leadership models that lead to greater learner empowerment and participation.

a. Design instructor training in relationship to populations. *Seed to Supper* has a diversity-training model that introduces instructors to tolerance and open communication models for teaching. These models reflect some of the indicators found in the web of inclusion.

b. Encourage responsive teaching methods through teacher training activities that model adaptive teaching practices. These responsive teaching methods include adapting the lesson plan to the specific learning situation.

c. Encourage use of the motto: right plant, right place and adapt right instructor or mentor to right place… pair up through careful selection and pairing up with communities using assessment tools, inventories, interviews and pre-site visits. This can be encouraged in trainings for instructors and site coordinators as well. The *Seed to Supper* instructors self-select to teach at sites they are interested in, a practice that ensures interest and motivation for success.

d. Practice and teach step-back, step-up methods allowing others to have an opportunity to demonstrate knowledge, leadership and change.

Many of the teaching practices suggested here prepare garden-based instructors for empowering and fostering learner empowerment for adult learners. Ferdig (2007) states that leaders who practiced sustainable leadership models often created environments that led people/participants to generate and explore their own answers to challenges faced. "Instead of giving directions, sustainability leaders develop and implement actions in collaboration with others, ….[by

integrating a] framework that provides clear accountability, and enough flexibility." [This] fueled new thinking and innovations" (Ferdig, 2007, p. 32). Ferdig's description is consistent with the following best practices found in the web of inclusion organizational model at the *Seed to Supper* sites.

All of these recommendations focus on *internal* partnerships for encouraging community building through experiential learning, learner empowerment and food literacy. Now, we turn to *external* partnerships.

Best Practices for Community Building through External Partnerships

As important as internal partnerships are, external partnerships can profoundly impact learning garden programs by building resources and opportunities for participants. Garden educators and site coordinators can develop external partnerships to increase access to resources and to create opportunities to support, encourage and foster access to food. Through celebrating, sharing and building community, the following best practices build on external partnerships by employing networking and community development practices, mentorship for sustainable leadership practices and community education and community celebration.

Networking and Community Development: Recommendations

Building networks and relationships contributes to community building that is consistent with the concept of the "web of inclusion" (Helgesen, 1995). This inclusion of community players created a network of relationships as illustrated in Figure 20. In the learning garden programs, these external partnerships also

154

contributed to increased access to locally grown foods as well as opportunity for

mentoring leadership. The following recommendations are for educators, including

site coordinators and community activists for enhancing external partnerships.

a. Develop community resources through networking with local, state and

federal agencies, groups, collectives, state extension services, etc.

b. Use development tools such as grant writing, fundraising and

community/business sponsorships and in-kind donations.

c. Delegate development activities to internal players, (i.e., key participants in

the learning garden programs that show an interest in developing an idea

such as a class or fieldtrips). Brookplace has an example of this practice.

d. Develop local resources: soil, supplies, seeds, capital improvements,

land/space, containers, plants, and produce. All the *Seed to Supper* sites

developed additional resources through partnerships with the business

community and with local government grants.

External partnerships through these practices are critical for building

community development opportunities for food insecure communities. Involving

participants in these development practices provides additional learner

empowerment. The following section focuses on mentorship as it relates to

development and leadership opportunities.

Mentorship for Sustainable Leadership: Recommendations

Mentorship provides opportunity for sustainable leadership—these

mentoring opportunities build on existing skills and knowledge within food

155

insecure populations. Successful community building relies on the all the integrated

partnerships recommended in the preceding section. To order to ensure successful

mentorship there are many aspects of sustainable leadership to consider.   Knowles,

a humanist educator, has written that adult learners are self-directed and often,

independent learners (Elias & Merriam, 2005). With this in mind these

recommendations to community organizers, instructors and coordinators and are

offered in the spirit of developing learner empowerment through sustainable

leadership and mentoring.

a. Delegate organizational tasks to key community participants. This practice

   took place at all of the *Seed to Supper* sites.

b. Utilize Master Gardeners for mentoring to build expertise and develop

   gardening mentors within the community. This idea was suggested by most

   the participants, all of the *Seed to Supper* instructors and the community

   leaders.

c. Create an "adopt–a-community garden mentor program" where garden

   instructors teach in the community and return throughout a season to

   provide continued support in a mentoring capacity.

   In addition to mentoring, it was important to encourage sustainable

leadership development as well as skills for garden-based learning. The following

best practices help to build a receptive environment for sustainable leadership.

Sustainable leadership practices ensure the inclusion of food insecure populations

and lead to strong community development and buy-in from community members.

Mentoring sets the stage for next set of recommendations for practicing sustainable leadership.

