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Breaking Ground on the University Garden: Service-learning and Action Research

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By

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ABSTRACT

The purpose of this dissertation was to document, analyze, understand, and describe how the environmental virtue ethics of undergraduate students were impacted after participating in a service-learning project designed to establish a new university garden. This service-learning project occurred during the fall semester of 2011, on the campus of Lighthouse University, a mid-size Catholic college campus that is located in an urban area of Southern California. The service-learning component was embedded within one environmental ethics course. Over the course of one sixteen-week academic semester, thirty undergraduates, between the ages of 18-23, each volunteered ten hours in this new on-campus garden. In addition to the student volunteer work, one of the complimentary course components required students to attend a speaking engagement hosted by Dr. Vandana Shiva, a world-renowned environmentalist. The action researcher, served as the catalyst, recorder, and facilitator of this service-learning project. In these roles, the action researcher mobilized members of the university, volunteers from the broader community, and local master gardeners to work side by side with the undergraduate students in the garden. After a qualitative analysis was conducted through the procedures of action research, local recommendations were generated in order to assist future garden-based curricular and co-curricular activities.

CHAPTER 1

BACKGROUND OF STUDY

Introduction

"To plant a garden is to believe in tomorrow."
- Audrey Hepburn

This action research dissertation documented the mobilization of undergraduate students as they established a new organic garden on the campus of Lighthouse University. Action research involves gathering information while coming together with others in a social setting (Stake, 2010). Thirty undergraduates participated in this study through a service-learning project, embedded within one academic semester-long philosophy course. "Service-learning combines service to the community with student learning in a way that improves both the student and the community" (Avila-Linn & Rice, 2010, p. 3).

I, the action researcher, served as the catalyst, recorder, and facilitator of this service-learning project. In order to integrate this new garden into the fabric of Lighthouse University, I constructed a service-learning project geared towards working in the garden. First, I approached Dr. Bryant, a Lighthouse University professor of philosophy, and discussed with him, in person, my idea of embedding a garden-based service-learning project within his fall 2011 undergraduate philosophy course. Being a self-proclaimed "enthusiastic gardener" himself, Dr. Bryant was excited about the potential of integrating this service-learning project into his course.

In order to meet the service-learning requirement, Dr. Bryant required 10 hours of service from each of his students that were dedicated towards work in this new university garden. In addition to recruiting the professor, I also mobilized staff members from Lighthouse University,

volunteers from the broader community, and local master gardeners to work side by side with the undergraduates as they fulfilled their garden-based service requirements.

The theoretical framework that underlined this dissertation included literature on the history of community gardening and service-learning, which framed the action that occurred during the data collection period. By using an action research methodology, qualitative methods like in-depth interviews and observations (Hendricks, 2009) were employed in order to gather a rich description of the experiences of the undergraduates over the span of one academic semester.

In the opening chapter of this dissertation, I provide the local context of this service-learning project and discuss the role of social justice as it is situated within this unique research setting at Lighthouse University. Then, I illustrate how the dissertation is organized throughout this document. And finally, I close this chapter by providing an overview of the action research procedures and the limitations of this research.

Context of Dissertation

Lighthouse University is a private Catholic institution located in an urban California community. In the fall of 2010, a senior Lighthouse University undergraduate student, majoring in environmental science, established the LIONS Garden Club. Although I was not the leader, I was one of the 10 founding members of the LIONS Garden Club. The letters of the club represent: Lighthouse, Inspiration, Organic, Native, and Sustainability. The LIONS acronym also symbolizes the mascot of Lighthouse University: the Lion.

The original objective of this student-run club was to use gardening as a tool for educating the Lighthouse University community about organic food production, the native

ecosystem, and campus sustainability. The founding purpose of the club was to bring the campus community together in order to learn about gardening, composting, and the social benefits that a garden can offer the campus community.

Around the time that the LIONS Garden Club was founded, club members were awarded a $5,000 “Inspiration Grant” that was offered internally by the Lighthouse University administration to on-campus student organizations. The “Inspiration Grant” is reflected in the “I” within the acronym: LIONS. The grant was awarded by Lighthouse University to a group of students who demonstrated a sustainable service project idea that had the potential to positively impact campus life. In mid-November of 2010, shortly after The LIONS Garden Club was awarded this grant, the university approved a location for the new garden. The approved site was located on an empty patch of grass behind an old, but fully functioning, research greenhouse and a compost demonstration area.

In January of 2011, a group of Lighthouse University facility workers cleared the trees in the area, and the LIONS Garden Club broke ground on Lighthouse University’s first community garden: the LIONS Garden. The garden was planted in sections through a series of volunteer workdays during the spring semester of 2011. A number of volunteers were recruited from on-campus student-run clubs. The volunteers first planted a pollinator garden and then planted native flowering plants for the purpose of attracting birds and bees to the LIONS Garden.

In February of 2011, Lighthouse University elected a new president. To commemorate this occasion, the president established an Inauguration Service Week. During this week, the new president called for faculty, staff, students and friends of Lighthouse University to participate in various service activities in honor of the presidential inauguration. In the spirit of welcoming

Lighthouse University's new president into office, The LIONS Garden Club decided to hold a groundbreaking ceremony on February 17th, during this Inauguration Service Week.

During this groundbreaking ceremony, volunteers came to the LIONS Garden and installed 21 raised beds and planted an array of vegetables and flowers, including: several types of tomatoes, lemons, cucumbers, bok choy, basil, arugula, strawberries and other assorted herbs. One community volunteer also installed a customized, handmade, wooden, ecofriendly, and raised-garden bed, which he constructed himself without nails or petroleum-based products.

During the summer of 2011, the workers from the Lighthouse University facilities management department installed two new park benches (made from recycled plastic), one new outdoor table (also made from recycled plastic), one rainwater catchment system that was designed to collect rainwater, and an irrigation system that waters each bed automatically. The finished garden was originally projected to include a native plant garden, a rain garden, a dwarf citrus orchard and a vegetable garden.

The Lighthouse University administration initially sustained the garden project by committing labor time from the facilities management department, including: educational leadership from the Campus Sustainability Coordinator, maintenance and operations support from the grounds crew, and day-to-day garden management by paid student interns through the Federal Work-Study and student worker programs.

There were several academic programs at Lighthouse University that demonstrated interest in participating in The LIONS Garden including Biology, Botany, Philosophy, Engineering, Urban Studies, and Environmental Science. The LIONS Garden Club envisioned the garden as a collaborative space offering curricular and co-curricular programs for the

Lighthouse University community. This research represents an early attempt to impose a curricular structure in the garden through the design of one semester-long service-learning project.

Action Research Question

How does an undergraduate service-learning experience embedded within an undergraduate philosophy course impact student perspectives about the environment?

Purpose of Study

The purpose of this dissertation was to document, analyze, understand, and describe how the construction of a university garden impacted student perspectives about the environment. The intent was to deeply explore this service-learning experience, in relationship to the research question, and to generate new knowledge based upon the perceptions of the participants. This research suggests that through faculty and student academic work, service, and engagement, the garden has the potential to directly actualize the university's vision of social justice.

Statement of the Problem

The promotion of justice is an important component of campus life at Lighthouse University. A Catholic campus founded by the religious order of Jesuits, Lighthouse University exercises a vision of social justice that is grounded in faith and a sense of solidarity. Lighthouse University believes that social justice is present in society when existing social structures nurture human dignity for all members, guarantee the respect of basic human and civil rights, and support the full participation of all in society's social fabric. Accordingly, Jesuits work towards achieving social justice through the means of community participation, solidarity with other humans, and care for the earth (Cuban & Anderson, 2007). Meeting the needs of the poor,

transforming economies to better serve people, and treating all people with dignity all contribute to how the Jesuits define social justice (Cuban & Anderson, 2007).

Students at Lighthouse University contribute to social justice initiatives through Greek fraternities and sororities, student-run clubs and service organizations. The Lighthouse University administration dedicates a team of four full-time professionals to provide community service opportunities to students. However, the university lacks a service program dedicated to environmental justice initiatives. The new LIONS Garden has the potential to provide alternative service opportunities on campus, opportunities that promote environmentally just practices through the utilization of organic gardening methods. Simultaneously, the LIONS Garden provides to charity by donating many of the fruits and vegetables that are harvested to local food banks.

This lack of on-campus environmental initiatives at the university level is a problem that is reflective of a larger problem in education today, as supported in the literature (Kahn, 2010). Although being environmentally conscious has become a popular concept in America, current educational programs have not taken significant action to directly address environmental injustices (Andrzejewski, Baltodano, & Symcox, 2009). Furthermore, young American citizens are not prepared to respond to environmental injustices, which are attributed in part to the reluctance of our educational institutions to "provide the leadership needed to prepare effective global citizens who can act to save the planet, other species and humanity itself" (Andrzejewski, et al., 2009, p. 2).

Significance of the Study

This research was significant on the local level because the nature of this service-learning project was new to Lighthouse University. Accordingly, the new university garden provides a place for environmental service opportunities to exist on campus. In addition, the service-learning project under study provided a vehicle for students to contribute to the broader community while simultaneously learning from the broader community (Arches, 2007).

Further, this service-learning project actualizes the university's responsibilities to educating and assisting the community (Arches, 2007). This research is grounded in the belief that the purpose of education is to promote the public good, and that the problems of a democratic society are problems that educational institutions should be addressing (Dewey, 1916). In this research, the LIONS Garden realizes and places into action the university's responsibility to educate the broader society.

In addition, this action research dissertation gathered authentic student perceptions about their participation in the stages of creating a university garden through an academically rigorous service-learning project. The analysis of student reflection contributed to the field of service-learning research and practice. These elements will be further explored in Chapters 4 and 5.

Lastly, action research dissertations contain a local perspective that few traditional researchers are able to provide (Herr & Anderson, 2005):

> A dissertation forces action researchers to think not only about what knowledge they have generated that can be fed back into the local setting (local knowledge), but also what knowledge they have generated that is transferable to other settings (public knowledge). (p. 10)

I employed action research in order to integrate the LIONS Garden into the social fabric of the university academic culture (Greenwood & Levin, 2007). This action research is on the ground with the participants of this study. I gathered rich data from the participants in the hopes of informing future university garden-based initiatives, at Lighthouse University and beyond.

Conceptual Framework

In an effort to seek harmony between theory, action, and research within this unique college setting, I borrowed fragments from the educational philosophy called service-learning. Service-learning provides a means of solving community based problems while acting as a tool for learning (Cress, Collier, Reitenauer, & Associates, 2005). Service-learning involves learning a variety of skills through the act of service, and mandating that something be given to the community who receives this service (Kronick, 2007). Service-learning is academically rigorous, civically engaged, useful, and responsible (Bringle & Phillips, 2004).

Through a reflective process within each service-learning experience, students are encouraged to combine knowledge from prior experiences with new knowledge that they learned from academic content provided by the course instructor (Cress et al., 2005). Service-learning is grounded in the belief that "individuals are autonomous change agents who can effect positive and sustained transformations" (Butin, 2010, p. 7). This concept will be further explored in Chapter 2.

Research Methodology

This dissertation employed an action research methodology. "Action research is the study of action, often with the intent to lead to better action, but it is special in that it is carried out by the people directly responsible for the action" (Stake, 2010, p. 159). Traditional researchers

follow a structured process in the planning and implementation of their projects which involves identifying the need and rationale, developing a plan and implementing it, and finally, reflecting on its successes or failures and publishing the findings (Atweh, Kemmis, & Weeks, 1998). Action research projects usually follow alternative processes that are more cyclic and iterative (Atweh et al., 1998).

Action research stems from the assumptions, values, and approaches that ground traditional social science and university-based research. However, action research is not a linear product with a finite ending (Herr & Anderson, 2005). Because of its emergent design and cyclical revision of research questions, this action research dissertation required unique decisions about how to write the proposal, how to structure the dissertation, how to narrate the findings, and how to defend the final product (Herr & Anderson, 2005). Because this study explored uncharted waters, I remained flexible and changed my research plans several times as the semester proceeded. The methodology is discussed in further detail in Chapter 3.

Throughout this service-learning and action research process, I investigated social structures, reflected on individual practice, and moved others and myself to action (Kemmis & McTaggart, 2005). Throughout the duration of the data collection period, I systematically planned, acted, observed, and reflected. The research process developed while it was being performed and greater understanding pointed the way to improved actions (Herr & Anderson, 2005). As I moved into this research with pre-determined time frames, I realized that these methods had to be modified along the way. This process is also detailed in Chapter 3.

The action research format aligned with my beliefs, values, and commitments to social change (Herr & Anderson, 2005). I employed qualitative action research methods because I was

interested in the contextual variables and the ways in which these variables influenced the outcomes of this dissertation (Gay, Mills, & Airasian, 2009). The literature on action research supports the assertion that "qualitative data collection methods are more appropriately applied to action research problems than are quantitative methods and designs" (p. 492). The action research methods of keeping a research journal, performing participant observations, using audio recordings, and conducting interviews commonly fall within the qualitative research paradigm and were employed throughout this study (Hendricks, 2009; O'Brien, 2001).

In summary, this dissertation utilized multiple methods used in qualitative research which include: (a) understanding the meaning of participants, events, and situations; (b) understanding the context with which participants act, and how this context influences their actions; (c) identifying unanticipated phenomenon and influences (e.g. getting along naturally, excitement, unexpected acts of kindness); (d) and understanding the processes by which events and actions take place (Hendricks, 2009; Hatch 2002). Through informal conversations and student reflection, relationship building, participant observations, researcher journaling, and a literature review, the threads of data that I collected were woven into a unique, imperfect tapestry of action, service, reflection, and analysis.

Limitations

The uniqueness of action research elements makes it difficult to generalize the study's implications (Hendricks, 2009). "If the research is based on one service learning course, or one institution, or one type of institution, then there is less confidence that the results generalize to all college students" (Bringle & Phillips, 2004, p. 14). The scope of this study is limited to observing 30 students in one university course. I strictly observed students doing one particular

kind of garden-based service at one university. Thus, because the unique context significantly affected the study's outcomes, generalizability may be low. However, this dissertation was focused on gathering local data primarily, and was not designed to produce generalizable results. Weaving together service-learning and action research within the local context of this university garden is unique and therefore, there are no examples that squarely precede this study.

This dissertation is limited to these following components of action research: it is inherently interdisciplinary; it includes democratic participation, community problem-solving, social change, and is informed by textual references (Agryis and Schon, 1991). Acting as the action researcher, I began with a problem that originated from the perceptions of practitioners within a particular university organic garden and bounded episodes of the research according to the boundaries of this local context (Agryis and Schon, 1991).

Summary

Chapter 1 introduced the purpose, significance, and limitations of this dissertation. Chapter 2 presents an overview of the literature on service learning, a historical review of the literature on American community gardening, plus an exploration of the local context at Lighthouse University, all of which informed the action in this study. Chapter 3 describes the research methodology and includes a detailed description of how the data was gathered and analyzed in order to answer the research question. Chapter 4 presents the synthesized and summarized findings of this action research dissertation. These findings are based on the data that was gathered from interviews, observations, and project artifacts. Finally, Chapter 5 presents an analysis of the finding and presents recommendations for a plan of action based upon the analysis of these findings.

CHAPTER 2

LITERAURE REVIEW

Introduction

The literature review, which underlies this action research dissertation, is divided into two primary sections: Service-Learning and Community Gardens in America. Chapter 2 begins with an exploration of the conceptual framework of service-learning and then expands to further probe the practical implementation of service on college campuses. Following is an American historical overview of community gardens. This section includes examples of community gardens that have grown within American cities, K-12 schools, and colleges. Lastly, Chapter 2 will focus in on the local context of the research site.

Service-Learning

Service-learning is a strategy that moves learners to grapple with and find solutions to community and environmental problems (Butin, 2010). "Service-learning combines service to the community with student learning in a way that improves both the student and the community" (Avila-Linn & Rice, 2010, p. 3). Service-learning is academically rigorous, civically engaged, useful, and responsible (Bringle & Phillips, 2004). Butin (2011) suggests that there is no "one thing" called service-learning and that it is "played out" in multiple forms with highly multiple goals. Service-learning compels educators and students to analyze issues in interdisciplinary ways and to consider various facets of student development (Bringle, 2003).

Classified under the broader field of experiential education, service-learning is a philosophical pedagogy that combines community volunteerism with student engagement and reflection (Butin, 2010; Cress et al., 2005). Service-learning engages students in academic

learning and community based experiences that are intentionally and deeply interrelated (Avila-Linn & Rice, 2010). There is as much attention paid to student preparation, learning, and reflection as there is to the effectiveness of the community partnership (Avila-Linn & Rice, 2010).

Four Components of Service Learning

There are four components defining service-learning that stand out in the literature. The first is integrating service opportunities into academic curriculum (Allen, 2003; Wade, 2001). Service-learning programs apply academic content to real-world situations. The second component of service-learning is that these projects must be designed to meet a community identified need (Allen, 2003). High quality service-learning experiences include students defining a specific community problem and building a project to address it. For example, a student decides to fix a leaky pipe found in her school after experiencing a lesson on water conservation. The third component of service-learning is reflection (Wade, 2001). Reflection activities may be accomplished through student- constructed written journals that document personal experience (Wade, 2001). Reflections also take the form of student discussions after the service-learning project is completed (Wade, 2011). The fourth component of service-learning is the development of the student's social, personal, and civic attributes (Allen, 2003; Wade, 2001). For example, a student strengthens his social and civic skills while volunteering at a local farmers market.

Service Learning as a Teaching Strategy

Service-learning involves learning a variety of skills through the act of service, mandating that something be given to the community and or individuals who receive this service

(Kronick, 2007). Moser and Rogers (2005) describe service-learning as a powerful teaching strategy that can enrich student learning, enhance teaching, and revitalize the community.

Similar to problem based learning; service-learning creates learning and problem solving opportunities for students (Soslau & Yost, 2007). It links students and other community members in a meaningful and reciprocal relationship, allowing students the opportunity to include themselves in their community (Abernathy & Obenchain, 2001). Effective service-learning initiatives involve students in hands-on community service activities that address the educational, safety, and environmental needs of the community (Moser & Rogers, 2005). "Service-learning invites you to bring who you are, what you know, and what you can do into the classroom and the world beyond in applying your whole self to creating community change" (Cress et al., 2005, p. 33).

Service-Learning in America

Service-learning in America has developed extensively over the past century. Government agencies have supported service-learning by passing legislation, creating revenue sources and constructing national programs. The intention of various congressional bills, such as the Edward Kennedy Serve America Act (Cress et al., 2005), is to bolster service-learning initiatives within educational institutions throughout the country. As a result, colleges and universities have integrated civic work into course curriculum, attempting to expand the scope of service-learning as a legitimate form of education (Butin, 2010). However, in terms of methodology, service-learning has not proven to receive widespread academic legitimacy or credibility (Butin, 2010).

The history of service-learning originates in the works of John Dewey (1938), with

foundations tracing back to the Progressive movement (Abernathy & Obenchain, 2001). The philosophical underpinnings of service-learning owe much to the work of John Dewey, although Dewey never used the term "service-learning" himself (Harkavy & Hartley, 2010). Lee, Olszewski-Kubilius, Donahue, and Weimholt (2008) explain that Dewey promoted a connection between daily life and learning. Dewey insisted on the "intimate and necessary relation between the processes of actual experience and education" (Dewey, 1938, p. 20). He believed that the most powerful learning is present when problems of interest are examined, reflected, and acted upon (Dewey, 1938). Dewey's theory of experience formed the experiential education foundation that claimed learning through experience is superior to passive learning (Erickson & O'Connor, 1999).

Dewey (1938) emphasized the need for democratic citizens to understand and consider the welfare of society as a whole. Dewey insisted that learning democracy must begin with experiences close to home, and that home is the neighborly community (Harkavy & Hartley, 2010). For Dewey, a commitment to the collective goal, in conjunction with academic growth, could be best attained through project-based and experiential learning (Kenny & Gallagher, 2002). Dewey maintained that students would not be prepared for life in a changing society by memorizing static facts and information passed along by society's elders. "Instead, genuine education would be derived from life experiences that were accompanied by opportunities for discussion and reflection. In the absence of reflection, experience by itself has the potential for "mis-education," or a faulty interpretation of experience" (p. 18).