Best Practices for Encouraging Sustainable Leadership

a. Build human resources from within community through volunteerism and leadership roles. Brookplace used this model for gardening events.

b. Create opportunities for volunteerism, i.e. harvesting, watering, grant writing, teaching, skills building, mentoring and other creative activities.

c. Foster open forms of communication in classes and for community organizing --practice active listening.

d. Encourage trust, commitment, and responsibility.

e. Promote TEK (Traditional Ecological Knowledge) (Nelson, 2008). Many forms of TEK exist in the communities studied—at Brookplace this was demonstrated through the diversity of plantings, and planting designs found in the gardens.

f. Create safe places for learning and community building.

g. Reward and practice gratitude and appreciation.

h. Practice adaptive management practices (Senge, 1990). This is a simple suggestion, which implies flexibility and a receptive attitude when resolving unexpected events and situations.

i. Practice tolerance. The *Seed to Supper* program encourages cultural diversity and inclusivity. This can be challenging for some sites, and diversity training for instructors is helpful.

j. Build reflection into all activities through discussion, journaling and other forms of reflection.

When these practices were applied at the *Seed to Supper* sites, they led to greater local, sustainable community food security as evidenced at Brookplace and Riverside Court. In the guidelines of the Community Food Security Coalition, 2012 they assert that: "Community food security projects seek to engage community residents in all phases of project planning, implementation, and evaluation" (2012). This study found that when community members became active leaders in learning garden activities, their *food literacy* increased, *self-reliance* improved and the community as a whole gained *social capital*.

Community Education

This section continues recommendations for building external partnerships and focuses on the role of community education and celebration of community. All of the *Seed to Supper* sites in this study encouraged community education to build skills and opportunities to share leadership roles—often taught by outside teachers, including *Seed to Supper* instructors. Flores (2006) and Goldbard (2006) have both written about the impact of bringing teachers, artists and community organizers into community setting to develop cultural activities. In this study, the site coordinators and instructors would engage garden educators into communities to increase gardening skills and knowledge. These educational activities contributed to a greater sense of community and learning for people within the scope of place. Community education becomes enriching for individuals as well as for the

community (Flores, 2006; Goldbard, 2006). The following recommendations foster

educational opportunities for garden-based learning programs for food insecure

communities. Many of the *Seed to Supper* sites practiced these recommendations.

a. Promote educational opportunities such as garden classes by bringing

   outside expertise into the community through continuing skills development.

b. Promote educational workshops to provide inspiration and community

   morale.

c. Collaborate with other educational institutions such as university capstone

   courses to build collaborative partnerships integrating different levels of

   partners.

(a. through c. were practiced at all of the *Seed to Supper* sites.)

Networking and community building, mentorship and community education

practices all led to engaged *Seed to Supper* communities – the participants valued

learning through networking with external partners and mentorship contributed to

the morale. The last section which focuses on building external partnerships looks

at the role of community events and how celebration helps facilitate the goals of

garden-based learning by building community through a web of inclusion.

Community Events

Building community through partnerships was also a common thread at each

of the *Seed to Supper* sites.   Community building through celebration, sharing and

organizing has been identified in numerous disciplines as an effective way to create

social capital (Goldbard, 2006; Borrup, 2006). Borrup (2006) has written a guide

for community organizers advocating for the building of and transformation of community through local assets including the arts and culture.   As a member of the "Partners for Livable Communities," his guidebook focuses on celebratory events to build stronger social fiber to community setting. The following recommendations reflect many of Goldbard's and Borrup's ideas for celebrating community.

The following community building activities are examples of celebratory events found in the *Seed to Supper* sites for bring community partners together to share networking efforts:

a. Health Fairs: Bring in outside expertise to share healthy community practices, and creates access to outside resources and knowledge.

b. Food Fairs: Provide an opportunity for sharing the wealth and surplus within the community.

c. Farmer's/Gardener's markets, provide economic opportunity and exchange or bartering opportunities for small neighborhoods. In Portland, the Cully neighborhood has started a farmer's market in a food desert region and is the appropriate scale for the neighborhood it serves.

d. Fix-it Fairs: Informational fairs are organized for easier access to knowledge. These kinds of fairs are empowering for do-it-yourself populations as well as encourage community projects. This fair helps to build self-reliance and community viability. The "Fix-It Fair" is organized and presented by the City of Portland Bureau of Planning and Sustainability and is in its 26th year of

serving Portland neighborhoods. The *Seed to Supper* program has offered gardening workshops at the Fix It Fairs for many years.

These celebratory practices and recommendations for community building were found at most of the *Seed to Supper* sites, and in other learning garden programs as well. Combining educational community events with celebration activities demonstrated the integrated partnerships demonstrated at the sites created a community forum to share food literacy, learner empowerment and the benefits of community building.

This section ends the discussion about best practices using internal and external partnerships. The next section continues to examine programmatic best practices for learning garden curriculum development. It does so by using place-based and whole systems design practices building on the previous section on partnerships and the leadership aspects of the web of inclusion.