Although weaving service with education has existed in American education for most of the 20th century, the importance of service has increased in recent decades (Reed, Jernstadt,

Hawley, Reber, & Dubois, 2005). Service-learning has received a large amount of press and bipartisan presidential support. Presidents Bill Clinton and George W. Bush supported service-learning as a valuable tool for education (Allen, 2003). Allen (2003) states that these presidents maintain that: "service offers a chance to apply the content of studies and character to real problems in their communities" (p. 51).

In 1990, Congress passed the National Service Act that called for students to acquire skills and knowledge in real-life community service opportunities (Quezada & Christopherson, 2005). Three years later, in 1993, Congress passed the Federal and National Community Service Act that further supported the planning and implementation of service-learning programs (Quezada & Christopherson, 2005).

Service Learning and Higher Education

"Contemporary colleges and universities aspire to create successful alumni who contribute positively to their own lives and to the lives of their families and communities" (Kenny, Simon, Kiley-Brabeck, & Lerner, 2002, p. 2). In turn, higher education institutions seek to reach out to communities, and use their research and educational programs to add value to civil society. Through providing opportunities for student civic engagement through outreach activities, higher education institutions seek to create educated and engaged citizens who graduate from community-collaborative, or engaged, universities. Accordingly, higher education institutions attempt to weave civic engagement into the core educational experiences of students.

The history of university service-learning. The history of higher education in America includes a clear commitment to public purpose (Kenny & Gallagher, 2002). Colleges in colonial America focused on preparing students for leadership of the new nation. For example, Harvard

College was founded in 1636 to prepare citizens for active involvement in community life. In the late 1800s, university commitment to the solution of social problems of the surrounding community was exemplified at the University of Chicago through the establishment of the Hull House, a social settlement founded by Jane Adams (Kenny, & Gallagher, 2002).

Historically, service-learning is a relatively new phenomenon in American higher education. The term was first coined in 1967, in reference to an internship program that was sponsored by the Southern Regional Education Board through which college students gained academic credit for work on community projects (Kenny & Gallagher, 2002). As a pedagogical practice in higher education, service-learning was limited to a small group of participants until the mid-1980s. By the late 1980s, service-learning was gaining in prominence and was clearly distinguished from community service. The 1990s witnessed tremendous growth in service-learning.

Colleges and universities have expressed a renewed commitment to civic responsibility, with service-learning as a central vehicle for fulfilling this commitment (Kenny & Gallagher, 2002). **"**Recent interest in service-learning is, in part, a response to the view that higher education abandoned its historical commitment to the community and should now reestablish its responsiveness to society and its relevance to public life" (p. 17). The call for civic engagement is not only relevant to instruction, but also to the mission, policies, and strategic operations of universities that command trust, possess large assets, and are permanent fixtures of communities (Bringle, 2003).

As a result of federal legislation, volunteer centers on college campuses have worked to pair undergraduates with volunteer opportunities. Legislative acts provide federal funds to

institutions of higher education, encouraging the integration of service and the volunteering of one's time or skills to help those in need (Reed et al., 2005). In the spring of 2009, Congress passed the Edward M. Kennedy Serve America Act. This bill, referenced as H.R. 1388, more than triples the number of volunteer opportunities for Americans, from 75,000 to 250,000, in areas like education, clean energy, health care, and assistance for veterans (Kittredge, 2009).

Research has shown that the percentage of university students involved in service has steadily increased. Since the terrorist attacks of September 11, 2001, the nation has witnessed a significant upsurge in volunteers, particularly among college students (Dote, Cramer, Dietz, & Grimm, 2006):

> Both on campuses and in surrounding communities, millions of college students are participating in a wide range of volunteer service activities, from teaching and mentoring children from disadvantaged circumstances, to raising funds for worthy causes, to helping their fellow Americans recover from hurricanes and other disasters. (Dote et al., 2006, p. 2)

Volunteering by college students is growing at twice the rate of overall volunteering (Dote, Cramer, Dietz, & Grimm, 2006). From September 2001 to 2006, college students who volunteer increased to over 30%, exceeding the volunteer rate for adults (Kittredge, 2009). In 2006, the Corporation for National and Community Service issued a report stating that college students are twice as likely to volunteer as Americans of the same age who are not enrolled in an institution of higher education.

In 2005, Campus Compact found that college students are more committed to service than they were five years ago, indicating that more than 30% of the survey's participants

committed to at least four hours of community service per week (DiMaria, 2006). The same survey found over 80% volunteered occasionally during their high school senior year, an all-time high, and 70% typically volunteered on a weekly basis. Sixty-seven percent of the participants, an all-time high in percentage, believe there is a good or some chance that they will continue to volunteer in college (DiMaria, 2006).

Integrating service-learning into the college curriculum. The use of service-learning as a pedagogy in higher education classes has blossomed over the past twenty years in both undergraduate and graduate courses (Butin, 2010). In recent years, a respectable body of research has been conducted regarding the merits of integrating service-learning projects into college course curricula, particularly in the social and behavioral arenas (Joseph, Stone, Grantham, Harmancioglu, & Ibrahim, 2007). A study created by Joseph et al. (2007) found that service-learning as a pedagogical tool positively improved critical thinking. Service-learning has also shown to be effective in changing negative social attitudes towards groups of people about which one has a stereotype, or a biased or prejudiced set of attitudes and/or beliefs (Erickson & O'Connor, 1999).

Service learning and character related changes. Social psychological theory and service-learning research suggest that participation in collegiate service-learning may produce character-related changes in four areas: (a) social responsibility, (b) awareness of social problems, (c) meaningfulness of college life, and (d) expectations for future community service (Reed et al., 2005). There are several benefits that students can receive while participating in collegiate service-learning. For example, students engage in opportunities to experience diversity, overcome stereotypes, and build intercultural communication skills. Students develop a

better understanding of academic content, of non-profit organizations, and challenges facing their community. Further, students build connections to their community, engage in career planning, workplace preparations, and skill building, and students explore making a commitment to lifelong service (Avila-Linn & Rice, 2010).

Service-learning as a learning strategy. Service-learning is an instructional strategy that not only involves students in solving problems in their communities but also acts as a vehicle for learning. Students who are actively engaged in their own learning take ownership of it and thus are more motivated to learn (Soslau & Yost, 2007). Students benefit academically and socially when academics are integrated with a commitment to creating a caring and civil community (Moser & Rogers, 2005). Abernathy & Obenchain (2001) found that students empowered as citizens within service-learning projects become empowered academically. Student empowerment may include enhanced self-determination, renewed interest in academics, enhanced social skills, and authentic inclusion in community. Research suggests that students involved in service-learning were more likely to attend class regularly and spent longer time periods on task, which indicated an increased desire to attend class and learn (Soslau & Yost, 2007).

One of the best ways for university students to test social science theories is through experiential learning. When students visit low-income or ethnic neighborhoods, they find out if what they are reading in the classroom is supported by what they are experiencing in the community. For example, The Black Metropolis Model organizes a one-year service learning sequence that moves students beyond the classroom and into a study of their local Chicago public housing system (Kronick, 2007). This research suggested that the students witnessed an

elevation in their critical thinking, research and technical skills after participation in this service-learning project. Many students, who have since graduated, have pursued careers in social services by furthering their education (Manley, Baffa, Dube & Reed, 2006). Students who do service-learning from fields that do not lead to service careers, such as engineering, become attuned to the needs of their community (Kronick, 2007). Many of them will not go into this field professionally, but a number of students will serve on community boards or even run for public office (Kronick, 2007).

According to Graham Spanier (1999), the former president of Penn State University, service is likely to be most powerful when coupled with the teaching of practical skills. For example, Penn State University students have discovered their own ability to contribute to beneficial projects like growing food, creating parks, or setting-up businesses that meet previously unfulfilled community needs (Spanier, 1999). Students introduced to a community supported farm may spark a generation of adults willing to use their energy to craft institutions and technologies aimed at fostering the long-term health of the human and natural communities (Spanier, 1999).

Integrating reflection into the service-learning curriculum. Reflection is defined as the "intentional consideration of an experience in light of particular learning objectives" (Hatcher & Bringle, 1997, p. 53). Quezada and Christopherson (2005) state that experience alone does not ensure that learning takes place; a need exists to integrate the service experience with past experiences through reflection. Reflection also encourages the thoughtful connection between the project and the academic strengths and weaknesses of students (Abernathy & Obenchain, 2001). "Learning through reflecting on experience is at the center of service-learning courses,

and faculty guide students as they integrate intellectual knowledge with community interactions through the process of reflection" (Cress et al., 2005, p. 8).

Structured reflection is a key component in service-learning. Structured reflection is thinking systematically about an experience that is guided by specific course objectives and academic content (Cress et al., 2005). Moser and Rogers (2005) recommend guided reflection for helping students to assess their service-learning experience. "Reflection serves as a bridge for the back-and-forth connecting between what students learn in class and what the student is experiencing in the community" (Cress et al., 2005, p. 83).

Researchers identified four characteristics of successful reflection when applying it to a service-learning course:

> Continuous—Reflection must take place before, during, and after the completion of the service project to be useful.
>
> Challenging—Effective reflection involves pushing ourselves out of one's comfort zones to make new connections between concepts and to think in new ways.
>
> Connected—Successful reflection can serve as a bridge between the service experience and one's discipline-based academic knowledge.
>
> Contextualized—Effective reflection is framed in a manner that is appropriate for the context in which the service experience takes place. (Eyler, Giles, & Schmiede, as cited in Cress et al., 2005, p. 27)

Problems in service-learning methodology. Service-learning is not without its critics (Moser & Rogers, 2005). There is an argument that service-learning is volunteerism, and by definition, cannot be required by institutions (Cress et al., 2005). Despite strides in the field of

service-learning, the methodology of service-learning is not significantly legitimized in the literature as a valid form of academic rigor (Butin, 2010). Service-learning is about the experience, yet service-learning research often fails to focus on the experience (Hecht, 2003).

> Service-learning courses should not be viewed as an educational utopia. Personality conflicts can arise, students may lack the ability to deal with others who are different from themselves, community partners may not follow through on their commitments, and group members may not meet their responsibilities. (Cress et al., 2005, p. 14)

Academics across disciplines have expanded their efforts in exploring the effectiveness of service-learning techniques as a pedagogical tool. Joseph et al. (2007) argue that many institutions have struggled to instill a sense of "service to community" in educating their students (p. 2). Some service-learning detracts from the college's primary role of work-force development (DiMaria, 2006). Manley et al. (2006) discuss institutional legitimacy as an obstacle:

> Denial of institutional legitimacy, whether it is in the university or other professional fields where service-learning is being taught, is tied to the perception that service-learning lacks educational merit. The matter of educational merit is not the only obstacle plaguing service-learning and community based research. Questions arise regarding service-learning methodology, the role of reflection, how reciprocal service-learning is to those being served, and whether community based research constitutes service-learning. (p. 116)

There is also ambiguity in the field when classifying what a service-learning project truly is. "Despite the expansion of service-learning theory and practice, there is a troubling ambiguity concerning even basic principles and goals in the service-learning literature" (Butin, 2010, p. 4).

For example, the popularity of the "soup kitchen" model sometimes overshadows effective projects, adding to the perceptions of illegitimacy found in the field. Manley et al. (2006) describe the "soup kitchen" model as a project where students explore social problems but do not learn about those being served, where their interaction with those being served is limited, and the amount of time spent with those in need is short term. In this model, there is little to no learning. "Soup kitchen" models often serve as quick college credits and in some cases, an easy grade for students (Manley et al., 2006).

Lee et al. (2008) discuss how service-learning is often perceived as being identical to volunteer or community service because both involve service projects that impact the welfare of others. Service-learning, however, is a method of teaching, not an end in itself. Thus, it focuses on educating students, not simply on benefiting a client or a service project with purposeful learning objectives; it is unlike general volunteerism or community service like the "soup kitchen" model (Lee et al., 2008). Service related to the environment is a subject not as heavily explored on college campuses. And service in university gardens is even rarer. A discussion of gardening, its benefits, and its place on college campuses now follows.

Community Gardens in America

All across America today, people are working together to reclaim empty land and to start local community gardens (Obama, 2012). As opposed to gardening privately, community gardens are strips of land utilized for producing food by people from different families, typically urban-dwellers with limited access to their own land (Okvat & Zatura, 2011). Different from efforts by governmental organizations to create green spaces, community gardens are "bottom up" efforts to grow food (Okvat & Zatura, 2011). Whether cultivated through a system of

individual family plots, or tended as a whole by a group of citizen volunteers, community gardens involve the leadership and active participation of area residents to plan and care for them (Okvat & Zatura, 2011). "Altogether, there are about eight thousand community gardens in the United States and Canada" (Obama, 2012, p. 87).

Communities throughout the United States are utilizing community gardens as a tool for education. Teachers, parents, and students have worked together to start community gardens within schools. School gardens link senior citizens with local youth and provide neighborhood gardeners with a place to grow crops for local food banks. Some school gardens grow produce for food banks to ensure members of their community can access healthy food (Obama, 2012).

American Presidential Engagement with Gardening

Community gardening has moved onto the lawn of America's highest office. When Barack Obama first became the President of the United States, his wife, First Lady Michelle Obama, installed an organic "Kitchen Garden" on the White House's south lawn (Kohan, 2009). Michelle Obama is a "big believer in community gardens, because of their beauty and for their access to providing fresh fruits and vegetables to so many communities across this nation and the world" (Berger Kaye, 2010, p. 133). The First Lady was inspired to form the garden after learning from her pediatrician about families in his practice who consumed all their meals at different food chains (Obama, 2012). Aside from a piece of pickle or shredded lettuce on a hamburger, these families hardly had any fruits and vegetables in their diets. This pediatrician talked about the spike in the number of his young patients who were overweight or even obese. These children are developing adult lifestyle diseases, with elementary students being diagnosed with type 2 diabetes and high school students already on blood pressure medication. In recent

years, the problem has only gotten worse, and today roughly one in three American children are overweight or obese (Obama, 2012).

Over the past three years, The White House Kitchen Garden has bloomed and has helped to start a national conversation about the food we eat and how it affects our children's health (Obama, 2012). It has helped to raise awareness about America's crisis of childhood obesity and the threat it poses to the nation's future, leading to the creation of "Let's Move," a nationwide initiative to solve this problem, "so America's children can grow up healthy" (p. 19). Within her "Let's Move" initiative, The First Lady has promoted community gardening as a tool to combat childhood obesity through the eating of healthy food and the boosting of physical fitness. Today, in many elementary schools across America, outdoor recess has been eliminated. "And kids everywhere today are more likely to huddle around a video game console than join a game of Double Dutch"(p. 16). It is Michelle Obama's hope that the story of the White House Kitchen Garden will "inspire families, schools, and communities to try their own hand at gardening and enjoy all the gifts of health, discovery, and connection a garden can bring" (p.16).

Michelle Obama desired for the new White House garden to be a learning garden, a place where people could have hands on experience of working the soil, stating, "I wanted them to come back for the harvest, to be able to see and taste the fruits and vegetables of their labors" (Obama, 2012, p. 10). In 2009, Michelle Obama joined 23 fifth graders from Bancroft Elementary School in Washington D.C., with shovels, rakes, pitchforks, and a few wheelbarrows to break ground on the White House Kitchen Garden. Twenty days later, the students planted lettuce, peas, spinach, broccoli, and collard greens.

Since groundbreaking and initial tilling in March of 2009, progress on the first garden on White House grounds since Eleanor Roosevelt's Victory Garden during World War II has been well documented. This new garden has yielded a constant supply of fresh produce for the first family and White House events (Djang, 2009). The White House chefs are also involved in the garden (Obama, 2012). The chefs make lists of what they would like to grow and wander the garden with their bowls and baskets in order to harvest from the garden's beds. The chefs plan their menus for events, large and small, by what is growing fresh in the garden. The menus revolve around nature, around what is out in the garden and ready to harvest (Obama, 2012).

Since the planting of the garden, the chefs have noticed a change in the way that they cook, one chef commented: "No longer are the meals we serve driven by the protein on the plate and garnished with a few baby carrots. Vegetables are now equal partners" (Obama, 2012, p. 66). About one-third of what is harvested at the White House Kitchen Garden is donated to Miriam's Kitchen, an organization that provides meals and services for homeless individuals in the D.C. area (Djang, 2009).

Michelle Obama thinks the garden is a community effort because of the many people who think of this garden as "their garden" (Obama, 2012). White House staffers volunteer their time many mornings before work. Without anyone expecting it, the garden has become a community garden, connecting people from all different backgrounds, ages, and walks of life; and everyone involved shares in its care and in its success. The White House also added a staff member who is beekeeper (Obama, 2012).

When I decided to plant the White House Kitchen Garden, I thought it would be a great way to educate kids about food, where it comes from, and how fresh fruits and vegetables

> can help all of us live daily lives. But our little garden has turned into more than I could have ever expected. As I travel the world, no matter where I go, the first thing world leaders, prime ministers, kings and queen have asked me: How is the White House Kitchen Garden? I tell them about working with local students from the D.C. community to turn over the dirt, plant the seeds and make sure everything gets enough water. I tell them about the excitement that I see on the faces of the kids when we check on the plants and see how much they have grown. I tell them about the enormous sense of satisfaction that the kids get from harvesting the fruits and vegetables they have worked so hard on. And the joy that comes from enjoying food grown with such love and care. And that's why this garden has been one of the most important things I have done in my life so far. (Obama, 2010)

The gardening commitment of the "Founding Fathers." The Obamas were not the first American politicians to promote gardening. According to Wulf (2011), it is impossible to understand the making of America without looking at the Founding Fathers as farmers and gardeners (2011). The Founding Fathers of The United States: Benjamin Franklin, George Washington, Thomas Jefferson, John Adams, John Quincy Adams and James Madison, all shared a passion for nature, plants, gardens, and agriculture (Wulf, 2011).

This passion for gardening is woven into the original economic and social fabric of America; thereby influencing American political thought (Wulf, 2011). The economic importance of agricultural crops was important for the Founding Fathers because they wanted America to become self-sufficient and independent. The Founding Fathers also thought

gardening had patriotic importance, as they all understood the importance of the role nature played for forming America's national identity (Wulf, 2011).

This passion for nature that the Founding Fathers had is seen today in the protected wilderness of national parks (Wulf, 2011). Today's changing attitude toward local produce, home-grown vegetables and inner-city gardening in the United States shared a similar vision with America's Founding Fathers:

> The new food movements ranging from the promotion of urban agriculture to the preservation of farmland, from the first lady's vegetable garden at the White House to the returning interest of native species in ornamental gardens—can be placed in the context of the founding fathers' legacy. (p. 10)

Benjamin Franklin. For many years, Benjamin Franklin took an interest in plants for their scientific and economic value (Wulf, 2011). Franklin also participated within a network of letter-writers who exchanged seeds with each other. Franklin's seed exchange correspondents ranged from farmers, gardeners, and botanists in both America and Europe. Franklin would often send a new kind of oat and barley to his wife Deborah to distribute among the plantsmen in Philadelphia.

When America experienced political trouble, Franklin's interest in agriculture grew deeper (Wulf, 2011). For example, in response to the tensions between Britain and America, Franklin turned his attention towards plants and agriculture. With plenty of fertile soil, Franklin realized that the American colonies provided crops like grain, corn, and tobacco to Britain (Wulf, 2011). Consequently, almost all of the American colonies lived off the land. Franklin thought that America could be self-sufficient because of the colonist's reliance on agriculture for their

main income, combined with the seemingly endless resources of land that could be used as an advantage of the colonies. As tension over the Stamp Act grew, Franklin argued that the colonies would be able to pressure the British by boycotting their goods. “I do not know a single article,” Franklin stated, “that the colonies couldn’t either do without or make themselves” (p. 7).

In January of 1769, Franklin rallied behind the colonists’ call for a sweeping boycott of British goods. The boycott made Franklin’s seed collecting all the more urgent. Not only was he sending larger amounts of seeds and more varieties home, but also these were now for America’s profit alone and not for the profit of Britain (Wulf, 2011). Every time someone told Franklin about a new edible plant, he was thrilled by the possibility of its economic potential. Franklin was convinced that: “No longer was America to be a colonial grain store, or a market for British goods. America, could provide all the necessaries herself and they would just have to renounce the luxuries they couldn’t produce” (p. 8).

George Washington. Like Benjamin Franklin, George Washington also envisioned wealth and independence in the cultivated soil of America (Wulf, 2011). After leading America over the British, Washington devoted his life to agriculture and considered himself a farmer. He was completely involved with all the details of his lands on his Mount Vernon estate. Washington decided to bring species from across north and south of America to grow in gardens of his Mount Vernon estate. Washington’s garden was truly American for it was the first ornamental garden exclusively with native species, which was a radical departure from traditional colonial plots (Wulf, 2011).

John Adams. Our second president, John Adams, was the first to live in the newly built White House, though only for four winter months (Obama, 2012). Adams had the ground plowed

and fertilized for its first "kitchen garden," however no one knows exactly where it was located. Adams lost his bid for reelection and departed the White House in 1801, and therefore, his garden never harvested much produce (Wulf, 2011).

***Thomas Jefferson*.** Fortunately, America's third president, Thomas Jefferson, was an avid gardener. When Jefferson became president, he wanted to make a political statement with his choice of species (Wulf, 2011). He began by enclosing a small area around the White House with split rail fences (Obama, 2012). "He then lined the grounds with groves of trees and even started growing plants inside the White House, arranging pots of geraniums and strawberries and fig and orange trees along three sunny window bays in his office" (p. 24). "He envisaged an all American garden for the White House, but without money for the project, Jefferson could not complete his vision" (Wulf, 2011, p. 151).

Jefferson originally wanted a circular garden for the White House, but the land was best suited for an oval design (Obama, 2012). His plans called for an area of five acres, some of it set aside for walks, paths, groves, and assorted shrubbery. He also suggested some vegetable plots for use by the President's House. Although Jefferson never planted a White House kitchen garden, he was constantly experimenting with new seeds and plants at Monticello, his home outside of Charlottesville, Virginia. President Jefferson grew more than 100 species of flowers and 330 varieties of vegetables and herbs, many of which are extinct today (Obama, 2012). Jefferson was a great collector of plant species and seeds that he shared with his neighbors around Monticello. Jefferson's gardens became a showcase and experimental laboratory where he cultivated local and exotic plants. Jefferson kept pages of notes on his garden, and his letters are filled with garden questions, thoughts and updates. Two of the thirty-four beds in today's

White House Kitchen Garden are dedicated to Thomas Jefferson, and the plantings in these beds are grown from seeds collected from gardens at Monticello (Obama, 2012). Unfortunately, much of Jefferson's work was lost when the British trampled the grounds and set fire to the White House during the War of 1812. By 1825, John Quincy Adams, another gardener, moved in. "As he traveled, Adams liked to gather interesting seeds and dig up small plants" (p. 26).

James Madison. James Madison also believed gardens were important for Americans (Wulf, 2011). When Jefferson and Madison toured Vermont together, they wanted to learn as much as possible about sugar maples in order to reduce America's dependency on sugar from the British West Indies. In a speech given in 1818, James Madison stated that the protection of the environment was essential to the survival of the United Sates. Madison said, "Humankind could not expect nature to be made subservient to the use of man", but believed that man has to find himself in the "symmetry of nature without destroying it" (p. 11).

The Early History of Community Gardens in America

In America, the first community gardens appeared in Detroit, Michigan in the 1800's (McKelvey, 2011). During this time period, this city offered poor residents an opportunity to grow food in city-owned vacant lots (Gaylie, 2011). These gardens originally provided unemployed workers living in large urban areas with land and technical assistance (McKelvey, 2011). These gardens were also places for youth to develop strong work habits and to learn about civics. During this time, social reformers, educational reformers, and those interested in the beautification movement, took the lead for promoting community gardening.

The garden movement during World Wars I and II. During the time of World War I, the war garden movement grew out of a war-time necessity. War conditions made it essential

that food should be raised during peace times, with labor not engaged in agricultural work and not taken from any other industry, and in places where it made no demand upon railroads already overwhelmed with transportation burdens (Pack, 1919).

> "The knowledge that the world faced a deficit in food, that there existed an emergency which could be met only by the raising of more food, was apparent to every well-informed and thinking man and woman during the early months of 1917" (p. 1).

Whether the land to be cultivated was a back yard or a vacant lot, it was a potential source of food supply, and the raising of food on these areas would solve many problems besides that of food production. "There were no issues related to transportation or distribution to be solved in this type of food production" (Pack, 1919).

In 1917, The National War Garden Commission was established to arouse the patriots of America by putting all idle land to work, to teach citizens how to farm, and to educate citizens on how to conserve food by canning and drying all food they could use while fresh (Stebbins, 1920). This is when the idea of the city farmer came into being. The federal government, along with state and local government, supported the national goal of food production by altering labor laws and educational codes to facilitate youth gardening efforts. The United States Garden Army was created to involve youth as vital workers in achieving these goals during wartime: "Every boy and every girl…should be a producer…Production is the first principle in education. The growing of plants and animals should therefore become an integral part of the school program" (p. 3).

Victory Gardens. Civilians in the United States, United Kingdom, Canada, and Germany indirectly supported the war effort during World War I and World War II by planting Victory

Gardens; a program organized by Charles Lathrop Pack in 1917 (Pack, 1919). Vegetable, fruit, and herb gardens were planted around private homes and in public parks. Victory Gardens narrowed the demand for food brought on by the destruction of crops and the lost farmers who were recruited for the military (Eyle, 1994). The campaign was successful with over five million gardens and over one billion dollars channeled to the war effort in food and associated transportation costs (Pack, 1919).

During the Great Depression, Victory Gardens provided a means for the unemployed to grow their own food (Gaylie, 2011). During this time, private, state and local agencies provided individuals with garden plots and employment. In 1934 alone, more than 23 million households participated in various garden programs and harvested produce valued at 36 million dollars (Gaylie, 2011).

During World War II, many of America's canned foods were sent to feed troops and civilians in Europe, so canned fruits and vegetables were less readily available. Consequently, many Americans began planting Victory Gardens in their backyards, which produced some 40% of America's food (Obama, 2012). In an attempt to encourage these efforts, First Lady Eleanor Roosevelt decided to plant her own victory garden at the White House. However, her Victory Garden appears to have been more symbolic; as no one knows what became of the food that was planted there. Prior to this, First Lady Edith Roosevelt, Theodore's wife planted a colonial style garden in the White House. "Two presidents later, First Lady Ellen Wilson replaced Edith's garden with the rectangular rose garden that remains there today" (p. 26).

The Victory Garden campaign during World War II encouraged people to grow food for personal consumption, recreation and to improve morale (Pollan, 2008). At this time, the

Secretary of Agriculture established a national goal for increasing the number of gardens (Lawson, 2005). By 1944, between "18 and 20 million families had a Victory Garden that collectively provided 40% of the total American vegetable supply'' (p. 171). Americans increased their Victory Gardens to about 20 million with national produce close to 40% of all vegetable produce (Pollan, 2008).

During World War II, Chicago led the nation in growing Victory Gardens (Obama, 2012). "The city had 1,500 community gardens and more than 250,000 home gardens under cultivation" (p. 13). Michelle Obama's family had a plot in a local Victory Garden. On the corner of an alley near their home, a vacant lot had been turned into plots for each family in the neighborhood, and her mother used to accompany Michelle Obama's grandmother to tend it. "They grew corn, tomatoes, green beans, peas, and spinach from seed packets" (p. 13). By the time Michelle Obama was born, nearly all the Victory Gardens were gone and Americans were mostly eating from supermarkets. However, there is a World War II Victory Garden that still blooms in Chicago today.

Rebirth of the garden movement. A few remaining Victory Gardens gave rise to the rebirth of community gardening in the 1970s (McKelvey, 2011). Victory Gardens thrived during World War II, but after the war, shifts in industry and population led to a deteriorating quality of life in inner city neighborhoods. As a result, people began to create urban community gardens and used them as rallying points for neighborhood activism in the 1970s.

The rebirth of community gardening was a response to urban abandonment, rising inflation, environmental concerns and a desire to build neighborly connections (McKelvey, 2011). Citywide organizations assisted people with acquiring land, constructing gardens and

developing educational programming. Local residents, facing a myriad of urban problems, used gardens to rebuild neighborhoods and expand green spaces. Although common themes of food production, income generation, recreation, education and beautification still provided a strong rationale for gardening, a new focus was placed on rebuilding social networks and the infrastructure of blighted urban communities. By the mid-1990s, over one million individuals were involved in more than 15,000 community gardens throughout the US (Okvat & Zatura, 2011).

Community gardens in the 21st century. Urban gardening and farming is currently experiencing a renaissance in North America (Gaylie, 2011). Significant amounts of food are cultivated by entrepreneurial producers, community gardeners, backyard gardeners, and even food banks. Community gardens today grow in vacant lots, parks, greenhouses, roof-tops, balconies, window sills, ponds, rivers, and estuaries. The potential to expand urban production is enormous. One third of the two million farms in the United States alone are located within metropolitan areas, and produce 35% of U.S. vegetables, fruit, livestock, poultry, and fish (Bellows, Brown, & Smit, 2005).

As mentioned earlier, First Lady Michele Obama planted a Kitchen Garden on the White House lawn to raise awareness about healthy food. Michelle Obama states:

> Community gardens can help solve the problems of hunger and food insecurity. With our garden, we have been able to show kids and adults that quality food isn't just important for those can afford to eat at fancy restaurants. It is important part of each of our lives no matter who we are and where we come from. (Obama, 2010)

In Obama's hometown of Chicago, the city is reinventing its 165 year old motto "City in a Garden," by launching an impressive campaign to preserve open space and to recreate wildlife habitat, greenways, stream corridors, and other natural land; thereby adding to the city's existing 7300 acres of parklands (Louv, 2008). Chicago Mayor Daley wants to make Chicago the "greenest" city in the nation. Inspired by rooftop gardens in Germany, Daley insisted that the new, 30,000 square foot roof of city hall be designed as a rooftop garden to help insulate the building, absorb excess storm water, help prevent sewer flooding, and act as a giant air purifier; more than 20,000 plants representing 150 different species grow in the garden (Louv, 2008).

In 2009, former San Francisco Mayor Gavin Newsom also planted an edible, organic Victory Garden on the lawn of city hall. An urban-rural roundtable of food experts from around California was convened by Newsom with the goal of finding ways to get more of the food grown on farms within 200 miles of San Francisco onto the plates of city residents, especially those who depend on government meals (Knight, 2009). The idea is to decrease the need to import food, reconnect people to homegrown food rather than processed food, and to provide more options in neighborhoods. Mayor Newsom said in a statement:

> I want to continue to challenge those cynics that just say that this is some elitist movement out there in the West Coast of the United States. It's about our suburban areas being connected to our rural areas, and being connected to our urban areas. This is an urban setting, a dense urban environment, one of the densest urban centers in America, yet here we are planting gardens. (Cheema, 2008, p. 7)

Newsom ordered all city departments to conduct an audit of unused land - including empty lots, rooftops, windowsills and median strips - that could be turned into community

gardens or farms that could benefit residents, either by working at them or purchasing the fresh produce (Knight, 2009). Food vendors that contract with the city must offer healthy and sustainable food. All vending machines on city property must also offer healthy options, and farmers' markets must begin accepting food stamps.

Garden Benefits

The benefits of starting a community garden are numerous. According to Larson, Hancheck, and Vollmar (2005), over 88% of Americans feel that trees and flowers in a city are important beyond their beauty. Urban community gardens in particular, respond to social, health, and environmental justice challenges in practical ways. When a gardener produces food according to the laws of nature, he or she is producing healthy food, tasty food, diverse food, delicious food, nutritious food; food that is beneficial to the eater (Shiva, March 2011).

Health benefits of gardening. There are many health benefits associated with working in the garden. For example, gardening exercise counteracts the physical passivity associated with the obesity epidemic (Bellows et al., 2008). According to the *American Journal of Preventive Medicine*, the creation of gardens enhanced access to places for physical activity, which produced a 50% increase in frequency of physical activity in addition to a 5% median increase in aerobic capacity, reduced body fat, weight loss, improved flexibility and an increase in perceived energy (Clark, 2011).

For example, trimming shrubs with manual clippers burns 182 calories every half-hour. Raking leaves burns 160 calories every half-hour (Vanderlinden, 2007). There is evidence for the nutritional and physical activity benefits of community gardening as well. Participation in a community garden may promote health and prevent disease, especially for people in low

socioeconomic status urban communities who have an increased incidence of chronic diseases (Okvat & Zatura, 2011).

Further, eating locally produced food reduces asthma rates, because children are able to consume manageable amounts of local pollen and develop immunities (Clark, 2011). Increasing the consumption of fresh local produce is one of the best ways to potentially address childhood lead poisoning as well as lessen their exposure to chemical fertilizers and pesticides.

In accordance, the Wellness Garden Program at The Glacier Hills Retirement Community promotes the health and well-being of older adults by providing residents an opportunity to garden (Slavens, 2007). An anecdotal study of this garden has resulted in positive health-related outcomes including strengthened social networks, reduced stress, and improved mood state.

Further, organically grown vegetables have been proven to have higher concentrations of nutrients. Rutgers University tested produce from the grocery store (typically grown using conventional farming methods) against organically grown produce. The organic produce contained much higher amounts of iron, magnesium, potassium, and calcium. For example, regular spinach had only 3% of the iron found in organic spinach. The discrepancy between organic and conventional tomatoes was larger. Only a tiny fraction of the iron in an organic tomato was found in the conventional one (Vanderlinden, 2007). Antioxidant levels in organically grown corn were almost 60% higher than in conventionally grown corn. Organically grown blackberries had a 50% advantage over conventionally grown blackberries and strawberries grown organically had 19% more antioxidants than grown conventionally (Vanderlinden, 2007).

These health benefits also help to fight against American obesity as outlined by the White House. According to First Lady Obama:

> We have seen the effects on how our kids feel, and on how they feel about themselves, and we all know the risks to their health and to our economy. We spend billions of dollars each year treating obesity related conditions like heart disease, diabetes, and cancer. (Obama, 2010)

Gardens and empowerment. Working in a garden can be an emancipating practice in social justice. Community gardening can empower disadvantaged people by enhancing their physical health, mental health, and overall well-being (Okvat & Zatura, 2011). Primarily, community gardens provide low-income families, people who do not own land, an opportunity to produce nutritious food (Clark, 2011). The effort to create and protect community gardens themselves enables grassroots community activism, environmental activism, and inspires spirituality and community (Okvat & Zatura, 2011).

Gardens and social interaction. Gardens link different people throughout the city including youth, elders, and diverse racial, ethnic, and socioeconomic groups (Bellows et al., 2005). Community gardens provide an opportunity for people of different cultures to interact socially in urban settings and to develop friendships (Okvat & Zatura, 2011). The organizing that community gardens encourages is critical during tough economic periods, because in times of economic downturn or worse, community organization can stimulate cooperation and local self-reliance, at little or no cost, thus protecting the community from outside adversity (Okvat & Zatura, 2011).

Gardens and crime reduction. Urban gardens are positively correlated with crime reduction, the reduction of trash-dumping, the reduction of juvenile delinquency, the prevention of fires, the reduction in violent deaths, and the prevention of mental illness (Bellows et al., 2005). Landscape design and proper maintenance play a significant role in perceived security of a location; acting as a deterrent to crime (Larson et al., 2011). The ability to experience urban green space has been linked to fewer incidents of graffiti and reductions in domestic violence (Okvat & Zatura, 2011). Further, crime levels around greener
building surroundings correlates to fewer crimes being reported, including both property crimes and violent crimes.

Psychological benefits of gardening. In 1993, Rachel Kaplan conducted research with ninety six gardeners on the psychological benefits of community gardening (Kaplan, 1993, as cited in Okvat & Zatura, 2011). Through these interviews and questionnaires, she found that above the tangible benefits (e.g., cutting food expenses) and primary garden experiences (e.g., desire to be outside or to see things grow), people rated gardening most highly as a valuable way to spend time, relax, and feel a sense of accomplishment.

Further, 40% of Americans find that being around plants makes them feel calm and more relaxed. A rigorous retrospective study of 23 matched pairs of patients (65% of which were female) recovering from surgery with a view from their hospital window of either a deciduous tree or of a brick wall, showed that those with the tree view experienced less negative effects, used less pain medication, and had shorter postoperative stays (Ulrich 1984).

The effects of community gardening on mood and stress were also examined in a program evaluation of California domestic violence shelters' community gardening programs

(Okvat & Zatura, 2011). Fifteen hundred program participants indicated that gardening was a motivational factor. It soothed adjustment to the shelter, it relieved stress, it absorbed negativity and it provided a peaceful retreat. This study also showed that producing food provided empowerment, a connection to cultural heritage, and was a cross-cultural unifier at the violence shelters. The study concluded that being near nature results in less perceived job pressure and job stress, fewer ailments and headaches, it produced greater personal satisfaction, and it was a strong positive factor in creating enthusiasm towards work.

Today, researchers are discovering ways to trigger our natural production of happy chemicals by getting our fingers dirty and harvesting our own food (Francis, 2010). Scientists from the United Kingdom suggest that a type of friendly bacteria found in soil may affect the brain in a similar way to antidepressants and can possibly alleviate depression. This soil bacterium can also boost the body's immune system (Lowry et al., 2007). Getting one's hands dirty in the garden can increase serotonin levels, a natural anti-depressant that strengthens the immune system (Francis, 2010).

Gardens and climate change. Local gardening conserves resources and combats climate change by shortening the commodity chain, saving on fuel-demanding transportation and packaging (Clark, 2011). Gardening assists in the effort to stabilize climate change through both direct pathways (greenhouse gas) and indirect pathways, like urban lifestyle change and education (Okvat & Zatura, 2011). One direct pathway is carbon sequestration, which entails removal of existing carbon from the atmosphere and has been called a reverse greenhouse effect. Plants take in carbon dioxide and separate the carbon and oxygen. The oxygen is released while

carbon is captured (sequestered) in the soil, enhancing soil fertility and reducing atmospheric carbon.

Roughly estimating, over the past 10 years of the estimated 10,000 community gardens in the US, have sequestered 190,000 tons of carbon, offsetting about one year's worth of carbon emissions for 30,000 Americans (Okvat & Zatura, 2011). There would be over 10 million gardens in America if we duplicated the success of the Victory Garden movement, which would sequester almost 200 million tons of carbon, offsetting one years' worth of emissions for over 30 million Americans, about 11% of the US population.

Gardens in American Schools

In 1910, it is estimated that there were 80,000 school gardens in the United States (Pack, 1919). By 1918, every state in America and province in Canada promoted school gardens as part of growing food for the war effort. During World War 1, as stated earlier, the American government (federal government, and state and local government) supported the national goal of food production through altering labor laws and educational codes to facilitate youth gardening efforts during the early 20th century (Stebbins, 1920).

The federal government engaged in a concerted effort to incorporate agricultural education and food production into the public school curriculum through a Bureau of Education program called the United States School Garden Army (McKelvey, 2011). According to the United States School Garden Army, several million children enlisted in the program, 50,000 teachers received curriculum materials, and several thousand volunteers helped lead or assist garden projects. During this time, President Woodrow Wilson likened the United States Garden

Army to the American Armed Forces fighting over in Europe, stating that: “Gardening is just as real and patriotic an effort as the building of ships or the firing of cannon” (McKelvey, 2011).

After World War II, school gardens declined as school land previously used for gardens was mainly replaced by athletic fields (Gaylie, 2011). However, in the 1960s and 1970s, school gardens rose in popularity again, in part due to different liberal social movements.

Benefits of school gardens. School gardens offer practical ways to incorporate sustainability, and provide opportunities for students to explore subjects learned in the classroom in hands-on ways (Reeves & Emeagwali, 2010). Spending time outside, exploring in the soil, watching seeds grow, and harvesting the bounty can be enjoyable and memorable ways for students to spend their time (California School Garden Network, 2011). There are simple ways for teachers to get children excited about growing food. For example, teachers can plant seeds that mature quickly and are large enough to for children to handle easily (Louv, 2008). Vegetables are a good choice for children because they germinate quickly and can be eaten when mature. Activities like this also reestablish the migration paths of butterflies and hummingbirds; granting children the opportunity to participate in this migration.