1) Programmatic Best Practices for Educators, including Site Coordinators and Community Activists for Garden-based Program and Curriculum Design

Place-based learning

Place-based learning practices and approaches offer learning in the context of where people live. In addition, these practices have the potential to increase access to locally grown food within the context of place for food insecure populations. Williams & Brown (2012), using Gruenewald's definition of place-based learning (2003), explain that: "place includes not only the physical landscape and ecology where students live, but also the cultural and socioeconomic

161

communities that live within that landscape" (p. 64). It is in this context that the

Seed to Supper curriculum serves food insecure populations because the classes take

place in the communities where participants live and interact with garden

education. Thus, *Seed to Supper* instructors can respond to the immediate concerns

of learners.

The findings of this study also indicated a solutions-based approach to access

local foods through community building, learner empowerment, sustainability

leadership and food literacy within the context of place-based learning. This

approach blends place-based practices and experiential learning and considers

human relationships. Sobel (2004) writes "the history, folk culture, social problems,

economic, and aesthetics of the community and its environment are all on the

agenda" (p. 9). Sobel considers the preceding cultural elements as essential

considerations for place-based learning. Sobel (2004) promotes a creative and

responsive learning environment. To further augment the discussion, Knapp (2005)

describes the important elements found in place-based curriculum as including the

surroundings as the foundation for curriculum development with an emphasis on

learners helping to create knowledge (as opposed to being consumers of

knowledge). Learners' questions and concerns play a central role in what is studied

and teachers participate as co-learners to help develop community resources and

possibilities (Knapp, 2005). Additionally, Woodhouse and Knapp (2000) identified

the place-based curriculum content as multidisciplinary, integrating self, other, and

place and including ecological, economic, multigenerational and multicultural

aspects. The following are best practices for curriculum development using whole

systems design. As described by Knapp (2005), the following steps integrate place-

based learning methodologies through observation of the learning communities.

Recommendations for implementation

Steps one through three use whole systems design strategies for best

practices in developing curriculum and program designs for garden-based

education. These design practices are based on my observations of the *Seed to*

Supper program. Sustainable practices in designing educational programming

within the context of place-based learning and experiential learning practices

encompass whole design thinking and ecological design. Edwards (2005) has

asserted that the "integration of sustainability and community requires a systems

perspective focused on relationships among numerous stakeholders" (p. 29). When

designing curricula, consider the following sustainability and solutions-based

practices.

Step 1) First, practice observation to develop a solutions-based response.

Listen to what learners say about the needs of their community. Here are a few

questions to ask: What knowledge is pre-existing in the community that can be

incorporated into the learning process? How can programs encourage exchange of

knowledge and foster intergenerational and cultural diversity? The following

recommendations foster observations and a solutions-based to response to

curriculum design.

a. Ask questions about the existing knowledge base, to build a foundation for curriculum development based on learner's needs.

b. Create opportunities for shared learning through open communications, public gathering in central locations.

c. Provide alternatives for place-based issues or needs. For example, if there is no space to garden – teach container gardening or access public gardens willing to contribute space or produce.

d. Overcome language barriers by providing language interpreters, creating signage for space, and providing resource materials in languages spoken. Brookplace is an example of how language barriers could be addressed. The capstone class provided composting instructions in both Russian and English languages.

Step 2) Create a vision and identify needs for the communities/populations. Cultural relevancy and interactions within the community will help promote place-based solutions for curriculum and program activities. Consider the strengths and weaknesses of the community's learning needs. Identify these needs within the context of urban vs. rural or suburban settings. Other things to consider are: the type of community, (i.e. community center vs. a housing complex) and the special circumstances involved in these settings. These recommendations contribute to whole systems design for garden-based curriculum and programmatic planning.

a. Create assessment tools, surveys, and questionnaires to evaluate needs, curriculum and feedback on existing programming or future programming.

b. Develop tools using what is located on the site or in the community, for example fences for trellising plants, balconies exposed to sun for container gardening, raised beds for physical disabilities or the needs of depleted soils.

c. Ask what the location/place offers in terms of existing resources, it may be as simple as lots of sunshine, or a large community building. (Similar to b., but more generalized.)

d. Discover what limitations can be turned into opportunities.

e. Develop strategies to overcome perceived limitations, (i.e., lack of running water to a garden site, lack of a classroom space, or low funds or resources).