Gardens and academic achievement. One of the strongest justifications for nutrition education, nutrition programs, and nutrition services in schools is the effect on students’ cognitive performance and their educational achievement. The literature not only supports the role of environment-based education in academic achievement, but also finds that nutrition education and nutrition programs that are linked to school gardens improve academic achievement (Gaylie, 2011). Gardens specifically have demonstrated: “environmentally-based educational programs can have a beneficial impact on performance on standardized achievement

tests, as well as attention and enthusiasm for learning" (Graham, Beall, Lussier, McLaughlin, & Zidenberg-Cherr, 2005, p. 147). School gardens hold great promise for educating our kids about food production and nutrition and reinforce pride in growing and serving vegetables that grew through their own effort, according to the United States Drug Administration Secretary Tom Vilsack (Clark, 2011).

The evidence is positive in the ways school gardens contribute to students' academic achievement and to their well-being. Yet, schools are not getting all the gardening resources they need. A study that interviewed 4,000 principals on the use of their school gardens noted a "strong need for curriculum materials, teacher training, funding, and nutritional knowledge in creating school gardens" (Gaylie, 2009, p. 17).

Schools gardens as community building. Across the nation, teachers, students, families, and communities are engaging in community building and social reconstruction by producing food in school gardens (Richardson, 2011). Accordingly, gardens foster school, family, and community collaboration. In order to create and maintain a school garden, parents and volunteers from the immediate neighborhood surrounding the school must be recruited and managed. Community building is essential to school gardens because work is needed beyond the academic calendar. The school garden relies on teacher collaboration and on the funds of knowledge from inside and outside of the school (Richardson, 2011).

School gardens and values. Gardens foster a different set of values that are especially important to our youth (Martusewisz, 2005). Gardening counteracts the cultural effects of larger industrialized societies and promotes a shift in values (Gaylie, 2011). "Co-operation, learning how to nurture natural processes, acquiring the knowledge and skills that can be used to achieve

greater self-sufficiency, developing good eating habits that contrast with the diet of industrially prepared food" are all gardening benefits for young people (Martusewisz, 2006, p. 53). The use of gardens can also facilitate civic mindedness and environmental stewardship (Richardson, 2011).

Pedagogical foundations of school gardens. Gardens have played a central role in the larger history of teaching and learning. As educators build campus gardens, and develop their own curricula and goals around these unique spaces, a historical and critical understanding of the deeper roots of school gardens is necessary (Gaylie, 2011). The earliest structured pedagogical foundations of gardening can be found in the outdoor learning philosophies of Jean-Jacques Rousseau and the experiential education philosophies of John Dewey (1902). School gardens flourished in Europe and Australia during the early 1900's (Gaylie, 2011). These early school gardens promoted the ideals of progressive education and traditional notions of stewardship (Gaylie, 2011).

Recent California school garden initiatives. In recent years, California State Superintendent of Schools, Delaine Eastin began a state-wide program called "A Garden in Every School." Eastin stated: "I had witnessed the transformation that occurs with students and teachers as they worked in their school gardens" (California Department of Education, 2007). Between 1995 and 2002 school gardens in California increased by 3,000 and their numbers continue to grow (Gaylie, 2011). Eastin's "A Garden in Every School" initiative was based on the following principles:

> Gardens can create opportunities for children to discover fresh food, make healthier food choices and become better nourished. Gardens offer dynamic settings in which to

> integrate every discipline, including science, math, language arts, history and social studies. Young people can experience deeper understandings of natural system and become better stewards of the earth. School garden projects nurture community spirit and provide numerous opportunities to build bridges among students, school staff, families, local businesses, and community-based organizations. Links with school gardens, school food service programs, and local farms can ensure a fresh nutritious diet for children, while teaching about sustainable food systems. (Gaylie, 2011, p. 27)

The Edible Schoolyard. Alice Waters is the founder and owner of the critically acclaimed and world-renowned *Chez Panisse* restaurant in Berkeley, California (Flanagan, 2011). As a master chef, Waters believes that cooking must be based on providing healthy nutrition from the finest and freshest seasonal ingredients that are produced sustainably and locally. In 1995, Waters worked closely with then California Superintendent of Public Instruction, Delaine Eastin Waters, in order to create the "Edible Schoolyard" at Berkeley's Martin Luther King Jr. Middle School. The Edible Schoolyard program was first conceived when Waters noticed a barren lot next to the Martin Luther King Jr. Middle School. With strong support from the Martin Luther King Jr. Middle School principal, Waters offered to help build a one-acre school garden, an adjacent functional kitchen, and a school-wide complimentary cooking and gardening curriculum (Flanagan, 2011).

Every classroom at Martin Luther King, Jr. Middle School integrates gardening, cooking and nutritious school lunches into an eco-gastronomic curriculum. This curriculum integrates the entire school faculty; as teachers tie the garden into everything from biology to history to math (Richardson, 2011). The curriculum provides students with experience-based learning that

emphasizes the pleasure of meaningful work, personal responsibility, the need for nutritious, sustainably raised, and sensually stimulating food. (Gaylie, 2011).

California legislation and school gardens. Some Californians advocated for legislation that makes gardening and nutrition education a part of the curriculum for every California student (Hayden-Smith, 2006). A healthy food system is publicly recognized as vital to the well-being of families and communities of California (Hayden-Smith, 2006). In recognition of the educational and health benefits of school gardens, the California Department of Education. headed by Eastin called for "A Garden in Every School" the same year that the Edible Schoolyard began in 1995 (Flanagan, 2011).

Together, Waters and Eastin helped spark a large movement. By 2002, 2,000 of the 9,000 public schools in California had a garden, and by 2008 that number had risen to nearly 4,000 (Flanagan, 2011). Today, there are more than 500 gardens in The Los Angeles Unified School District (Richardson, 2011). However, due to various personnel, funding and other challenges, only 13% of California's schools report operating functional school gardens on their campus (Graham et al., 2005).

Subsequently, California's Governor and Legislature enacted several bills that promoted and supported instructional school gardens:

1) Assembly Bill 1014, Instructional School Gardens (1999) – establishes the instructional school garden program.
2) Senate Bill 19, The Pupil Health, Nutrition, and Achievement Act (2001) – identifies school gardens as one way to increase student preferences for fresh fruits and vegetables.

3) Assembly Bill 1634, Nutrition Education (2002) – further supports school gardens through identifying best practices and supporting a grant program.
4) Assembly Bill 1535, California Instructional School Garden Program (2006) – authorizes the CDE to award 15 million dollars for grants to promote, develop, and sustain instructional school gardens. (California Department of Education, 2007)

Maria Shriver, the former First Lady of California, is a strong supporter of school gardens and urges schools to use the gardens across all academic disciplines (Flanagan, 2011). In 2007, Shriver championed the California Instructional School Garden Program. This program offered 15 million dollars in non-competitive, non-matching grant funds for school districts, county offices of education and charter schools who were interested in starting or sustaining a school garden program (California Department of Education, 2007). Grant funds were allocated for garden equipment, garden supplies and teacher/school garden coordinator professional development. The goal of this funding was to teach children to make healthier food choices, participate more successfully in their education experiences and develop a deeper appreciation of their community. Shriver stated that:

> I have seen, first hand, how school gardens have positively transformed students, schools and communities. Gardens are a wonderful resource for our schools and our children. I believe in the life lessons they teach and the lives they touch… every school and community should have one. (California Department of Education, 2007)

The California Department of Education adopted sections 9000-9004 that expand the number of educational gardens and "garden-salad-bars" in California public schools by offering startup or expansion grants, implementing garden enhanced nutrition education, and training and

resources to the grantees (California Department of Education, 2007). The California Department of Education even developed a toolkit called "A Child's Garden of Standards." This toolkit assists educators in linking school garden activities with the state's educational standards (California Department of Education, 2007).

Gardens and Higher Education

If universities teach environmental sustainability, then it is imperative that universities model that behavior (Gaylie, 2011). For example, some colleges actualize sustainability initiatives by developing policies and plans to mitigate the impact of the carbon footprint of the campus. Other colleges introduce green thinking on campus by encouraging faculty to weave topics of sustainability into their academic curriculum. One way that a college can cultivate sustainability is through the development of on-campus gardens. University gardens transform learning through a combination of tangible practice and reflection. Teaching in a campus garden brings to light metaphors for learning that potentially transform teacher education:

> A campus garden, simply because of the fact that it is outside, on a horizontal plane, under a limitless sky, provides the three-dimensional conditions whereby students begin to think in different directions. In a garden, students think upwards, outwards and, ultimately, downwards to the earth. A garden encourages a close attention to detail, in the context of the universal. In a garden there is simply no room for single source, abstract ideas in larger-than-life versions of success. Knowledge in a garden arrives from a sense of place, as ideas from textbooks are tried and tested. A garden offers students a chance to honor nature while understanding that wildness is an integral part of that knowledge. (p. 3)

Through research, physical labor, and collaborative learning, a university garden can be built to be a model school garden (Gaylie, 2011). For example, North Carolina Central University, a historically black university, celebrated its Centennial year during 2010 with the construction of a Centennial Garden. This Centennial Garden is a swirling pattern of flowering trees, shrubs, a perennial garden, walkways, and serpentine brick walls that lead to a wooden arbor and fountain creating a space for quiet contemplation (Williams, 2010).

Another example of a university garden can be found at Lane College in Tennessee, which is particularly proud of its Student Learning Garden. Launched by students, this project produces organic produce used by the college's food services and culinary arts programs, from student-farmer direct to student chef (Spilde, 2009). Examples of on-campus gardens are sprouting all over the United States today. However, "exposing students to land stewardship in higher education is something still very new" (Gaylie, 2011, p. 8).

Gardening at Portland State University. During the early 1990s, Portland State University aligned its curricula, its undergraduate and graduate academic programs, its scholarship and research, and its collaborative community outreach to reflect its commitment to a newly-defined "urban mission that placed student learning and student experience at the core of the educational enterprise" (Williams & Bernstine 2002, p. 257). Under the broad umbrella of community-university partnerships, hundreds of students and dozens of faculty from a wide variety of disciplines participate in Portland metropolitan communities every academic quarter. The scope of service through partnerships varies widely; tutoring migrant children in public schools; community asset mapping, and watershed stewardship activities. Portland State University has emerged as a model for the urban research University of the 21st century.

Working within this campus movement, Dilafruz Williams, Professor of Educational Leadership and Policy at Portland State University, founded The Learning Garden, which is a model for successful community partnerships that have worked together to create a high-quality learning environment (Ashton, 2009). The Learning Garden, brings the community of Southeast Portland together, including Portland State University, the larger Portland school district, and the Portland community. The Learning Garden has helped children become engaged in learning about their bodies, health, science, and math. Students from almost twenty schools learn environmental stewardship and sustainable gardening in building school gardens (Ashton, 2009).

Monetary support for university gardens. Last year, the U.S. Department of Agriculture's Food and Nutrition Service provided one million dollars in grant money to Washington State University Extension's Garden Project. The Garden Project was in collaboration with Iowa State University, Cornell University in New York, and the University of Arkansas (Clark, 2011). The money was allocated for a pilot program aimed at addressing child obesity and improving nutrition for 2,800 low-income students attending 70 elementary schools throughout Iowa, New York, Washington and Arkansas. The garden engages these students in the physical activity involved in growing food, and they learn life skills, science and math (Clark, 2011). Researchers will assess both the process of implementing the gardens in these schools and the nutritional outcomes of the project (Clark, 2011).

Recently, in an effort to help local organizations fight hunger, a 250,000 dollar grant by the National Institute of Food and Agriculture was given to California State University, Monterey Bay's Service-Learning Institute to construct two new community gardens in Marina, California. The gardens serve as a green space to use as a living laboratory for organic

gardening, nutrition, and diet and health education that teach job-related skills. They'll also provide places where people can grow food for themselves and their families (Weiner, 2011). During the fall of 2011, students from Lighthouse University visited these gardens on *The College Garden Road Trip*, which is described in more detail in Chapter 4.

Some of the grant money enabled the university's service-learning students to develop and deliver nutrition education programs. One garden will be located at Sun Street Center's Pueblo del Mar, a transitional housing program for formerly homeless families with substance abuse issues. The families will learn about gardening and nutrition as part of their recovery. The second garden will be located at the Shoreline Workforce Development Service where participants in the culinary job-training program will learn about gardening and organics. This garden brings lush growth and vibrant color to a community that had lacked both by replacing urban neglect and illicit drug dealing with nutritious food and employment (Weiner, 2011).

Gardens and Lighthouse University

Lighthouse University also has a long history of respecting the worth of gardens, preserving them, and educating about their history.

The Tongva people. Long before the Jesuits established Lighthouse University, the Tongva Native American tribe occupied the grounds, dating back to 2500 BC. Over 2,800 archaeological sites have documented the existence of the Tongva Indians as indigenous to the Lighthouse community (Incayawar, 2010). In 1542, a European sailor named Cabrillo, arrived on the shores close to Lighthouse University. When he arrived, Cabrillo was greeted by Tongva natives who rowed plank canoes to meet him.

In 1994, the city officials where Lighthouse University is located recognized the Tongva Indians as the official indigenous people of their city. Historians believe that the Tongva culture and their territorial expansion peaked around 1200 AD (Incayawar, 2010).Throughout the centuries, Tongva tribes have lived in harmony with plants and the environment. Today, Tongva descendants are a small and vibrant society striving for national recognition and committed to sharing their traditional knowledge of medicinal plants. Lighthouse University honors the history of the Tongva people by displaying their cultural artifacts in the college library and in the main administration building.

The Tongva Memorial. In honor of the Tongva, the Lighthouse University mountainside is home to the Tongva Memorial. The Tongva Memorial is a pristine circular stone landmark surrounded by native and indigenous plants. The memorial is lined with immaculate "stepping-stones" that people can sit on. With clear views of the Pacific Ocean, this memorial offers students, staff, campus visitors, and faculty a place for peaceful contemplation.

Legend of Torovim. Carved into the stone of the Tongva Memorial at Lighthouse University is an image of four dolphins swimming around the earth called The Legend of Torovim. Next to the dolphin image reads an inscription that explains the legend. According to the legend at the Tongva Memorial, a Tongva Chieftain was being pursued by an enemy tribe somewhere in the area—where the mountains meet the sea. This Tongva Chieftain eventually was cornered between his captors and a cliff; similar to the cliff overlooking the ocean where the Tongva Memorial is situated.

Rather than submit to his captors, the Tongva Chieftain dove into the sea. As he fell, he transformed himself into a dolphin, or Torovim, meaning brother of the ocean. Torovim now

swims around the world, staying ever vigilant and alert to ensure the safety of the Tongva. The memorial's legend continues to read that:

> We are the caretakers of the land. It is our duty as caretakers to treat Mother Earth with kindness and respect. We must cultivate with care, always keeping in mind that Mother Earth is the giver of all life with her waters, rocks, trees, plants, and animals.

This sentiment, expressed first by the Tongva people, is one that should permeate the culture at Loyola Marymount University. Students must understand their place as caretakers of the land, and the gardening project researched in this dissertation can be part of that process.

Tongva Gardening at Pitzer College

Pitzer College has compiled a web based catalog of medical plants used by the Tongva people (Incayawar, 2010). Funded by the Strategic Initiative Fund of Pitzer College, and supported by a Faculty Fellowship grant from The John Randolph Haynes and Dora Haynes Foundation, this web-based catalog is part of six-person research team that contains forty-six medicinal plants, which is only representative of a small sampling of the vast knowledge of medicinal plants used by the Tongva (Snowiss, 2012). The team is still creating further work in order to gather the scope of the tribe's traditional knowledge of plant properties and uses. Each plant in the catalog is presented with its Tongva name.

Also part of the Pitzer's research team, is The Tongva Garden, which has been created over many years with the help of many people. A Tongva ethno botanist has provided expertise to the garden in regards to the selections of the plants (Snowiss, 2012). This Tongva ethno botanist conducted educational tours for Pitzer classes and has provided background information both on the Tongva people as well as their uses for these plants.

In 2005, the Pitzer Aesthetics Committee took this garden project on as its special project for the year. In addition Pitzer's Campus Life Committee has provided funding for the brochure and labels (Snowiss, 2012). To support academic programming, the garden hosts a program in Cross-Cultural Health and Healing. Environmental Studies faculty and Anthropology faculty have used these gardens for classes over the years and supported its development.

Understanding the Garden Initiative at Lighthouse University

The gardening initiative that is at the center of this research had its origins in the philosophical work of Dr. Bryant at Lighthouse University. His Environmental Studies minor launched discussions and enterprises that were integrated into the LIONS Garden project.

Environmental Virtue Ethics. Two years prior to this study, Dr. Bryant founded the first Environmental Studies minor within the College of Liberal Arts at Lighthouse University. During this time, Dr. Bryant taught classes within this minor that focused on sustainability, environmental justice, and environmental philosophy. For the purpose of fulfilling the academic component for the service-learning project under study, Dr. Bryant's course focused on the field of inquiry called environmental virtue ethics.

Environmental ethics is the attempt to understand the human relationship with the environment, including natural ecosystems, agricultural systems, urban ecosystems, and the individuals that populate and constitute those systems, determining the norms that should govern our interactions with the environment (Sandler & Cafaro, 2005). A particular account of the character dispositions that we ought to display in relationship to the environment is an environmental virtue ethic. The central ethical question that environmental virtue ethics asks is how should we live?

A complete environmental ethic provides an account of how people should interact with the natural environment and an account of the character dispositions that one ought to have regarding the natural environment. “Environmental virtue is instrumental to promoting proper action. The environmentally virtuous person—precisely because of his or her virtue—will be disposed both to recognize and do the right thing and to do it for the right reasons” (Sandler & Cafaro, 2005, p. 6). The environmental virtues are character traits that human beings possess regarding their interactions and relationships with the environment:

> The environmentally virtuous person is disposed to respond—both emotionally and through action—to the environment and the nonhuman individuals (whether inanimate, living, or conscious) that populate it in an excellent or fine way. (p. 3)

The instruction of this ethic ran simultaneously with the LIONS gardening initiative that is the focus of the research.

Vandana Shiva. Dr. Vandana Shiva is an environmental leader, philosopher, and activist (Shiva, 2012). She has written many books on agriculture, spirituality, and women's rights; she is also the founder of India's eco-feminist movement (Shiva & Null, 2008). In addition, Dr. Shiva is also one of India's most prestigious nuclear physicists. She has received numerous awards including: the Alternative Nobel Prize, UNEP's Global 500 Award, and the UN Earth Day International Award. In 1982, she founded the India-based Research Foundation for Science and Technology and Ecology (Shiva, 2012). In 1991, Shiva founded Friends of Navdanya; which is an organization dedicated to the restoration of organic farming and the preservation of indigenous knowledge and culture. Friends of Navdanya use organic farming in order to generate solutions to solve hunger and poverty in India.

Dr. Shiva's scholarship and philosophies are an integral component of this action research dissertation. Her visit to the Lighthouse University campus enabled this study's participants to interact with a worldwide figure and an expert on community gardening. I view the work of Vandana Shiva as the spiritual, moral, and scientific compass of the LIONS Garden. Attendance at her speech on campus was required, and written into the class syllabus.

The triple crisis. According to Dr. Shiva, this is the first time in history that the actions of one part of humanity have threatened the existence of all humans (Shiva, 2008). As a result of industrialized and globalized agricultural systems, a triple crisis has emerged: the food crisis, the climate crisis, and the oil crisis. Industrialized globalized agriculture is at the heart of this triple crisis. The food crisis is emerging as a result of the convergence of climate change, peak oil, and the impact of globalization on the rights of the poor to food and livelihood. Climate change through global warming threatens our human survival and peak oil means the end of the cheap oil that has fueled the globalization of consumerism.

According to Shiva (2008), the food crisis results from the combined impacts of the industrialization and globalization of agriculture. She believes that the same processes that have promised cheap food are the same systems that deny food to other people. She states that the price of food is rising worldwide, which is evidenced by the more than thirty countries that have witnessed food riots. Her critical analysis of the current dominant food system describes its reliance upon large fossil fuel amounts. She describes that:

> Industrialized, globalized agriculture is a recipe for eating oil. Oil is used for the chemical fertilizers that go to pollute the soil and water. Oil is used to displace small farmers with giant tractors and combine harvesters. Oil is used to industrially process food. Oil is used

> for the plastic in packaging. And finally, more and more oil is used to transport food farther and farther away from where it is produced. (Shiva, 2008, p. 96)

Long distance globalized food systems, like the industrial food-production they service, are contributing in a major way to greenhouse gas emissions. “Food miles, which measure the distance food travels from where it is produced to where it is consumed, have increased dramatically as a result of globalization” (Shiva, 2012, p. 170). Shiva recommends reducing food miles by eating bio-diverse, local and fresh foods, rather than increasing carbon pollution through the spread of corporate industrial farming, nonlocal food supplies, and processed and packaged food. Shiva recommends reducing carbon dioxide emissions by moving toward economic localization.

The impact of climate change on agricultural production, along with false solutions to climate change such as industrial biofuels, which divert food and land from the poor to the non-sustainable energy needs of the rich, further exacerbate the food crisis (Shiva, 2012). “We can and must respond creatively to the triple crisis and simultaneously overcome dehumanization, economic inequality, and ecological catastrophe” (p. 169). Of the three crises, the emerging food crisis poses the most immediate threat to the survival of poor people across the globe. The food crisis emerges from two historical processes, one long term—the industrialization of agriculture and the uprooting of peasants and family farmers from the land—and one more recent—the effects of globalization and trade liberalization of agriculture on food security and food sovereignty.

Food Sovereignty. Dr. Vandana Shiva advocates for food sovereignty, which is the democratic right to grow and consume healthy and affordable food (Shiva, 2012). Shiva (2012)

believes that food sovereignty is the sustenance of democracy because Mother Earth implicitly grants natural rights in order to produce the ongoing maintenance of all life and existence. However, the globalized agricultural system, motivated by super profits and the urge to control nature and society are endangering this concept of food sovereignty. Similar to the concept of human slavery, Shiva teaches that Monsanto, Dupont, Syngenta, Basf, and Dow, seek to enslave life on earth through patents and intellectual property rights through a term called seed slavery.

According to Shiva (2012), these five multinational corporations are able to control the seed supply through genetic engineering and patents. These five companies have created monopolies on seeds which ensure the enslavement of poor farmers who are forced into a never-ending debt trapping relationship. She believes that these companies are a threat to our democracy and freedom because they now control governments, media, and academic research (Confino, 2012). If this seed slavery continues to work in the benefit of corporations, the earth will witness the entire disappearance of biodiversity in farming.

Building a movement for seed freedom. Shiva (October 2011) believes that there are local practices that can halt the domination of the global seed supply. She recommends building a movement for seed freedom that will protect biodiversity and reclaim farmers' rights by intensifying community solidarity, synergy, and environmental awareness through organic gardening and seed saving (Shiva, 2012). She has also come to both the scientific and political realization that adopting biodiversity, saving open-pollinated seeds and practicing organic farming is the solution to every environmental problem we face, including climate change (Shiva & Null, 2008).

Shiva (2012) teaches that organic farming actually is better for energy savings. An analysis of energy in the U.S. food chain found that, on average, it takes ten calories of energy to produce one calorie of food: producing a net negative energy production system (Shiva, 2012). A shift to ecological, non-industrial agriculture from industrial agriculture leads to two-to sevenfold energy savings and 5 to 15% global fossil fuel emissions offset; this is accomplished through the sequestration of carbon in organically managed soils each year (Shiva, 2012).

Shiva's organization, Friends of Nadvanya, have created seed banks that generate local economies, providing basic living needs and occupations for people (Shiva &Null, 2008). The organic farming practices that the Friends of Navdanya promotes strengthen both food sovereignty and food and nutritional security, while simultaneously increasing farmers' incomes (Shiva &Null, 2008).

The Friends of Nadvanya organization has also raised awareness about the negative ecological and health impacts of genetically modified organisms (Shiva, 2012). According to Shiva, corporations like Monsanto want to deny consumers the "right to know" what they are eating. For over twenty years, the Friends of Nadvanya have campaigned against the commercialization of genetically modified crops and foods in India and have highlighted the dangerous effects of these crops and foods on our biodiversity, environment and health (Shiva, 2012). r. Shiva recommends that the public work to roll back unjust laws that make patents on seed legal (Shiva, 2012). Shiva believes in the intrinsic worth of all species, cultures and humans and, therefore, believes that laws should be designed to protect people, seed, and the knowledge of indigenous culture from being enslaved by other people (Shiva, 2012).

Creating an Earth democracy. Shiva teaches that humans need to practice earth democracy, which is a shared vision of an earth community where all people retain their democratic right to food, water, sanitary housing, and security of ecological space (Shiva, 2005). Earth's citizens must work together to protect these natural rights, granted by Mother Earth, through community rights and commons (Shiva, 2005).

In order for an earth democracy like this to exist, states and/or corporations must be banned by law from undermining natural rights (Shiva, October 2011). To this end, no one organization or individual person has the right to endanger the safety of anyone's habitat or to treat people with cruelty and violence (Shiva, 2005). Dr. Shiva teaches that people need to defend the democratic right to dissent. She believes that defending democracy is important because corporate globalization has insidiously created a new form of dictatorship designed to ultimately destroy democracy. Therefore, it is critical for ordinary people to stand up for democracy as our birthright and our duty (Shiva & Null, 2008). Shiva calls for democratic civil disobedience, reflecting the work of Gandhi who said that "as long as the superstition that unjust laws must be obeyed exists, so will slavery exist" (Shiva & Null, 2008).

CHAPTER 3

RESEARCH DESIGN AND METHOD

Introduction

Situated within a university garden and a college undergraduate course, this dissertation answers the question: How does an undergraduate service-learning experience embedded within an undergraduate philosophy course impact student perspectives about the environment? In this chapter, first I describe the action research methods used for gathering research. Next, I describe the local context of the research by describing the history of the university and its garden. Then, I include an abbreviated profile of the students, faculty, administrators, and guest speakers who were involved in the facilitation of this garden-based service-learning project. Next, I describe the researcher positionality followed by a description of the how the service-learning curriculum developed by illustrating the factors that allowed for this project to occur. I review the history and theories of action research; which is the primary research tool I employed in conducting this dissertation, and I will further illustrate how I collected and analyzed qualitative sources of data such as observations, semi-structured interviews, and student constructed projects. Finally, Chapter 3 concludes by illustrating the methodology of how the collected data will be presented in Chapter 4 and analyzed in Chapter 5.

This research is significant because I articulate claims to improve the immediate practice setting while exploring the theoretical boundaries of service-learning. Within this action research dissertation, the primary justification is the production of new knowledge that is used to create a university garden. Beyond the immediate setting, this dissertation represents an addition to the

scholarship by documenting various practices in service-learning, social and environmental justice, and biodiversity within a unique academic setting.

Action Research

All educators who conduct action research are interested in improving their own educational practice (Hendricks, 2009). "Action research is the study of action, often with the intent to lead to better action, but it is special in that it is carried out by the people directly responsible for the action" (Stake, 2010, p. 159). Traditional researchers follow a linear process in the development and implementation of their research projects (Atweh, Kemmis, & Weeks, 1998). This process often involves identifying the need for the study, developing a research plan and implementing it, and finally, reflecting on the successes and/or failures, and publishing the findings.

Action research projects commit to cyclic and iterative processes instead of the traditional linear process (Atweh et al., 1998). Therefore, I systematically planned, acted, observed, and reflected throughout the cycles of action research. As I moved into this research with pre-determined time frames, I realized that these methods had to be modified. Action research is not a linear product with a finite ending (Herr & Anderson, 2005). Because of its emergent design and cyclical revision of research questions, this action research dissertation required unique decisions about how to write the proposal, how to structure the dissertation, how to narrate the findings, and how to defend the final product. Because this study explored uncharted waters, I remained flexible and changed my research plans several times as the semester proceeded.

Throughout this service-learning and action research process, I investigated social structures, reflected on individual practice, and moved others and myself to action. Action

research stems from the assumptions, values, and approaches that ground traditional social science and university-based research (Herr & Anderson, 2005). "It is a methodology grounded in the values and culture of its participant-researchers and hence it is flexible to local agency" (Somekh & Zeichner, 2009, p. 6).

Historical Background of Action Research

Action research is empirical, interpretive, experimental, observational, interventionist and has a rich history in education (Hatch, 2002). Contemporary action research practices were cultivated by its origins and early development. Historically, action researchers were academics or professional researchers who involved research participants in their studies to a greater extent than traditional research (Herr & Anderson, 2005). According to O'Brien (2001), action research follows two research traditions: British and American. The British tradition views action research as a means of improving practice and the American tradition views action research as means to create social change (O'Brien, 2001).

Current action research practices were shaped by leading figures of the twentieth century (Somekh & Zeichner, 2009). Tracing its philosophical foundations from the work of John Dewey and Kurt Lewin, action research is often characterized as "learning by doing" (O'Brien, 2001). Although Dewey did not use this term action research himself, he believed that educators should involve themselves systematically in community problem-solving (O'Brien, 2001). Dewey also believed that democracy was a continuous and collective process of social improvement in which all levels of society were required to participate (Greenwood & Levin, 2007).

Kurt Lewin, a trained social psychologist, had a central interest in social change, and specifically questioned how to conceptualize social change and how to promote it (Greenwood &

Levin, 2007). He envisioned a process whereby one could construct an experiment with the aim of achieving a certain goal. And although accounts on this matter differ, Lewin is generally thought to be the person who coined the term action research.

There is clear evidence that the dominant models of action research have been adapted over time to suit different purposes in a wide variety of cultural and political contexts (Somekh & Zeichner, 2009). Through a democratic imperative, action research has shown to challenge oppression and nurture social justice. In some cases, action research has been used to challenge neo-liberal and neo-conservative forces that influence most social and economic sectors on earth, including the educational sector. The action research format aligned with my beliefs, values, and commitments to social change (Herr & Anderson, 2005).

Action Research in Practice

Noffke (2005) argued that all educators who conduct action research are interested in improving their own practice. Action-researchers contribute knowledge from local sites (Somekh & Zeichner, 2009). In this study, descriptions and theories are built within the practice of establishing an organic garden through an undergraduate service-learning project:

> A common feature of action research is the importance each demonstrates of working towards a resolution of the impetus for action with the reflective process of inquiry and knowledge generation, to generate new practices. (p. 5)

In this dissertation, I planned, acted, observed and reflected more carefully, more systematically, and more rigorously than in normal life (Kemmis & McTaggart, 2005). During the data collection process, I employed action research as a source of both improvement and knowledge. Collective understanding was collaboratively generated through actions, thought,

and planning (Greenwood & Levin, 2007). Chapter 5 specifically addresses the next stages of planning for the LIONS Garden.

Action research is participatory, democratic, socially responsive, and it takes place in context, not in a textbook (Gay et al., 2009). A primary purpose of action research is to generate useful knowledge that is practical to people in their everyday life (Reason & Bradbury, 2001). It is designed to increase the economic, political, psychological, and spiritual well-being of communities.

In this action research dissertation, I integrated three elements: action, research, and participation (Greenwood & Levin, 2007). I generated knowledge in order to take action, to promote social analysis, and to promote democratic social change. Action researchers work towards solving problems or coming to resolutions by using the reflective process of inquiry and knowledge generation in order to generate new practice (Somekh & Zeichner, 2009). I believed in the ability of the participating community to improve upon their own capacity to form a more sustainable and just environment (Greenwood & Levin, 2007). In the context of this action research dissertation, undergraduates were mobilized to action through a service-learning project that established an on-campus garden at Lighthouse University.

In this dissertation, the action research created a setting for educational transformation. Action research is fertile ground for educational reform because it provides the educators involved with a vehicle for actualizing appropriate change. "Generating research knowledge and improving social action simultaneously through action research challenges the normative values of two distinct ways of being – that of the scholar and the activist" (Somekh & Zeichner, 2009, p. 5).

Conducting action research. Educators can conduct action research alone, as part of a small collaborative group or in school faculty groups involving everyone in a particular school (Somekh & Zeichner, 2009). There are examples of action research studies that focus on a single research question while other action research focuses simultaneously on multiple research questions. In this dissertation, I conducted action research alone and used only one research question.

At the end of each week of service in the LIONS Garden, I internally reflected on the service-learning activities by writing in a private journal. I intended to bring together action and reflection in the pursuit of generating solutions to issues of pressing concern to the LIONS Garden (Reason & Bradbury 2001). I employed creativity in order to reflect on the history of gardening, the local episodes that occurred during the service-learning experience, and the environmental injustices that I believe the LIONS Garden can solve in the future. I utilized the action research framework because of its simplicity and infinite flexibility. Action research is used to improve upon the practice of service-learning, which searches for way to build upon a garden.

Qualitative Action Research Methods

The purpose of qualitative research is to understand and interpret phenomena as it unfolds in natural settings (Hendricks, 2009). In this dissertation research, I collected and analyzed data by utilizing a qualitative approach. Accordingly, the research design of this action research dissertation was emergent. "Typically, an action research proposal will more closely resemble one by a qualitative than a quantitative researcher, because as with qualitative research, the design is emergent" (Herr & Anderson, 2005, p. 70).

I employed qualitative action research methods because I was interested in the contextual variables and the ways in which these variables influenced the outcomes of this dissertation (Gay et al., 2009). In addition, the literature on action research supports the assertion that "qualitative data collection methods are more appropriately applied to action research problems than are quantitative methods and designs" (p. 492). Action research methods like keeping a research journal, participant observations, audio recordings, and interviews commonly fall within the qualitative research paradigm (Hendricks, 2009; O'Brien, 2001).

In action research all known social science methods are applicable when set in the appropriate context (Greenwood & Levin, 2007). Action research is a holistic approach to problem solving rather than a single method for collecting and analyzing data, allowing for several research tools to be employed (O'Brien, 2001). I conducted qualitative research by spending time in the LIONS Garden observing the service-learning experience, talking with students upon completion of the project, analyzing student-reflective artifacts, and reviewing documents generated from the members of Lighthouse University (Hendricks, 2009). Accordingly, I documented how this new university garden has developed and progressed as a result of the service-learning experience.

This dissertation pulls together many of the methods used in qualitative research which include: (a) understanding meaning of participants, events, and situations; (b) understanding the context with which participants act, and how this context influenced their actions; (c) identifying unanticipated phenomenon and influences; (d) and understanding the processes by which events and actions take place (Hendricks, 2009; Hatch 2002). Thus, through student reflections, researcher journaling, informal conversations, relationship building, participant observations, a

document review, analyzing photographs, and a literature review, the threads of data were woven into this action research dissertation.

In qualitative research, the researcher is the primary instrument for data collection and analysis (Merriam, 2002). I was in direct contact with research participants; therefore, my insights and experiences formed an important part of the investigation (Steinberg, Bringle & Williams, 2010). While the undergraduates worked in the garden, I probed into their experiences (Patton, 2002). I purposefully sampled specific documents (i.e., syllabi, student-constructed artifacts, and photographs) with the goal of obtaining information related to the purpose of this research (Steinberg, Bringle & Williams, 2010). Denzin and Lincoln (2001) contend, "…qualitative researchers study things in their natural setting, attempting to make sense of, or to interpret, phenomena in terms of meanings people bring to them" (p. 3).

Site Description

This study was conducted in the fall of 2011, in an urban area of California, on the campus of Lighthouse University. Lighthouse University is a mid-sized, private, co-educational, and faith-based university following the Jesuit order. More than 53% of the undergraduate student body is Caucasian, 21% of the undergraduates are of Hispanic descent, 9% of the undergraduates are of Asian descent, and 5% of the students are African American.

Community Context

The neighborhood surrounding the Lighthouse University campus is an upper-middle class community, with an average household income of over $80,000 per year. According to a 2010 neighborhood demographic report, over 81% of the community's residents achieved a college degree or higher. Seventy-one percent of community's residents are Caucasian, 13% of

the residents are of Hispanic descent, 9% of the residents are Asian, and 7% of the residents are African American.

Origins of the LIONS Garden

There is no written historical account of the LIONS Garden. To date, the progress of this project has been orally tracked. Therefore, this action research dissertation serves as the first, and at this time, the only formal historical documentation of the Lighthouse University LIONS Garden project.

The LIONS Garden Club. One year prior to this study, during the fall semester of 2010, a Lighthouse University student-run magazine, one that is widely distributed on campus and online, ran a feature on sustainability, which focused on students coming together to plant the seeds of change at Lighthouse University. The featured stories within this magazine focused on the unsung heroes on campus who were challenging their peers and administrators to do more to make Lighthouse a more sustainable college campus.

Forming a club. One group of unsung heroes that emerged from this local movement was a group of ten students who really wanted to have a garden on campus. The LIONS Garden Club was established in the fall of 2010 as a result of a grassroots convergence of various on-campus faculty groups including the Environmental Stewardship and Sustainability Committee (E2SC), the Campus Garden Committee, and two student social clubs including: ECO Students and the Human Rights Coalition.

Coming up with a name. The club came up with the LIONS Garden name because they wanted to link the new garden closely with the Lighthouse University culture. Within this thinking, the group members wanted to choose a name for the club that emulated the Lighthouse

University mascot, The Lion. The mascot idea was woven together with some selected themes about gardening, transforming the letters into the club name LIONS— which represents Lighthouse Inspirational Organic Native and Sustainability.

Vision of the LIONS Garden Club. The LIONS Garden Club members were excited about the opportunity to create a garden designed to increase environmental stewardship and benefit the greater Lighthouse community as a whole. The LIONS Garden Club was able to outline specific garden-based goals that were believed to embody Lighthouse's mission, which encourages learning, service, faith, and justice.

Operating within the university mission, the LIONS Garden Club envisioned the garden as a place to teach students about organic gardening and about the importance of growing your own food. Accordingly, the club members wanted to use the garden as an outdoor classroom for curricular learning, co-curricular learning, and independent student research. For example, club members envisioned hosting workshops that highlight the value of organic gardening, composting, and sustainable food preparation. The club members also desired to use the garden as a public space for dialogue and social interaction. It was hoped that these activities would develop cross-cultural and intergenerational social ties, foster community identity and spirit, and instill a deeper connection to the local community.

In addition, the LIONS Garden Club also envisioned the garden as a means to educate the greater Lighthouse community about selected social justice issues surrounding gardening. For example, the club members imagined using the garden as a platform to educate the campus community about the health hazards associated with consuming genetically modified food. They wanted to bring to light the environmental dangers of industrial farming and utilizing pesticides.

The club members also advocated against the common practice of paying low-wages to farmers. In addition, the club also hoped to share the garden's benefits by donating portions of each harvest to local food banks that were working to provide food security throughout the local community.

Leadership and club governance. Shortly after the club's initial formation, the LIONS Garden Club registered as an official Lighthouse University student club. Soon after the club's inception, the newly hired Lighthouse University Sustainability Manager, Dr. Randall, volunteered to become the faculty advisor to the club. Dr. Randall shared in the enthusiasm and the momentum behind the LIONS Garden Club's small social movement.

The club elected a board of student officers and collectively drafted a founding constitution: Within this founding constitution, the original purpose of the LIONS Garden Club read as follows:

> To develop thoughtful stewards of the environment inspired by the principles of the Lighthouse's mission statement – the education of the whole person, and men and women for others; to deepen the connection of each members mind, heart and spirit to the earth and to the community; to utilize bio-intensive garden methods that maximize crop yield within minimal space to assist individuals in need; and to perpetuate lifelong friendships through a commitment to sustainable agriculture.

This action research dissertation seeks to live out elements of the constitution in and through this service-learning project. Prior to the data collection period of this action research dissertation, the full vision of the LIONS Garden Club had not yet come to fruition. This action research

dissertation represents an attempt to build upon the social momentum established prior to the groundbreaking of the LIONS Garden.

Advocating for a Community Garden on Campus

During the past decade, prior to the formation of the LIONS Garden Club, there was one previous attempt to start a student-run organic garden. According to the legend, the students in charge of starting the garden lost momentum and gave up on the idea when the Jesuits denied their petition. The administration places high-importance on the beauty of the campus. Staffs of full-time groundskeepers work year-round to maintain the aesthetics at Lighthouse, and the idea of a student-run garden was thought to bring potential damage to the pristine landscape.

When the students first started the LIONS Garden in 2010, the Lighthouse University administration was hesitant about the idea. Next, when the time came for the LIONS Garden Club to request a place to plant the garden, the Lighthouse University administration was hesitant to grant them permission, mainly because they were cautious of relinquishing any aesthetic control of the campus to "at-times irresponsible" students.