Step 3) Using whole systems design practices described in steps 1 & 2, build a curriculum from the observation/visioning process. This process will build the content for learning curricula and learning activities based on the needs of the learning environment. Step 3 develops a curriculum using the existing community culture. Garden-based education can focus on food histories and food production capabilities, such as food preservation and other techniques, guerilla gardening, harvesting, subsistence farming, cottage industries, engineering, etc. Brookplace had a wealth of expertise and many participants had designed unique gardens using materials found in their community. The following recommendations are practices to consider when developing curriculum for garden-based programming within a place-based approach.

a. Access pre-existing knowledge by encouraging interaction among community members. All the *Seed to Supper* sites practiced and encouraged

interaction among community members. Often these activities happened in

the garden or in communal areas of the housing projects and community

centers.

b. Create assessment of community members--this could be organized as a

   speaker's bureau.

c. Create teaching opportunities for participants. Brookplace had the best

   opportunities for participants' to teach.

d. Allow for information exchanges and build on preexisting garden knowledge

   and practices, this is related to a. & b. but focuses specifically on gardening

   skills.

e. Design curriculum options for the population's capacity, i.e. children, adults,

   language barriers, physical and mental barriers.

f. Design for indoor/outdoor learning within the context of place.

g. Consider the time constraints of participants when designing activities.

h. Consider long-term impact on community, i.e. maintenance, upkeep,

   harvesting, seasonal needs and impact on program. Plan for seasonal, year-

   to-year programming at the same location—consider phases for curriculum

   topics. For instance, in year-one, teach garden planning, year-two add a unit

   on cane fruits and canning, year-three add winter gardening.

These programmatic recommendations are suggestions that emerged during

the process of this study. This ends the section on programmatic best practices for

building community through integrated internal and external partnerships using

experiential learning, learner empowerment, food literacy, networking, mentorship and sustainable leadership in a place-based community approach. The next section focuses on the barriers and recommendations for policy changes to help implement and support the preceding practices through addressing the major barriers to food security.

2) Barriers and Policy Recommendations for Community Leaders and the Public Service Sector

In addition to the programmatic best practices for educators, site coordinators and community activists, the results from this study indicate the need for policy changes in local, state and federal government. Contrary to what some leading experts have said, food insecure populations value local, nutritious fruits and vegetables (Heffter, 2011). The recent "Got Green" survey found by a 2-1 margin that "healthy foods" were a priority for low-income women of color, but the "high cost of fresh and organic fruit and vegetables and the lack of grocery stores made feeding their family a healthier diet too hard" (Heffter, 2011, p. 1). Similarly, the barriers identified in this study pointed to a lack of access to fresh local foods. Additionally, processed and corporate foods are cheaper and easier to access (Winne, 2008). The barriers discussed point to the difficulty food insecure populations face in accessing locally, grown foods and each is followed by the recommendations for policy changes that can help remediate these issues. These policy recommendations are derived from the interviews with *Seed to Supper* instructors, site coordinators and community leaders as well as from my own

167

observations. Note that Portland has already adopted many of these practices, however, there is still a need to disseminate information about what is available in terms of local resources to access local foods.

Cost

This study showed the high cost of locally, grown fresh foods was the number one reason for lack of access as well as the cost for gardening inputs including soil, seeds, and soil amendments and fertilizers. Mougeot (2006) states, Municipal governments should start with the right question and ask, "What can urban agriculture do for my city (not what can my city do for it)?" (p. 62). He asserts that when we look closely at urban agriculture, many cities already support many of these types of activities. He points to composting and community gardens as examples that many cities have developed because they view it "as tool to address multiple challenges faced by the city, its environment, its economy, and its people" (p. 62). Mougeot suggests that the more "players" involved (integrated partnerships) with urban agriculture, the more robust the outcomes and longer lived these endeavors will be. He adds that this inclusive approach creates public policy that is "more comprehensible, durable and consistent" (p. 62). The following recommendations start with local change and end with federal and national changes needed to support greater access to locally grown foods for food insecure populations.

Recommendations for Policy change to Reduce the Cost Barriers –

Local (City, County and State) levels.

The cost of locally grown foods was the number one barrier according to the *Seed to Supper* survey and interview results. These recommendations are referred to policy makers as tools for change and for fostering greater food security for the communities examined in this study.

a. Create a subsidy system for local farmers in order to create affordable local foods.

b. Redirect surplus local foods to local food banks and pantries.

c. Support local farmers at the peri-urban fringe by providing greater access to urban consumers.

d. Develop greater access to gleaning programs for food insecure populations (Portland has several models for this activity).

e. Support the development of partnerships (as mentioned under community building on p. 10) to provide resources for gardening activities in food insecure communities. This could be achieved through incentives for partnerships.

f. Expand distribution networks for local foods programs through mobile farmer's markets or, as in Bend, Oregon's *Feed the Need,* a mobile refrigerated unit, which delivers surplus foods to food insecure neighborhoods. This is a sustainable practice rescuing millions pounds of food from the waste stream.

g. Place building moratoriums on fast food and unhealthy food outlets in disadvantaged areas – food deserts.

h. Promote edible landscapes through public and private education programs (Nordahl, 2009; Flores, 2006; Mougeot, 2006).

i. Expand garden-education programs such as the *Seed to Supper* and Growing Gardens programs. Growing gardens mentors families one-on-one for a full gardening season to insure access to gardening expertise and food literacy. These programs can have a direct impact on food insecure populations.

All of these recommendations for local policies can foster greater food security for all populations and set the stage for the following federal policy recommendations.

Recommendations for Policy Change to Increase Access to Fresh Foods – Federal level

The following recommendations propose a cultural food shift for policymakers that has the potential to create pathways to greater food security for local, sustainable food systems. The literature promotes these activities and recommendations with national food security as a central theme (Pollan, 2008; Winne, 2008).

a. Increase and promote awareness of, and increase incentives, for food stamp/SNAP use at local farmer's markets, fruit stands and Community Supported Agriculture.

b. Support local, state and federal economic incentives for urban agriculture reform.

c. Create large-scale local food policy on local, state, and federal level to leverage funding for urban agriculture, and education reform to support low-cost nutritious foods. The city of Portland's and Multnomah County formed a food policy council in 2002; this model has received national recognition (Nordahl, 2009; Winne, 2008).

d. Subsidize organic and local agriculture through reform of the federal farm bill legislation.

Although many of these policy recommendations are not new or original ideas, they provide pathways to greater local access to fresh foods for food insecure communities and potentially could lead to greater local, sustainable community food security. All of these recommendations were discussed in the interview process with *Seed to Supper* participants, instructors and community leaders including elected officials. The implications of this study suggest that when participants are empowered by learning garden programs, they become supporters for better public policy concerning food security. These policies support local engaged community food systems.

Garden Space as a Barrier

Access to garden space ranked second to cost as a barrier to food security in this study. This major barrier has prompted creative programmatic responses such container gardening, yard sharing and other community garden programs such as *Seed to Supper* and other programs like Growing Gardens. Because of this, developing space within food insecure communities should be a top priority for

policymakers. Gardening close to home increases access to locally grown foods.

Researcher Nordahl, (2009) advocates that "public space permeates cities, giving

them order and form, and is arguably every city's greatest, most extensive physical

resource" (p. 136). In view of the abundance of viable soils in the Willamette Valley,

this barrier should be easy to overcome. There is a need to legislate more public

lands for civic, urban and public agriculture.

Nordahl (2009) points to the "misconceptions of traditional community

gardens, because they are often regarded as the ultimate safety net for many of our

food problems" (p. 88). He critiques the idealistic claims of "self-reliance through

community gardening" and citing Winne, (community food security advocate) as

admitting that these claims for greater "self-reliance" come close to "self-righteous

pontificating" (p. 88). It is with this caution that the following recommendations for

local, and nation-wide change are put forth. Although, Portland has over 40

community gardens with support from the city for water and space – many of these

sites have waiting lists of up to five years. Additionally, the fees to participate and

the costs to maintain the sites and the transportation to access these gardens come

at a very high price to food insecure populations facing poverty and lack of basic

needs.

Riverplace Court had access to several public gardens located throughout the

Portland Metro region. This creative and proactive practice led to greater access to

locally grown foods. (See Chapter 4 for photos of the City of Portland City Hall

garden and the Multnomah County eco-roof building). The following

recommendations represent a diverse array of solutions for lack of available garden space.

Recommendations for Policy Change for Expansion of available Garden Space

a. Create adaptive land-use policy to support use of unproductive, fallow land in both urban and rural settings.

b. Create greater access to public lands for gardening purposes – civic agriculture has been extolled for its positive impact in urban settings (Nordahl, 2009).

c. Promote yard sharing through neighborhood organizations.

d. Promote polyculture practices in urban and rural farming and gardening techniques (Mollison, 1988; Hemenway, 2009; Holmgren, 2002).

e. Encourage and develop incentives for public community garden spaces for use by food insecure populations (e.g., Portland City Hall garden).

f. Create public funding for community gardens in all affordable housing projects – i.e. a program similar to the 1% for the arts program in Oregon. All state buildings have 1% set aside for art. Perhaps a 1% for local, sustainable community gardens.

g. Provide more subsidies to support families that want access to community garden plots in order to offset fees charged for the privilege to garden in a PPR community.

Many of these practices provide practical place-based solutions for the

barrier of access to garden space.   These policies and recommendations offer many

benefits to food insecure communities served by learning garden programs.

Portland has taken steps through its food policy council to map available land (*The*

Diggable City Project) for urban agriculture. Continuing this trend to support greater

food security for *Seed to Supper* populations is important for food insecure

populations. This study explored the benefits of creative land use policies and their

impact on access to locally grown foods.

Transportation

Due to a lack of transportation options and limited financial resources many

food insecure populations lack access to grocery stores, community gardens, fruit

stands and farmer's markets. Often the lack of public transportation limited access

to affordable, fresh locally-grown foods, especially among physically handicapped

and large families. This barrier had a direct impact on where people shopped for

food. Many of the following ideas and suggestions were shared in the interviews

with *Seed to Supper* participants and instructors, site coordinators and community

members.