Finally, after months of negotiation, the Jesuits were persuaded. The reason they changed their minds was that they liked the idea of students learning responsibility through the cultivation of their own individual plots. The administration agreed to give the LIONS Garden Club a space to plant, but wanted the LIONS Garden to be limited, controlled, and in one small area. There was an understanding between the club, Dr. Randall, and the administration that the overall theme of campus beautification would be reflected in the visual display of the LIONS Garden, meaning it had to be maintained to reflect a visually pleasing landscape aesthetic.

Physical location. After a short time for consideration, the administration allowed the students to install twenty-one raised plastic beds between a student dorm and one academic building named after Father Pereira, Pereira Hall. This space was hidden from the majority of the student body. All that previously inhabited the area was a large mason tree surrounded by grass. At the time, the location of the LIONS Garden was thought to be promising because it was placed next to Lighthouse's greenhouse and a composting research area.

Initial funding for the LIONS garden. The LIONS Garden Club was able to initially exist as a result of two separate financial donations**.** The LIONS Garden Club was first awarded a $5,000 grant from Lighthouse University. This award was a given to a group of students that came up with an idea for an outstanding service project. The club also secured a plant donation from a local neighborhood revitalization committee. This revitalization committee runs the greater community's weekly farmers market. They made the donation because they were convinced that the LIONS Garden had the potential to improve the social welfare of the community. These two grants helped the LIONS Garden Club to lay the foundation for what was hoped to be a flourishing garden on campus for years to come.

The Jesuits had not received any negative reports about the LIONS Garden during the time of the publication of this action research dissertation. Despite the garden's growing popularity and social presence on campus, The LIONS Garden has not received any significant financial support from Lighthouse University. In addition, the most recent alumni campaign did not feature The LIONS Garden as a program for alumni and donors to sponsor. However, student leaders hosting walking tours for perspective students and interested parents consistently used

The LIONS Garden as a selling point. These student leaders often refer parents and perspective students to the benefits of attending a school with a functioning student-run garden.

The LIONS Garden Club's original intention was to use the garden to do more than just show beauty. This thought breaks the paradigm established by the ornamental style that is dominant at Lighthouse, and many other colleges, which is used mainly as a tool to attract perspective students and to secure donations from alumni. During the time of the publication of this action research dissertation, many plants were flourishing, including: lettuce, strawberries, tomatoes, basil, lavender, sage, microgreens, beans, apples, lemons, limes and pomegranates.

In addition, the LIONS Garden Club also received garden supplies from Urban Farming, a Detroit-based non-profit organization dedicated to developing community gardens across the country. Urban Farming, is a non-profit organization sponsored by the Kraft Foods company. This joint effort of Urban Farming and Kraft Foods promotes the Home Farming Movement in connection with its Triscuit cracker brand. With the slogan "Plant a Seed, Grow a Movement," The Home Farming Movement leads a national movement to grow-your-own food by teaching people how to garden within urban landscapes.

In addition to receiving supplies from Urban Farming, the LIONS Garden Club partnered with Urban Farming to host an official garden groundbreaking ceremony. Urban Farming agreed to donate the soil and the initial plants of the LIONS Garden. In exchange for the donated soil and plants, Home Farming required a customized sign to be placed in the garden for one year. This sign carried with it a Triscuit cracker brand logo.

Groundbreaking. During the winter of 2011, the LIONS Garden Club first hosted a small Pollinator Planting Event in the LIONS Garden. The plants that made up this pollinator

section were generously donated by another local non-profit organization. A group of thirty-five volunteers, compromised of students, staff, faculty, and neighboring community members, got their hands dirty as they planted a variety of native flowering plants. The purpose of planting these plants was to attract pollinators like hummingbirds and butterflies to the LIONS Garden. Shortly after this pollinator event, hummingbirds and butterflies (in high populations) began to migrate towards the LIONS Garden. During the time of the publication of this action research dissertation, colorful hummingbirds and beautiful butterflies continue to thrive at the LIONS Garden.

During the spring of 2011, the club purchased twenty-one raised plastic beds; the beds were made from 100% recycled milk jugs. The LIONS Garden Club, along with student volunteers, prepared the space by tearing out existing ornamental plants and aerated the soil for planting. Next, they worked together to assemble the raised beds. Students who volunteered were encouraged to bring their own gloves and wear old clothes. Unbeknownst to most Lighthouse University students and faculty members, those who worked that day in the LIONS garden found joy in their labor. One undergraduate stated: “It's been a while since I've had that much fun playing in the dirt.”

Finally, on April 1st 2011, soil was delivered to the LIONS Garden. Eleven days later, the club partnered with Home Farming to host an official garden ground breaking ceremony. This groundbreaking ceremony was paired with a similar garden initiative in Tampa, FL. By using high-quality film equipment, the LIONS Garden and the garden in Tampa were beamed by satellite to a Jumbotron (or giant screen) set up at the headquarter-event of the day in Madison Square Park in mid-town Manhattan. There, New Yorkers on their lunch break and/or tourists

visiting New York City could see the groundbreaking of The LIONS Garden, as well as the groundbreaking in Tampa, on the Jumbotron. The headquarter event attracted city dwellers and mid-town Manhattan passersby by offering free seedlings and planting tips for their own urban gardens.

During the ceremony, the Home Farming production crew handed Dr. Randall a golden shovel. Along with Jesuits, prominent members of the university administration, and the broader community, Dr. Randall posed for the cameras with the golden shovel in hand. A Home Farming Sign with the Triscuit logo pasted on the side was staked into the ground. However, weeks after Home Farming had left; the plants that were planted into the ground during the groundbreaking ceremony were not growing.

Over the course of the whole day of the ground breaking ceremony, a range of visitors came through, including: 50 sixth graders from a local middle school, and approximately 150 faculty, staff, administrators and students. The groundbreaking ceremony included a dedication, a lunch for the volunteers, a golden shovel ceremony and a vegetable planting. The LIONS Garden Club also prompted a Jesuit to deliver a prayer and blessing for the garden.

Participant Selection

Thirty Lighthouse University undergraduate students, between the ages of 18-23, were the participants of this study. These students were observed while they participated in a garden-based service-learning experience, which was embedded into Dr. Bryant's fall 2011 Environmental Ethics course.

Participants in this action research dissertation were full-time undergraduate students at Lighthouse University. At the beginning of the class I asked for volunteers to be interviewed

after the data collection period. I selected the first five students who agreed to be interviewed. Those who were selected for an interview volunteered to be part of this study with no incentive for participating in the interview.

This service-learning project was designed to aid in the establishment of a new organic community garden on the campus of Lighthouse University. While the students worked to establish this garden, they were challenged to reflect on their experiences through structured reflective activities that the course professor designed. Students were aware of the service-learning component prior to registration and participated in garden-related service activities as part of the course's curricular requirements. Towards the conclusion of the data collection period, five students volunteered to be interviewed. Each interviewee was enrolled in and recruited from Dr. Bryant's fall 2011 environmental ethics course at Lighthouse University. After the initial phase of interviewing, I conducted a follow-up set of interviews with a new group of questions that emerged during the research process. During the follow up phase, I spoke with the Director of Sustainability, a Jesuit administrator, and members of the gardening crew.

Dr. Bryant required that all the 30 undergraduate students enrolled in his class participate in this service-learning project. Rather than choose participants randomly or systematically, action researchers choose "individuals around whom their everyday practices evolve" (Hendricks, 2009, p. 3). The participants who volunteered in this study were matriculated undergraduate students between the ages of 20 and 22. Precautions were taken to reduce risks to the participants, including the storage and disposal of data. All of the data, including the names of participants, their responses and consents, were password protected on my personal computer. Pseudonyms were granted to all the participants. Each participant's identity was protected.

Members of my doctoral committee and I were the only people granted access to the data (Hatch, 2002).

"Action research is a complex process and the goal is to have an upfront, clear working agreements and relationships as possible, early in the process" (Herr & Anderson, 2005, p. 74). Prior to any interviews and observations, I conducted all the necessary steps to ensure the protection of human subjects. Participants read and signed waivers informing them of their rights and the intent of the study. Participants were granted the right to opt out of the study at any time.

I assumed that all participants in this study, including myself, gave an honest depiction of what occurred while reflecting on the setting. However, participants may have been reluctant to provide honest responses throughout the action research process; therefore, I encouraged the participants to provide honest reflections and even negative responses were encouraged as long as the feedback was honest. Hendricks (2009) suggests that though it may be hard to receive negative feedback, the action researcher should keep in mind that any information the participants provide is useful for helping to understand how to improve action research practice.

With the exception of Andrew, all the participants in this study that I interviewed were female. Although this environmental ethics course was open to all academic levels, coincidentally, all the participants in this study were seniors in college. Below are the profiles of the five students who volunteered to be interviewed:

Nina

Nina is a senior at Lighthouse University majoring in Business. A native of Northern California, Nina is of Mexican and Salvadorian descent. Her parents come from a working-class background. Nina had never done gardening intentionally previous to this. She had volunteered

to “rake stuff and pull out leaves before,” and she infrequently gardened with her dad in the back yard. Nina also traveled on a student-initiated Urban Garden Road Trip and presented on her experiences on the trip at the Student Sustainability Symposium.

Wendy

Wendy is a senior at Lighthouse University majoring in Communications. A native of Illinois, Wendy is of Caucasian descent and her parents come from a wealthy background. She transferred to Lighthouse University after attending DePaul University for two years. Wendy is also a member of a sorority on campus. With the exception of planting flowers with her mom, Wendy never “really did gardening before.”

Andrew

Andrew is a senior at Lighthouse University majoring in Political Science. A native of San Diego, California, Andrew is of Caucasian descent. His parents come from a wealthy background. Andrew is a member of a service organization on campus that engages in service-related activities like volunteering for the Special Olympics. Andrew had no interest in gardening before the start of this service-learning project, adding, “nor did I have an appreciation for what gardening was, other than maybe an aesthetically pleasing appreciation.”

Stacy

Stacy is a senior at Lighthouse University majoring in Communications. A native of Hawaii, Stacy is of Pacific-Islander descent. Her parents come from a wealthy background. Stacy had done a little gardening at her home in Hawaii but none of her plants survived. While working in the LIONS Garden, Stacy made friends from her native island of Hawaii.

Karen

Karen is a senior at Lighthouse University majoring in Business. Karen is of Caucasian descent from a wealthy background. She is also a part-time resident advisor at Lighthouse University; coincidentally, the dormitory that she advises overlooks the LIONS Garden. Karen wants to get more of her students in her dorm involved in the garden. Karen has been involved with gardening for the "past ten years or so" because her dad was "really into gardening." She grew up with a garden in her backyard in Portland, Oregon. There, her family grows "flowers, fruits and vegetables."

Community Partner Profiles

During the semester, I facilitated service activities that were coordinated by community partners. By working closely with the course professor to design and coordinate the service activities, I mobilized members of the university, volunteers from the broader community, and local master gardeners to work side by side with the undergraduate students. As I began to understand the academic outcomes set by the professor, I explored the experiences of the undergraduates as they participated in the service-learning project.

Below, I list the roles of the key people who assisted in facilitating this LIONS Garden service-learning project. With the exception of Vandana Shiva, who is a world-renowned public figure, I used pseudonyms to protect the identity of the service-learning project partners. The disclosure of the identity of Vandana Shiva is necessary because her visit to Lighthouse University was a critical event within the service-learning project.

Mortimer

Mortimer is the head master gardener at the LIONS Garden and serves on a part-time basis. He is an employee of Lighthouse University. Mortimer is responsible for creating the crop

and plant vision for the garden. The students learned that Mortimer had been a vegetarian or vegan since he could walk and that he decided to become a gardener because he wanted to "grow food for his family." Mortimer also travels to people's homes in the neighboring community in order to set-up hand-made gardening beds, enabling people to grow their own food in their own backyards. Mortimer teaches the students gardening practices in permaculture; which integrates biodiversity and cooperation. Mortimer believed that investing into the LIONS Garden:

> Speaks to the university's level of commitment of growing their sustainability program. It's a learning process for everybody and I think that is what is so exciting about walking through this process. Every misstep that we make is a lesson.

Baron

Baron is an undergraduate student at Lighthouse University in charge of coordinating the service work conducted at the LIONS Garden. Baron handles the garden's day-to-day logistical operations by following the community garden expertise of Mortimer. Baron is an experienced gardener who, at the time of the study, was taking master gardening certification courses at a local high school close to the Lighthouse University campus. Baron is in his early thirties, which makes him approximately ten years older than the majority of the undergraduate student body at Lighthouse University. Baron desires to reacquaint students with the knowledge of food origin and production. He said, "Right now a lot of people who need food can't get it. And one of the best ways to get food is to grow it yourself."

Baron also made a presentation at the Student Sustainability Symposium. During the time of the LIONS Garden Club's inception, Baron said that he was taking a class called "World Religion and Ecology" offered at Lighthouse University. In that class, there was a service project

in which students were required to assist a local organization. Subsequently, Baron joined a community garden operated by a local church five blocks away from the Lighthouse University campus. While he was working there, Baron found out that students were starting a community garden at Lighthouse through the LIONS Garden Club. From there, Baron linked with the other Lighthouse group members and quickly emerged as one of the leaders of the LIONS Garden.

Dr. Randall

During the time of this study, Dr. Randall was the full-time Sustainability Coordinator and a part-time Philosophy professor at Lighthouse University. Dr. Randall was responsible for creating and maintaining the organizational structure of the LIONS Garden. In 2010, Lighthouse created a full-time staff position that was organized underneath the Facilities Department and hired the school's first sustainability director.

Prior to the groundbreaking ceremony of the LIONS Garden, Dr. Randall had made significant progress in greening the Lighthouse campus. With the help of student volunteers, Sodexo, the campus' food service provider, and an environmental science undergraduate student, Dr. Randall worked to improve the pre-consumer composting system. Dr. Randal led an effort to reduce energy use, increase the presence of reusable water bottles on campus, and create a map around the bikeable areas around Lighthouse. He developed a student Work-Study program and created a volunteer student program to accomplish these tasks.

Dr. Randall wanted to use the LIONS Garden as a space to host educational opportunities: "It's one thing to learn in the classroom, but when you get outside of the classroom and gets your hands dirty and engage in an open dialogue with people outdoors in a more experiential setting, people take learning to a deeper level." Dr. Randall believed that

people of all walks of life are disconnected from their food. “We don’t know what food looks like anymore. And we really need to return the roots of understanding where are food is grown, what it looks like, and connect with our food.”

Dr. Randall envisioned creating a model garden for the city and the wider community. He envisioned using the crops donated to local food banks, food pantries, and soup kitchens. He also wanted to host cooking demonstrations and healthful living demonstrations at Lighthouse so students and other community members could learn how to prepare the food grown in the LIONS Garden. Because the Jesuits on campus believed in social and environmental justice, Dr. Randall was able to use the idea of “Being stewards of the planet! What more could we be stewards of other than our own food?” Dr. Randall also involved his undergraduate sustainability course in participating in the Student Sustainability Symposium. Dr. Randall believed that, “California is one of the biggest agricultural states in the country. We are in a place in California where we need to take these issues seriously.”

Dr. Bryant

Dr. Bryant is a professor of philosophy at Lighthouse University and the founder of the environmental studies undergraduate major at Lighthouse. As part of the action research process, Dr. Bryant and I designed a service-learning project together that mobilized his fall 2011 environmental ethics course to work in the LIONS Garden. He was also the opening speaker at the Student Sustainability Symposium. Students describe Dr. Bryant’s teaching as “intensely passionate.” One student even claimed that Dr. Bryant’s environmental ethics class is the “best class I have taken at Lighthouse.” Dr. Bryant habitually challenged his students to commit to serving their environment through a change in their everyday relationship with the environment.

Dr. Stevens

Dr. Stevens is a professor of Urban Ecology at Lighthouse University, and holds the position of Presidential Professor. Dr. Stevens involved his undergraduate urban ecology course in participating during the Student Sustainability Symposium.

Dr. Krauss

Dr. Krauss is a professor of education at a university near the campus of Lighthouse University. Dr. Krauss performed a folk song honoring Dr. Shiva at a Peace Pole dedication.

Father Marvin

Father Marvin is a Catholic minister and the director of the Campus Ministry's social justice initiatives at Lighthouse University. Father Marvin prepared a prayer honoring Dr. Shiva at a Peace Pole dedication. He also helped create the LIONS Garden and facilitated a student-initiated Urban Garden Road Trip.

Vandana Shiva

Dr. Vandana Shiva is a world-renowned environmental activist and a well-respected physicist. She was the recipient of the 1993 Alternative Nobel Peace Prize (the Right Livelihood Award) and the Sydney Peace Prize. A tireless defender of the environment, Dr. Shiva has written over 500 scientific articles and books including *Earth Democracy: Justice, Sustainability, and Peace* (2005), *Water Wars: Privatization, Pollution, and Profit* (2002), *Staying Alive* (2010), and *Soil Not Oil* (2008). She brings a vital, passionate voice along with practical solutions to the most important environmental challenges of our times. A native of India, she traveled from her native land to Lighthouse University during the fall of 2011 to receive the Lighthouse University Bridge Builder Award; this award included a $10,000 prize.

Her visit to Lighthouse University was an animating force for the students in Dr. Bryant's Environmental Ethics class as well as in the LIONS Garden.

Researcher Positionality

I acted as a scholar and an activist in this role as action researcher (Somekh & Zeichner, 2009). Accordingly, I generated research (knowledge) and improved social action simultaneously. In action research, the researcher is a participant, which affects the outcomes of the study. As a result, as required in action research, my biases were made clear to the study's participants (Hendricks, 2009). Participants learned that I hold a professional interest for directing my efforts towards actualizing service-learning initiatives on campus. Participants learned that I hold an educational vision that places trust in the skills of people working together in a local setting.

I see myself as an independent problem solver who is not married to one theoretical orientation. Rather theories are only explored or employed that can be applied to the educational problem at present. I am an activist with a vision to use experiential education as a legitimate platform for community problem solving. By targeting specific social or environmental problems, I have found professional success in providing opportunities for K-12 students and college students through service-learning initiatives.

I am also an educational practitioner that pursues social and environmental justice beyond the charitable paradigm. Through a continuous process of innovation, activism, adaptation, and learning, I have spent the past five years integrating environmental education into hands-on service-learning programs. I believe that environmental education is the most important social justice challenge of our time because climate change and the destruction of our oceans are both

accelerating (Fullan, 2010). I have been awakened by the reality of climate change, reinforced by Vandana Shiva (2012), and this has inspired my passion for educating the community through service-learning projects that generate tangible solutions to pressing environmental problems.

My first experience with combining gardens and service-learning came in 2006. While I was a member of the AmeriCorps Teaching Fellowship called Citizen Schools, I created a service-learning project that connected Rutgers University undergraduates with impoverished Latino and Black students attending an underserved middle school close to Rutgers. I worked with the Rutgers University department of landscape architecture to create an internship program. This internship program granted college credits to undergraduates, majoring in landscape architecture, for teaching these middle school students how to design, construct, and operate their own urban children's garden equipped with a learning greenhouse. Upon project completion, I received the Rutgers School of Environmental and Biological Sciences Award for Excellence in Experiential Education.

I believe in the power of community gardening, because I witnessed firsthand the positive effects it brought to the undergraduates and middle school students that I worked with at Rutgers University. This led me to becoming an instrumental force in establishing a new community garden on the campus of Lighthouse University through voluntary membership in the LIONS Garden Club. As a voluntary LIONS Garden Club member, one is mandated to, in the words of a student: "speak for the garden and work for the garden."

Realizing that this new garden required the active involvement of more undergraduate students, I acted independently and decided to create a service-learning project embedded within Dr. Bryant's undergraduate course. "Action research usually starts with a practitioner realizing

things could be better and setting out to look carefully in the mirror" (Stake, 2010, p. 158). This action research dissertation was born when I approached Dr. Bryant with the idea of facilitating a service-learning project within his philosophy class. I first met Dr. Bryant, by chance, at a Lighthouse University environmental student conference two years prior to the start of this study and remained in contact with him throughout the duration of this study.

All educators who conduct action research are interested in improving their own educational practice (Hendricks, 2009). In my role within this service-learning project, I also found myself coaching, mentoring, cajoling, motivating, encouraging, and supporting the undergraduates as they worked in the LIONS Garden. I was exposed to varying levels of gardening expertise throughout the service-learning project. Often, I had little knowledge of the technical concepts being presented, which inspired me with a desire to want to learn more about gardening. Through modeling and learning, I continually pushed myself out of my comfort zone and tried my hand at gardening. Often, I felt clumsy and out of my element while working in the garden. Thus, I knew how some of the students felt, when I observed them in the garden.

Primarily, I attempted to create a new social space at Lighthouse University within the LIONS Garden. Throughout the duration of the service-learning experience, I was inspired to build a social support network for the LIONS Garden. I provided the students with strategies, information, practices, and social connections in the hopes of creating a more socially and environmentally just local society (Somekh & Zeichner, 2009). Although I am not a gardener, I believe in the capability of the LIONS garden to fulfill Lighthouse's mission of "creating men and women for others", which I believe to be a worthwhile cause in fulfilling.

As the action researcher, I attempted to motivate university educators to join in solidarity with teachers, students, and community members across the Lighthouse community. Much of the events within this dissertation occurred as a direct result of my persistence in attempting to unify people around a collaborative activity, gardening at the LIONS Garden.

Prior to this study, I engaged in many Lighthouse University service opportunities on campus. For example, I worked with an environmental group to clean up a hazardous site in the wetlands adjacent to Lighthouse. I also participated in building a house with Father Marvin in Mexico for poor people. In addition, I once took a low-income urban child on a paid "shopping spree" through a partnership between Lighthouse University and the Salvation Army. I have also volunteered with other organizations including The Ronald McDonald House and Head Start. I am of mixed-race descent with African-American and Caucasian roots that originated during the era of American slavery.

Planning the Service-Learning Component

During the fall of 2011, Dr. Bryant and I embedded a service-learning component within the undergraduate environmental virtue ethics course that he teaches. The course was held over sixteen weeks and the class met twice a week for three hours. This course was a rigorous course for students to navigate, with a substantial reading load and a challenging series of writing assignments. In addition, the course included a service-learning component that required non-traditional, out-of-class work in the LIONS Garden. This service-learning component of the course connected undergraduates with the members of the broader community to strengthen the new university garden.

These undergraduates worked to make an organic garden a real presence on the Lighthouse campus and throughout the broader community. The food harvested in the garden over the course of the semester was donated to the poor and shared between the undergraduates and the broader community. The semester culminated with a Peace Pole dedication to renowned activist Vandana Shiva. This event was followed by a Student Sustainability Symposium that showcased student creative work based on the service activities conducted over the course of the semester. All of these activities, the service, the dedication, and the Student Sustainability Symposium that showcased student creative work are all part of the action research conducted as part of this dissertation.

In May of the spring semester of 2011, Dr. Randall, Dr. Bryant, and I met in Dr. Bryant's office in order to integrate this garden-based service-learning component into Dr. Bryant's fall 2011 philosophy course. During this meeting, Dr. Bryant informed us that he wanted the students enrolled in this course to understand the variety of environmental challenges facing them, the ways in which they contribute to these problems, and ways they may contribute to solving them. Dr. Bryant also informed us that he would be designing the course so students could identify both the good and the bad in their own individual conduct in relationship to the environment, and to reflect on how one might make improvements both personally and globally. Thus, the course was intended to empower the students to become better people. By the end of the course, Dr. Bryant hoped that work in the LIONS Garden would push his students to carefully consider a myriad of answers to this perplexing question: "But what can I do (for myself, for my community, and for the environment)?"

During this same meeting, Dr. Randall informed Dr. Bryant and myself that Lighthouse University was planning to honor Dr. Vandana Shiva with the 2011 Bridge Builder Award during the fall semester on November 1st. Dr. Randall and Dr. Bryant, who were both familiar with the activist work of Dr. Shiva, became excited to structure the semester's culminating service-learning activities around her visit to campus.

In order to incorporate a student reflective component, we collectively decided that I would facilitate a Student Sustainability Symposium that would occur on-campus two days after the visit of Dr. Shiva, on November 3rd. The Student Sustainability Symposium was designed to offer a reflective forum for students to present a creative work to their peers. The creative work was a student-constructed project of their choice that reflected the service conducted over the course of the fall 2011 semester.

Dr. Randall pledged to involve his upcoming undergraduate sustainability course in presenting their creative work at the Student Sustainability Symposium. Following the meeting, Dr. Stevens also pledged to involve his upcoming undergraduate urban ecology course in presenting their creative work at the Student Sustainability Symposium. These professors: Dr. Bryant, Dr. Randall, and Dr. Stevens each issued extra-credit to the students who volunteered to present creative work at the Student Sustainability Symposium.

In total, Dr. Bryant required the students to attend the following two out-of-class events, at which attendance was mandatory and counted towards the students' final grade: November 1st for a Question and Answer Session/Peace Pole Dedication with Vandana Shiva and November 3rd for The Student Sustainability Symposium.

Although this Environmental Ethics course was offered through Lighthouse University's Philosophy department, the thirty students who enrolled in the course came from a variety of majors. Many students enrolled in Environmental Ethics because the course fulfilled a core ethics class. At Lighthouse University, each student was required to complete a core ethics class in order to graduate. However, Dr. Bryant, informed his students that:

> …It is true that you need a core ethics class to graduate but you don't need this one. You should really only take this class if you are enthusiastic about the idea of self-improvement and the role of the environment in your well-being. This class is not for everyone. Most of the work will be reflective rather than regurgitative. Successful students will be motivated learners--the sort of students who independently pursue ideas outside of class, think carefully about them, and engage others in discussion out of interest.

Dr. Bryant informed his students that participation in service was required, stating that the service-learning component of the course would consist of two elements: (1) the actual direct service work during the semester and (2) a creative work that reflected on service in light of the themes, concepts, and issues discussed in class. In regards to student grading, Dr. Bryant assigned 0% of the students' final grade for participating in direct service stating: "I'm not going to give you points toward your final grade for simply showing up on time and having a pulse." However, Dr. Bryant did assign 15% of the students' final grade for completing the creative work; which was to be displayed at the Student Sustainability Symposium.

Data Collection

After a few brainstorming sessions across the duration of the summer of 2011, Dr. Bryant and I decided that service hours would be offered at the LIONS Garden every Friday afternoon under the supervision of Baron. Baron was concerned that he would not have work in the garden available for students every Friday. However, he wanted to set aside a time on Fridays from twelve pm to two pm designated for student service. Many students indicated that they had class during this time; however students were not required to stay for the whole time. Students who only had an hour free, or half of an hour free, were still encouraged to come by. According to Baron, workdays were useful for "informing people what we are doing, what we have done, and what we still need to do so that students can be as involved as possible."

Dr. Bryant required each student to complete ten hours of work at the LIONS Garden, though as stated earlier, these hours did not constitute points towards their final grade. Also, toward the end of the semester, students were required to submit a creative work that incorporated an individual reflection on their service in light of the themes discussed in class or encountered through reading course materials. Dr. Bryant thought this cross-pollination would make both the work and the class more rewarding. The ranges of possible projects were extensive and included artistic works, the construction of web pages, the creation of short films, and different kinds of reflective writing. Students were required to present their projects in some form at the Student Sustainability Symposium, and therefore, accessible to other students in the class. Details of these class requirements were detailed in a syllabus that was sent electronically to students. A copy of the syllabus is included in Appendix A.

In order to hold students accountable to completing their ten hours of service, I suggested creating an online course management tool, or Blackboard, with the purpose of tracking student service hours and encouraging structured reflection. However, Dr. Bryant decided against the idea, citing that he feared students were already "given too much work." Dr. Bryant thought the students would be "overwhelmed if they had to log in to an online course management tool." However, without a system for tracking student service hours, I was unable to ensure that all thirty students completed at least ten hours of service each. Most students were self-motivated enough to show up on workdays. However, I did appear at Dr. Bryant's class in order to encourage and motivate a small percentage of students who had failed to appear at the LIONS Garden to complete their service requirements. Despite this complication, Dr. Bryant's class supplied the LIONS Garden with more than enough volunteers during the fall 2011 semester.

To assist with the facilitation of the service-learning project, I visited Dr. Bryant's class three times during the semester and made announcements to his students regarding the direct service schedule. In September of 2011, on the second class of the semester, I conducted an in class-presentation to Dr. Bryant's students. During this visit, I distributed safety tips (See Appendix B) and internal Lighthouse University service-learning contracts (See Appendix C). Students were required to sign and return these contracts to the Service Center on campus.

The LIONS Garden Social Network Page

During this visit to Dr. Bryant's class, I announced to the class that I created an online social network page called The LIONS Garden Social Network Page. This social network page was designed to assist in the facilitation of the direct service work. I invited the students from the environmental ethics course to join the page online. Every week, I posted announcements so

students would receive alerts and notifications of when service hours would be offered at the LIONS Garden.

When the course began in the fall of 2011, we had fifteen members on the garden's social network page. By winter, at the end of the course, the social network page had grown to fifty-nine members. Students often used this page to invite their friends that they knew outside of the environmental ethics class to garden workdays. Members of the LIONS Garden Club also utilized The LIONS Garden Social Network Page to post garden-related tips, to advertise the activities of like-minded student-organizations and student-initiatives on the Lighthouse University campus, and to advocate for healthy living through organic gardening.

Data Collection Timeline

I planned data collection by following Dr. Bryant's suggested academic course parameters. I constructed a *Researcher Data Collection Timeline* below that illustrates when and where I collected data, and how much time I approximately spent in the field collecting data:

Table 1

Researcher Data Collection Timeline

Data Source	Setting	Data Collection Period	Total Data Collected
Observation I	Direct Service in The LIONS Garden	5 workdays: Each workday lasted 2 hours	20 hours of field notes
Observation II	Vandana Shiva visits the campus of Lighthouse University	Event lasted 3 hours	3 hours of field notes
Observation III	Student Sustainability Symposium on the campus of Lighthouse University	Event lasted 2 hours	2 hours of field notes
Semi-Structured Interview	Researcher interviewed 5 students on the campus of Lighthouse University	Interview 1: 25 min. Interview 2: 35 min. Interview 3: 27 min. Interview 4: 40 min. Interview 5: 29 min.	2.5 hours of interview transcripts
Document Review	I. LIONS Garden Social Networking Website II. Lighthouse University Archives III. Lighthouse University Newspaper	Between 2010-2012	Analyzed 47 documents
Photograph	The LIONS Garden	Between 2010-2012	Analyzed 78 photographs
Researcher Journal	Researcher reflected privately on service-learning experiences	Entered 1 entry per week across 10 week period	10 Journal Entries

Observations

I planned each observation deliberately and recorded each observation systematically (Merriam, 1998). I engaged in persistent and prolonged observations during scheduled workdays (Lincoln and Guba, 1985). Students were observed while participating in a service-learning project that involved ten hours of actual gardening work. This service-learning project spanned across five workdays and over the course of one academic semester. I recorded important data accurately when critical events occurred (Maxwell, 1992). I observed students as they participated in garden-related service activities, I observed the Vandana Shiva Question and Answer event, The Peace Pole Dedication, and I observed the students when they presented their creative work at the Student Sustainability Symposium.

These observations were used in order to understand the experiences of the participants. I also wanted to capture the historical development of the LIONS Garden. By weaving together the research discussed in the literature review, the perspectives and insights from a sample of the undergraduates, along with the knowledge I gathered from local people and on-campus garden-related events, I generated recommendations that were designed to aid in the future planning process of the LIONS Garden. These observations also aided me in gathering informal feedback about the strengths and weaknesses of this service-learning project (Hendricks, 2009).

Because of the multiple roles of the researcher, I was not able to observe all the activities that occurred during the service-learning experience. Audio methods were employed to fill in important events that occurred in the field when I was unable to remember events (Hendricks, 2009). I obtained permission to audio from this study's participants and the appropriate

governing Institutional Review Board prior to the commencement of the service-learning activities.

Ethnographic Field Notes

I wrote ethnographic field notes for all of the collected observational data during the duration of the study (Emerson, Fretz, & Shaw, 1995). "Observers need to make a record of what they observe in the settings they are studying, and these records usually take the form of raw field notes that are written on the spot while the researcher is in the setting (Hatch, 2002, p. 77)." These field notes are organized throughout Chapter 4 and include detailed information about the implementation of all of the service-learning related activities (Hendricks, 2009). I specifically observed all service activities and transcribed ethnographic field notes describing each service activity that was completed. In total, I collected 66 pages of ethnographic field notes.

Observation schedule

The service activities lasted approximately two hours or one academic class period in length. Participants were not required by Dr. Bryant to attend every scheduled service activity. However, they were required to complete ten hours of service over the course of the semester. Below is the schedule of the Lighthouse garden service workdays that were observed in the fall academic semester of 2011:

1. October 7th from 12 p.m. to 2 p.m.
2. October 14th from 12 p.m. to 2 p.m.
3. October 21st from 12 p.m. to 2 p.m.
4. October 28st from 12 p.m. to 2 p.m.
5. November 4th from 12 p.m. to 2 p.m.

Students were also observed while attending two culminating events during the week of November 1st, 2011: (a) The Lighthouse University Question and Answer Assembly/ Peace Pole Dedication with Dr. Vandana Shiva; and (b) The Student Sustainability Symposium. I used audio and visual recording devices to aid in my collection of ethnographic field notes during these two events.

Semi-structured Interviews

At the conclusion of the service-learning project I recruited five students to interview. I created an interview protocol that included open-ended questions. The interview protocol was based on my research aims. Each student volunteered to participate in this semi-structured interview without receiving any additional incentive (e.g., extra credit) from their instructor, Dr. Bryant. After the interviews were conducted, I coded the student responses and weaved them within a narrative form in Chapter 4.

I conducted five separate semi-structured interviews with five different students. These interviews were designed to create informal and conversational setting. This assisted me in remaining open and adaptable to the participants' reflections and generated insight (McNamara, 1999). The interviews occurred after the conclusion of the fall academic semester of 2011. During the interviews, I employed a non-obtrusive digital recording device in order to create a trusting, relaxed, and informal environment. I also asked follow up questions based on organic student generated responses coupled with my reflections based upon the service-learning activity observations.

I utilized the interview protocol (Appendix D) during each interview as a guide for facilitating discussion. The interview protocol was designed as an open-ended conversation tool.

The questions were generated from my perceptions based on my observations prior and throughout the academic semester. The interview protocol was approved by my dissertation committee and the appropriate governing Institutional Review Board prior to the facilitation of the semi-structured interviews.

Once the five interviews were recorded, I listened to the digital recording device to ensure the accuracy of the recordings, and then I transcribed them into ethnographic field notes. Later, I submitted these transcriptions to the students and allowed them to review their own remarks and make any changes, additions, or revisions to my written interpretations of their experiences. Based on how the participants responded to each question, I constructed follow-up questions. These follow-up questions provided me with a clear view about how the participants truly felt about this service-learning experience.

Researcher Journal

I wrote a rich description of the service-learning events and recorded them in a journal. I recorded one journal entry once a week during the duration of the data collection period. Keeping a journal forced me to reflect on my own thoughts, ideas, and impressions as I proceeded through the phases of the service-learning project. I recorded notes in my journal about the events that caught my attention. I also recorded episodes that came as a surprise to me (Hendricks, 2009; Hatch, 2002; Kemmis & McTaggart, 1988).

Document Review

The document review conducted in this study consisted of scanning through various Lighthouse University artifacts and confidential documents. Throughout the data collection period, I searched for local information. I determined which local information was relevant to the

immediate and long-term success of The LIONS Garden. For example, I retrieved data from course syllabi, the secretary's minutes recorded at LIONS Garden Club meetings, the Lighthouse University strategic plans, The LIONS Garden Social Networking Website, Lighthouse University confidential archives, and the student-run Lighthouse University newspaper.

Data Organization

In Chapter 4, I organized each qualitative data source in order to answer the research question. "Expanding field notes is critical for gathering useful observational data that can help answer research questions" (Hendricks, 2009, p. 139). I listened to all of the audio recordings prior to transcription. This granted me the opportunity for preliminary analysis. Once I transcribed all the field notes, the text was ready for analysis. During the transcribing phase, I developed tentative categories based on the relationships that I found amongst the data (Maxwell, 1992). I coded the document based upon keywords and key phrases that emerged through an individual reflective process.

Allow Questions To Change

I allowed the research question to change. I started with one research question, but changed the question numerous times throughout the research process. I initially used a broad research question at an attempt to probe into the experiences of the students as they participated in this service-learning project. I constructed a more focused research question after brainstorming with my dissertation committee. Throughout this inductive process (Hatch, 2002), as data gathering and the analysis preceded, the questions, methods, design, and participants shifted somewhat (Herr & Anderson, 2005). "These shifts are anticipated as part of the spiraling synergism of action and understanding" (Herr & Anderson, 2005, p. 70).

Data Reduction

My dissertation committee supervised the process of reducing the large amount of data collected during this study. My committee supported my decisions to cut unrelated information that emerged that failed to directly answer the research question (Herr and Anderson, 2005). Once these data reduction steps were completed, I wrote up the final results in relation to the research question.

Data Analysis

The sources of qualitative data collected in this dissertation assisted me in interpreting the local context while enabling me to contribute my first-hand experience to the analysis (Hatch, 2002). These sources were analyzed in order to generate the local recommendations that are listed in Chapter 5.

First, I read through and reflected upon all of the data collected from this semester-long service-learning experience. “The initial step in qualitative analysis is reading the interview transcripts, observational notes, or documents that are to be analyzed” (Emerson et al., 1995, pg. 142). Then, I converted the data into text in order to make it ready for analysis. Once qualitative data was recorded in text form, I analyzed the text in order to search for patterns and themes in the data. Shank (2002) calls this process, which involves building general themes from specific examples in the data, thematic analysis. Next, I studied the textual data for patterns to determine ways in which to code the data. And finally, after the coding process, new patterns, sub-categories, and themes emerged, as seen in the later part of this chapter.

Each stage of service-learning project shaped the final written report, and throughout these stages I reviewed and analyzed the collected data (Catlett & Beck, 2007). Analysis of the

data was ongoing, as well as the review of the literature. As with the methodology section, the literature review from the proposed phase shifted and changed before the final edit of this dissertation (Herr & Anderson, 2005). As the cycles of research illuminated the elements under study, new literature was incorporated and added to the study's analysis (Rossman & Rallis, 2003). I gathered and analyzed appropriate data, and interpreted results in order to document impact and generate recommendations for next steps in the systemic improvement plan of the LIONS Garden.

Triangulation

To help to answer the research question, triangulation was employed. Triangulation is the collection of information from a variety of sources (Hendricks, 2009; Maxwell, 1992; Hatch, 2002). Triangulation is the process of corroborating evidence from different individuals, different types of data, and different methods of data collection; culminating in descriptions and themes within qualitative research (Creswell, 2005). "This strategy reduces the risk that your conclusions will reflect only the systematic biases or limitations of a specific method, and allows you to gain a broader and more secure understanding of these issues you are investigating" (Maxwell, 1992, p. 93). I observed the undergraduates at every scheduled service activity and I kept a researcher journal describing these activities (Hendricks, 2006). The researcher journal, project artifacts (student creative projects), and observations (field notes), were triangulated together to add to the validity of this dissertation.

The triangulated methods of data collection increase validity of this action research dissertation. This enhanced my ability to imply trustworthiness to the analysis. Multiple Data sources were analyzed together. This strategy enabled me to see patterns in the data. As

categories emerged, I recorded notes in the journal. The variety of viewpoints told a more comprehensive story of the LIONS Garden. And generated recommendations are tightly tied to the research findings.

After the data had been collected, I was able to provide a rich and thick qualitative account of this service-learning project and answer this dissertation's research question. After data sources were triangulated to answer the research question, conclusions were drawn about the effectiveness of the service-learning project. These conclusions informed my practice as an educator. Reaching valid conclusions in research is a critical step in the process of action research (Hendricks, 2009).

Validity

Action research is primarily a process to achieve change and secondarily to achieve understanding. McNiff (1994) argues that validity in action research is not about methodology, but is concerned with personal and interpersonal issues. Accordingly, I was primarily concerned with the personal and interpersonal issues that emerged from the service-learning project during the data collection period.