Best practices and Recommendations for Overcoming Transportation

Barriers

Transportation is a critical barrier that needs to be overcome in order to

improve access to locally grown foods. Many of the recommendations included in

the next section have proven successful in other regions, programs and

municipalities (Winne, 2008; Nordahl, 2009).

a. Commit to and develop more affordable public transportation options. One

    example may be to develop special field trips to markets, fruit stands,

    farmer's markets using chartered buses sponsored by municipals including

    city, county and state.

b. Create mobile gardening, kitchen, and sustainable education units that bring

    services, produce and resources to food insecure communities.

c. Create more carpooling opportunities for food insecure populations. Many of

    the residents at Brookplace were using this option for various activities.

d. Subsidize transportation for food insecure populations – bus tickets to access

    farmer's markets, CSAs, and educational opportunities .

e. Create mobile food pantries utilizing a refrigerated van with capacity for a

    kitchen, and food storage. This kind of project appeals to non-governmental

    agencies, corporate sponsorship and private foundations, because of the

    visibility of mobile units.

f. Locate community garden opportunities close to people by placing them in

    their yards, in their schools, in their workplaces in order to lessen the

    dependency on transportation systems. The Learning Garden Laboratory

    located in southeast Portland is a good example of a neighborhood gardening

    "village" site that is fully integrated into the middle school program, the

    Portland Parks and Recreation program, the OSU master gardener's program

and PSU's Leadership in Sustainability program (Skinner & Chi, et. al., 2011).

By placing a comprehensive community garden education program like the

Learning Garden Laboratory into a complex integrated partnership system, it

stands to survive the whims of funding and economic hardship. Additionally

the transportation issues are eased through proximity to the middle school

and a public park.

Transportation is a major barrier for food insecure populations. With more

creative programming within local communities and neighborhoods, there are

options to improve this barrier, however, public transportation as a basic

infrastructure issue for regions is imperative for building access to fresh locally

grown foods.   Portland has taken steps to develop an equitable public transit

system – however with economic hardship we are witnessing cut backs to frequency

of services, loss of fareless regions, and fare increases for services. These budget-

reducing practices impact food insecure populations and create barriers to locally

grown foods.

Economic Hardship

Economic hardship is the main barrier contributing to food insecurity. In

order to build local, sustainable community food security community partners and

local, state and federal governments need to advocate for greater economic parity.

Oregon Food Bank has a strong advocacy program and is a national model for

fighting hunger at it root causes (Winne, 2008). Many food justice practitioners

point to the need to develop a stronger "rights-based food system" (Anderson, 2008,

p. 593).   When food banks take on advocacy and programming that helps to empower participants through rights-based programming, learning garden programs like the Seed to Supper program may indeed impact economic hardship. The findings of this study showed that learning gardens can act as a democratic space that empowers participants and helps them through community engagement and learner empowerment. The following section suggests ways to foster citizenship and create pathways to food democracy and food justice.

Citizenship: Pathways to Food Democracy and Food Justice: Implications for Activism: Action and Participation.

Activism, action, and participation in local sustainable community food systems provide opportunities to promote food democracy and food justice. As food insecure communities develop both human and capital resources through community development, and greater citizen participation, the result is often greater economic advantage. However, this economic advantage may look different from how we usually think of economic advantage. An important objective for many populations is simply having access to enough culturally appropriate foods. Hinrichs (2007) stresses the importance of food and its symbolic meaning for society at large. She states the following in "*Practice and place in remaking the food system*":

> Having both material presence and symbolic charge, food now figures prominently in struggles for power, negotiations about policy, possibilities for partnership, and new and renewed expressions of pleasure and identity.

177

Consequently, food provides a unique analytical and experiential nexus,

drawing together and crystallizing many urgent, complicated problems

facing society. No longer taken for granted or viewed in isolation food can

and should be connected to community vitality, cultural survival, economic

development, social justice, environmental quality, ecological integrity, and

human health (Hinrichs, 2007, p. 1).

Hinrichs (2007) has captured the power and importance of food to healthy

culture-making and community health. In "remaking" our food system, (I would add

to this re-discovering our food system), the following food advocates have led the

food movement to include activism and greater community participation. These

researchers, advocates and leaders have paved a path that gives all citizens a chance

to participate in the remaking of our food systems.

Shiva (2005), Sen (1999), Gottleib & Joshi (2010) and the founders of the

concept of community food security – Fisher, Winne, and Joseph, have all postulated

that the rights of people to access fresh, locally grown foods and the economic parity

to do so are paramount to food security. Perhaps, Nobel economics prize winner,

Amartya Sen (1999) offers the broadest vantage point in his book, "*Development as

Freedom*," providing us with a direction to follow. His theory places individual

freedom as central to the analysis of a globalized economy and posits a "paradigm-

shifting" approach, which considers the implications of current development

practices. Sen advocates for "the removal of major sources of unfreedom: poverty

as well as tyranny, poor economic opportunities as well as systematic social

deprivation, neglect of public facilities as well intolerance or over activity of repressive states" (p. 3). Sen (1999) questions development as an economic cure-all, stating that, "the contemporary world has denied elementary freedoms to vast numbers—perhaps even the majority-- of people… [and] relates directly to economic poverty," robbing them of the ability to satisfy hunger or to achieve adequate nutrition (p. 4). With this broad charge regarding the need to solve the current economic disparity in today's globalized economy, I suggest that we follow the many who have led the charge before us and incorporate basic components of activism and grassroots organizing into the programs that impact food insecure populations.

By using rights-based food systems that connect the local and sustainable with transparency and inclusiveness, and food as a human right (Anderson, 2008), programs such as the *Seed to Supper* are positioned to contribute to overcoming economic inequity. With concepts similar to a rights-based food system, Gottleib and Joshi (2010) postulate a "broad conceptual framework" (p. 5) for considering how food justice advocates guide policy change for our food systems. They state the importance of "the how and why and what we eat" as critical to the new concept of food justice. "Food Justice" as a concept attempts to deal with the core issues of equity, empowerment and social change in our food systems (Gottleib & Joshi, 2010). They point to the need to create "the expansion and linkage of groups and issues" that help bring about changes to our food system through more just

"political action, economic change [and] the restructuring of global, national and community pathways" (Gottleib & Joshi, 2010, p. 5).

This community and rights-based approach is related to many of the best practices discovered by this study. By employing a solutions-based activism, along with sustainability practices espoused by whole systems design along with encouraging participation through sustainability leadership models, learning garden programs may contribute to food democracy and food justice.

In the course of this study, I have discovered some of the barriers to locally grown foods and I have found that a powerful social drama plays out in the learning garden (Withers, 2010). The *Seed to Supper* sites Brookplace, Forest Hills, Riverside Court, Cascade Views and Lakeview Correctional Facility have increased community participation in their local community food systems. Each of these sites is unique in its approach and at varying points along the continuum towards attaining community food security. However there are lessons to learn from these communities. I found that many of these communities' inclusive social systems practiced community building in order to build internal and external infrastructure that supported greater food security. Sustainable leadership practices and whole systems design provided greater access to success for the learning garden programs. I also discovered that the concept of the web of inclusion can be applied to programs assisting marginalized populations because it provides a safe place for garden-based learning to foster access to locally grown foods, within place-based teaching approaches and community building solutions.

I found that learning garden programs that utilized comprehensive garden-based curricula and practices improve access to locally grown foods and include and empower food insecure communities. This study also pointed to the importance of utilizing sustainable leadership practices to encourage and support learner empowerment, and increased food literacy. Much of the success of the *Seed to Supper* program is based on experiential teaching methods combined with community building methods.   Lastly, many of these recommendations can be readily applied to garden-based learning programs that are place-based as in the *Seed to Supper* program.

Benefits of Community-Based Research

As a student researcher, my involvement in this community-based learning project gave me first-hand experience in a partnership that integrated the research sites and the academy, demonstrating the impact of community partnerships and research. This research project provided me the opportunity to conduct real-world, practical and applied research. The benefits of community-based learning and practices are numerous, but the greatest value lies in the positive impact on the communities we reside in and the opportunity for scholarly discourse.

As Minkler (2005) identified in her community-based participatory research, using an inclusive approach helped address the complexity of urban health problems (p. ii3). Rather than bringing in outside experts to create social change, she advocates for locally placed or "community-based" partnerships for community-based participatory research to create social change.

181

My role as researcher in a community-based setting has added a unique layer of involvement to this research process. By becoming a *Seed to Supper* volunteer, I became a partner with the Oregon Food Bank and the research sites where I volunteered. The community partner, Oregon Food Bank, along with the learning garden sites served as co-creators of the project surveys and the interview protocols. More recently, I am contributing to the curriculum redesign for the *Seed to Supper* program. I collaborated with key community members and participants by making presentations about this study at seminars, information sessions and for *Seed to Supper* trainings. During the last summer of the data collection, I attended many of the senior capstone classes and assisted the sites to develop and build community compost systems. My role was mainly to facilitate, observe and answer questions from both the capstone students and the *Seed to Supper* participants.

Community-based learning provided a meaningful and engaged research process for both the researcher and the community program, which builds on the several of the concepts discovered in this study; including place-based solutions and inclusion, and ultimately, provided an experiential learning process. The circular nature of the web of inclusion is an ideal metaphor to describe the process of community-based research.

Conclusion

This chapter lays out options for addressing the ongoing need to build local, sustainable community food security. The key implications of this study identified that community building, learner empowerment through place-based learning

methods, and providing opportunities for sustainability leadership through the web of inclusion, all contributed to increased access to locally grown foods and successfully empowered food insecure people and their communities. The web of inclusion weaves an interrelated system of internal and external community partnerships that enhance to learner empowerment and food literacy. This inclusion fosters greater participation in citizenship and contributes to food democracy and food justice within the communities examined in this study.

In order to move beyond the limitations of this study I recommend additional research on learning gardens programs over an extended period of time. This examination should include other learning garden programs in order to compare data collected from a larger sample group for comparison. A long-term study would increase the validity and add to the body of evidence-based research showing the impact of garden-based learning on food insecure communities.

Although the scope of this study focuses on the impact of learning garden programs on food insecure populations, the importance of empowering citizens to mobilize local food security has broader implications. As a society, it is imperative that we meet the challenge of creating healthy communities by engaging local community food systems through learning garden programs for all citizens.

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OREGON FOOD BANK LEARNING GARDEN SURVEY

Workshop Title:_____Date(w/year):_____

Please respond to the following statements with:
1 = disagree, 2 = maybe, 3 = agree

1. This workshop taught me something that I will be able to use in my garden.

                                                               1 2 3

2. This workshop has encouraged me to plant a garden.   1 2 3
3. I grow some of my own produce.   1 2 3
4. I have gained enough experience to grow some of my own fruits and vegetables.

                                                               1 2 3

5. I would like more gardening training.   1 2 3
6. Within the past two years I have grown some food. 1 2 3
7. I purchase more fresh fruits and vegetables.   1 2 3
8. I currently use a community garden space.   1 2 3
9. I have a garden in my yard   1 2 3
10. I volunteer at Oregon Food Bank's Learning Gardens 1 2 3

Circle or check boxes.

11. How often do you eat fresh fruits and vegetables? (Circle most often)

   3 times per day   1 time per day   5 times per week
     1 time per week

12. What additional things do you need to grow a garden?
     (Check all that apply)
         ❑ Seeds
         ❑ Garden Advice
         ❑ Labor in Garden
         ❑ Access to how-to Garden books
         ❑ Garden space
         ❑ Help putting in your garden
         ❑ Gardening Tools
         ❑ Money to buy garden supplies
         ❑ Other _____

13. What prevents you from obtaining fresh fruits and vegetables or growing your own?

  (Check all that apply)
  ❑ Cost
  ❑ Availability
  ❑ Garden space
  ❑ No time to garden

14. What would you recommend changing or adding to improve these workshops?

15. Please share a story about your gardening as a result of this workshop?

16. Do you need more information or advice to grow a garden? If yes, please explain

17. Where do you get your gardening questions answered?

Income Information – Learning Garden

Oregon Food Bank's Learning Garden programs work to address the root causes of hunger through increased nutrition, community food security and self-reliance in our community. In order to make sure our programs are effectively reaching those who may be in need, we would like to find out how many volunteers and educational participants earn less than 200% of the Federal Poverty Level. This

form is optional, but your participation will help us refine our programs and outreach efforts. This information will be kept completely confidential. Simply find the number of people in your household and determine whether you make more or less than the income listed. Check the appropriate box below.

☐ My family earns *less than* the amount listed below
☐ My family makes *more than* the amount listed below

Number of People in Household	Combined Annual Income	Combined Monthly Income
1	$ 21,660	$ 1805
2	$ 29,140	$ 2428
3	$ 36,620	$ 3052
4	$ 44,100	$ 3675
5	$ 51,580	$ 4298
6	$ 59,060	$ 4922
7	$ 66,540	$ 5545
8	$ 74,020	$ 6168

SEED TO SUPPER PARTICIPANT INTERVIEW QUESTIONS

1. As a result of taking a learning garden workshop, have you gained enough experience to grow some of your own fruits and vegetables. If yes, explain. If no, why.

2. As a result of taking a learning garden workshop, do you eat more fresh-grown produce? If yes, what kinds, did you grow them or purchase them?

3. Were you growing fruits and vegetables before the workshop Y/N, or after the workshop Y/N.

4. How has this workshop changed the kind of food you eat?

5. Where do you purchase or obtain most of your fresh produce?

> Farmer's Market   Grocery Store   Your or your neighbor's garden
> Food For Less   Food Pantry   CSA
> Oregon Food Bank   Food Co-op   Natural Food Store
> Other_____

6. What influences your decision to buy fruits and vegetables?

> Cost   Availability   Convenience Nutritional Value   Taste
> Transportation
> Other_____

7. Why do you grow your own fruits and vegetables?

> Taste Availability   Cost   Do not grow my own produce   Other_____

8. What would you recommend changing or adding to improve these workshops?

9. Please share a story about your gardening or meal experience as a result of this workshop?

10. Do you need more information or advice to grow a garden?

11. Where do you get your gardening questions answered?

12. Have you taken other gardening classes? If yes, which ones.

13. Do you work outside of the home?

14. Is there anything you would like to share about the Seed to Supper Program experience?