Based upon the thick description of the study's setting, participants, and research methods, the limitations of this study suggest that this project has low generalizability. However, I am less concerned about the universality of findings, and I am more concerned with the relevance of the findings to the local collaborators, which is a staple of action research (Riel, 2011). The prolonged observation helped me to determine the perspectives of the students and allowed me to gather enough data to add to the validity of this study and help answer the

research question. I engaged in persistent observation to gather enough data to add to the validity of the study and help answer the "why" questions (Hendricks, 2009).

I felt confident that the findings in this dissertation are accurate and reliable because I wove together a variety of information. This enhanced the accuracy of this study (Creswell 2005). Triangulation enhances validity through gathering multiple forms of data (Hendricks, 2009). By drawing on multiple viewpoints, I felt confident about the accuracy and credibility of the research, as I rigorously tapped into a variety of sources of information, confirmation, individuals and processes of data collection (Creswell, 2005). Further, the recorded parts of this study enabled me to revisit events and conversations and record them accurately.

Presenting Action Research

I processed fragments of qualitative data in order to identify what was learned during the service-learning project and prepared the data so that it was ready to be communicated to others (Hatch, 2002). I shared the findings with the participants of this dissertation and members of the LIONS Garden Club in order to strengthen the ongoing reconstruction of the LIONS Garden. Following the conclusion of the data collection period, I shared the results with participants in this study and members of the LIONS Garden Club in order to assist in the future planning of the LIONS Garden. The results of this action research dissertation will be published online. I also intend to present the findings generated from this dissertation at scholarly and/or professional conferences (Somekh & Zeichner, 2009).

Summary

In summary, this research employed qualitative methods embedded within the action research methodology. In this chapter I presented the researcher's positionality, information

regarding participant selection, methods of data collection, data analysis methods, and a description of the strategies used to ensure the validity of the research findings. Chapter 4 will show how the methods described in this chapter were utilized. Through informal conversations and student reflection, relationship building, participant observations, researcher journaling and a literature review, the threads of data that I collected were woven into a unique, imperfect, tapestry of action, service, reflection, and analysis.

The action researcher was immersed in the local context of this study. I immersed myself in all the activities of the LIONS Garden throughout the duration of the research process. I described the immediate context of the LIONS Garden in Chapter 2 and 4. I defined the root definitions of the context in Chapter 1. I developed conceptual improvements throughout the research process, including revisions to the research question. I compared conceptual improvements to reality throughout the research process by emphasizing the context of the garden. I identified desired changes and offered them as recommendations in Chapter 5. These newly generated recommendations are intended to "move into action" in order to improve the LIONS Garden. These recommendations were designed in order for Lighthouse University to create a more adequate "academic home" for the LIONS garden.

CHAPTER 4

FINDINGS

Introduction

This chapter presents the findings of this action research dissertation. After conducting a series of data reduction techniques, I summarized the events that emerged during the service-learning project by using a narrative approach, which enabled me to reflect on the research process and the findings (Herr & Anderson, 2005). In order to tell the story of this garden research, I divided this narrative into the following five sections: Workdays in the LIONS Garden, The College Garden Road Trip, Vandana Shiva Visits Lighthouse University, Student Sustainability Symposium, Film Screening, and Student Interviews. These findings will be analyzed in Chapter 5.

Workdays in the LIONS Garden

When the first workday began, student volunteers showed up to the LIONS Garden anxious, apprehensive, and ready to get their hands dirty. The students were first introduced to the Baron and Mortimer, the men who were responsible for facilitating the service work in the garden. The students did engage in questioning on the first workday, but overall the students were quiet. The first task the students completed was amending the soil within the raised beds.

Learning about the LIONS garden. Baron started the workday by describing to the students the origins of the LIONS garden. He explained to the students that last year, efforts were directed on getting the LIONS garden started by writing a grant. Baron explained that soil that was donated by the Urban Farming organization during the groundbreaking ceremony was not

producing any crop. “Now that the garden is here, we discovered that the first soil we used was no good, so we changed all the dirt in the soil.”

In early fall, the club members began planting new plants. While showing the students the new replaced soil throughout the various beds in the garden, Baron explained that, the LIONS Garden club wanted to grow tomatoes, basil, corn, squash, and beans: “Since we put in this new soil, now we have tomato. We have basil out there. We also have the corn, squash and beans.”

Baron explained that the immediate tasks of students would involve planting fall season crops like fava beans, snow peas, broccoli, swiss chard, and Brussels sprouts. Baron explained to the students that these plants that can grow well in cool weather and do not need as much sun. Baron told the students that the harvest from this produce would be donated. “One of the things we were talking about doing is donating the produce to the local food pantry.”

The students learned from Baron that the grounds department put the sprinkler system on the “back burner.” Although it was visible to the students that the entire sprinkler infrastructure was installed in the beds, the detailed work had yet to be done. The students learned that the garden came together “really fast for university time.” According to Baron, he was “happy the garden was here, but things haven’t really happened in a timely fashion. There are some things that haven’t caught up to other parts of the project.” Baron told the students that watering the plants had also grown into a challenge for the LIONS Garden:

> We have to work on watering schedules. We have been having a problem with getting watering done. There is no sprinkler system installed. We are trying to get that installed. But we are in the middle right now, we are kind of in a holding pattern. This is what

happens when you don't have a budget, we are kind of working off of the favor system.

Learning about the short term plan of the LIONS garden. Next, Baron explained to the students that they would be preparing the LIONS garden for Dr. Vandana Shiva's visit:

> I have already bought seeds, and I am going to start germinating these seeds. We really have to be on schedule. I have to hurry up and get these seeds in the ground. I don't know if anyone has heard of Vandana Shiva. She is from India and she is actually coming here. She is going to be receiving the Lighthouse Bridge Builder Award. She is kind of a female environmentalist. She talks about farming, about seeds. She has fought against this huge company called Monsanto, who is big on genetically engineering seeds and food, and she is really trying to get India off of that. She is trying to kick them out. She is against all these big supermarkets and emphasizes growing food locally.... In California, seventy percent of the food that we grow is actually shipped around the world; only thirty percent of it stays here in the state

Mortimer also emphasized the plan for Dr. Shiva's visit stating to the students "Yeah we want it to look fantastic for when Vandana Shiva gets here. Yeah that's the strategy and that's the plan."

Learning from failure. Mortimer, Baron, and Dr. Randall concluded that during the groundbreaking ceremony, the Home Farming team had planted too many of the same kinds of plants in the raised beds together. They also determined the quality of the soil that the Home Farming team delivered was poor and believed that this soil was "too sandy" and "low in quality." Thus, the members removed out all the dirt in the beds and replaced it with better soil.

Baron and Mortimer explained to the students that during the groundbreaking ceremony, Urban Farming had instructed the volunteers, who were students and Lighthouse community members, to plant each bed with the same type of plants. For example, one bed was planted with one variety of tomato. Another bed was planted with the same variety of cucumber. Mortimer explained to the students that:

> This caused the plants to compete with each other for water and nutrients. And this has netted the results that it has netted, which as you can see, the garden has died. So moving forward we will not over plant and have more biodiversity in each of the beds. We will stack functions and we will be planting plants that work together efficiently; things that attract beneficial insects, plants that deter certain pests, and plants that feed the roots of other plants. Similar to what we did with the three sisters over here.

Getting to work. The students worked hard to make the garden as beautiful as possible for Vandana Shiva's visit. After the beds were installed, under the direction of Mortimer, the club began removing the produce resulting from the three sisters experiment. According to Baron, planting three sisters means that, "you start your corn first, then you do the beans and the beans grow up along the corn and then you plant your squash."

First, the students followed Baron and Mortimer's directions and pulled out all the warm season crops that were grown over the summer. Then, they learned how to harvest green tomatoes, peppers, radishes and corn. Baron asked the students, "Does anyone want to take any radishes home?"

The students were directed on how to remove 12 foot stalks of Indian corn that had grown over the summer. During the process of removing the Indian corn from one of the beds,

Wendy received a visibly apparent red rash on her arm that “itched all day but went away in the shower the next morning,” according to Wendy.

Binding nitrogen in the soil. When the fall semester began and the students from Dr. Bryant’s class began arriving for workdays, only two of the raised beds were producing a decent yield of harvest. Because most of the plants were not producing a high yield, Mortimer and Baron decided to teach Dr. Bryant’s students the importance of learning from the mistakes made during the spring at the LIONS Garden. Mortimer wanted to teach the students that: “failure is ok as long as we learn from failure." This statement was in reference to various diseases some of the plants had suffered over the summer. Because the same types of plants were competing over the resources, Mortimer decided to increase the diversity of plants.

However, the LIONS Garden Club felt the time constraints of Vandana Shiva’s impending visit only a couple months away, and wanted to make sure that the garden looked “nice” when she came in November. This refrain was repeated over the semester and it became clear to the students that Vandana Shiva’s visit was a motivating factor in the garden work being conducted during the semester.

One student asked, “Does the clover use nitrogen?”

Mortimer retorted, “No it binds the nitrogen. And it speaks to how we mis-stepped as human beings… to mono crop. Nature provides us with all these safe guards and stops, and we just ignore them. We say here is ten miles of corn.”

Next, Mortimer taught the students, hands-on, on how to bind nitrogen into the soil by planting white clover into his customized raised bed. Students kneeled down in front of the

raised beds, planted white clover seeds in the beds, placed paper towels over them, and watered them. Students asked Mortimer about the reasoning for this method, in which he replied:

> The seed will shift in the wind and the paper towel makes sure that we maintain uniform moisture. What we need are paper towels or otherwise when you start watering, the seeds will shift and you won't get that same level of uniformity. The paper towels make sure you maintain uniform moisture throughout the soil.

Learning to garden hands-on. The students learned how to plant beets, several types of cauliflower, and broccoli, lettuce, Brussels sprouts, snow peas, sugar peas, bell pepper, and basil amongst other things. Students learned the general upkeep procedures of the garden, like identifying and pulling out certain types of weeds. They planted marigold and learned that marigold keeps bacteria in the soil. Students sweated as they carried bags of compost and spread the compost throughout each bed. Students learned how to identify and dispose of certain pests that were eating the leaves of many of the plants.

Labeling plants. Students worked together on labeling the plants in the garden by making signs out of blocks of wood. First, a craftsman who worked in the Lighthouse "Facilities department" cut fifty blocks of wood using a circular saw. Each block of wood represented a different plant. Then, students sat together on the garden bench and sanded the individual pieces of wood using sand paper. One student cracked a joke about his motion of sanding the paper: "using the shake weight is similar to using this sanding paper."

Once the blocks were sanded, the students labeled each block using watercolors and paintbrushes. The labels were color coordinated with each plant: strawberries were painted red and green peppers were painted green etc. Some students even added their own individual artistic

expression onto the blocks by painting an image of the plant next to the plant's label. For example, a student sketched and painted an image of the beet plant next to the word beets. After all the blocks were labeled properly, students bonded each block to a wooden stake by using a hammer and nails. Finally, each block was staked into the ground next to each respective plant.

The College Garden Road Trip

The LIONS Garden Club decided over the summer that the LIONS Garden needed to reach the Lighthouse community in new ways. Overall, the club was knowledgeable and passionate about what they were growing. The club wanted to learn how to expand the garden and learn how to efficiently serve people with the food grown from the garden. The club wanted to use the LIONS Garden as place to provide healthy options available to everyone on campus. The LIONS Garden Club desired to gain new ideas to bring back and possibly implement these new ideas in the LIONS Garden.

To accomplish this, the club planned a college garden road trip during one weekend in the fall of 2011. Ten students, Father Marvin and I, traveled in a Lighthouse University sponsored van and visited California State University at Monterey Bay, the University of California at Santa Cruz, and the University of San Francisco.

As the students drove north along the Pacific Coast Highway, Father Marvin pointed towards the miles of farms along the road. Father Marvin explained that each farm represented miles of one crop. For example, thousands of the same versions of apple tree would stretch for miles. This was the students' firsthand experience of the "mono-cropping" that Mortimer previously described. This was opposed to the work done at The LIONS Garden, which encouraged biodiversity by growing many fruits and vegetables together.

Opening Night

Father Marvin invited the college garden road trip participants to his dormitory room on the Friday night before heading to Northern California. Unbeknownst to other garden club members and the students in attendance, Father Marvin had gone to the LIONS Garden earlier that afternoon in order to harvest fruits and vegetables. By using the fresh produce, Father Marvin led an impromptu cooking workshop where each student was assigned an individual cooking role. I was in charge of peeling cucumbers. Most of the students were in agreement that the meal eaten that night was the "best tasting experience" during their time at Lighthouse.

California State University at Monterey Bay

The road trip began as students first visited California State University at Monterey Bay. There, the university runs an urban garden outside of the main campus, located in the drug and crime infested neighborhood of Salinas, California. At this garden, members of the community have the opportunity to adopt a plot for six months. The only commitment of these members is to maintain their own individual plots and to devote a certain amount of hours to the shared community plots. The person who runs the Salinas garden has worked in the community for a long time and is working in the garden as an Americorps volunteer. He shared a lot of innovative ideas with the students. For example, he showed the students how he made an artistic vertical garden out of soda bottles and creative things that he found. He also made a bench out of adobe that he was working on for over three years.

University of California at Santa Cruz

Next the students visited the University of California at Santa Cruz. Here, the students learned that this university has promoted gardens since the 1970s. The University of California at

Santa Cruz has many gardens, some smaller ones and larger ones that are designed to produce as much food as possible. The group was led on a tour by a group of energetic student leaders involved in the gardens. These student leaders advised the group about how to run and structure the LIONS Garden club.

One of the students at Santa Cruz said, "I grew this, I know, I am the person that touched this seed and saw the plant through the whole process." The main idea that the students received during their time at UC Santa Cruz was integrating the LIONS Garden into a living learning community. The group was overwhelmed by the sophisticated gardening system that they learned about during their visit to University of California at Santa Cruz.

University of San Francisco

Finally, the group traveled to The University of San Francisco. Here, the students worked side by side in a garden that is truly urban, as it was located close to The Golden Gate Bridge. During their time at The University of San Francisco, the students-leaders worked with our group for a couple of hours on their garden's daily tasks, which were written on a visible blackboard for students to follow. What was unique about this garden was that the university hired a full-time professor to implement a garden-based curriculum through academic coursework. Like The University of California at Santa Cruz, The University of San Francisco also integrates work in the garden with a living learning community.

Post Trip Reflection

The students who travelled on the College Garden Road Trip took more from the experience than simply learning about expanding and publicizing the LIONS Garden. The students learned that gardening is a long-term learning process. The students also learned that

failure is inevitable when working directly with nature and all of her external factors like weather and pests. The students learned that failure “is not such a big deal” because it's all part of the learning process. Below are excerpts of students’ reflections after they returned from the *College Garden Road Trip.*

Student 1. "The trip inspired me to take action, as we are all in the beginning stages of our garden, so it helped us tremendously from logistics to philosophy," This student hopes that Lighthouse will create a sustainable living community where students can "actively be a part of growing healthy, nutritious food while having a great time with friends and learning a ton." This student would love to see a weeklong trip up the coast visiting gardens and attending “do it yourself” workshops. "The Alan Chadwick Garden at UC Santa Cruz was my favorite because it was ridiculously lush and fruitful and I ate so many apples."

Student 2. Another student loved visiting the University of San Francisco because it was a Jesuit campus like Lighthouse:

> It was cool to see a sister Jesuit university garden, which was about twice as big as ours. We had a potluck and were able to talk to faculty and students about how gardening was important to food issues and food justice on campus. We also exchanged seeds from our gardens.

Student 3. Another student loved the Kresgé Garden at UC Santa Cruz because, "it provided us with a model very similar to what we hope to enact here at Lighthouse ... and it was a more approachable and realistic model for us. Lighthouse is way behind the times because some of the gardens we visited have been in operation since the 1970s."

Student 4. The last student thought the best way for the LIONS Garden to thrive, is to replicate the "living learning community" idea:

It would be great to see a Living Learning Community centered around a garden like the one in UC Santa Cruz. The trip sparked so many ideas ... such as the immediate possibility for the LIONS Garden Club to utilize gardening as a teambuilding opportunity for student groups on campus, and we could encourage faculty to consider utilizing the garden as part of their curricula.

One interviewee, Nina, who participated in the Urban Garden Road trip, presented a narrative about her experiences on the trip during the Student Sustainability Symposium, which is described later in this chapter.

Vandana Shiva Visits Lighthouse University

In the spring of 2011, Dr. Randall was notified that Lighthouse University was awarding Dr. Vandana Shiva with the Bridge Builder Award. This award is given to a world leader that has shown a lifetime dedication to fostering understanding between cultures, peoples and disciplines. Past winners include Deepak Chopra and Thich Nhat Hanh. The award is given annually by The Spiritual Center at Lighthouse University. There is a $10,000 prize accompanied with the award which is sponsored by a family of benefactors. Because Vandana Shiva is a leading voice in the worldwide movement to promote biodiversity in agriculture and to preserve the integrity of food resources, it seemed fitting to Dr. Randall and Dr. Bryant to use Dr. Shiva's visit as a driving force in this service-learning project. Thus, I determined that it was necessary to give a brief synopsis of her visit to Lighthouse University.

Vandana Shiva received the Bridge Builder Award during a daylong visit to Lighthouse University. On November 1st, 2011, Dr. Shiva traveled from her native India to California. A few weeks prior to her visit, she contracted a rare muscular disease that left her in an enormous amount of pain. Even though she was physically capable of walking, the pain she experienced was so great that she was forced to use a wheel chair during the duration of her visit. Despite her discomfort, Dr. Shiva seemed happy, pleased, and comfortable during her time at Lighthouse University.

The LIONS Garden was preparing for Dr. Vandana Shiva's throughout the entire semester. Dr. Bryant's students worked hard to make the garden as beautiful as possible for her visit. For example, during one of the early workdays, Baron explained to the students that they would be customizing the LIONS Garden for Dr. Vandana Shiva's visit. The garden was on a tight schedule because the garden's leaders wanted the garden to look "nice" when Dr. Shiva visited the campus on November 1st.

I observed two main events during her visit: (a) a Student Question and Answer Session with Vandana Shiva and (b) a Peace Pole Dedication at the LIONS Garden.

Student Question and Answer Session with Vandana Shiva

November 1st began at 11 a.m. with a student-run question and answer session held in an auditorium next to the LIONS Garden. Dr. Randall, Dr. Bryant, and the students enrolled in their respective courses were also in attendance. Dr. Shiva entered the auditorium from a wheelchair. In total, approximately one hundred members from the broader Lighthouse community, students, staff and faculty also came to this Question and Answer Session. Dr. Shiva kept a smile on her face while she spoke passionately to a room of approximately one hundred students. A student

volunteer acted as moderator and facilitated the Question and Answer Session by calling on students from the audience to ask Dr. Shiva questions.

During the session, Dr. Shiva challenged the audience to always ask the question: "What does the impact of what I am eating cost the earth and what is it costing my health?" She challenged the audience to not only ask this question, but also to answer this question and say, "I will only eat food I know that will rebuild the earth. And this act will rebuild my health."

Don't drink Coke. Before the first question was asked. Dr. Shiva called the audience's attention by pointing to a Dasani water bottle that was given to her by Dr. Randall to drink. Though parched from traveling and with no pitcher of water at hand, she refused a bottle of Dasani water, saying, "I don't drink that," while noting that the bottle's packaging added to pollution, and the bottling company is a longtime foe in her native India.

> I would like to really see, as part of the green Lighthouse University movement, water fountains in every corridor. Maybe this is a story I have to tell you because I am dying of thirst. If you don't know Dasani then Dasani is Coca Cola. Do many of you know that Dasani is Coca-Cola?

Most of the students in the audience raised their hands. Dr. Shiva explained to the students that she had never in her life had a Coco-Cola stating, "I've never drunk that funny brown liquid." She said growing up on a farm afforded her the luxury of drinking fresh lime juice, "when you grow up drinking fresh lime juice it's easy to avoid this stuff."

Dr. Shiva began reading the Dasani bottle to the audience and added that, "the funny thing is that this Dasani water bottle's green writing on the side is fake. 100 percent derived from plant? No! Any plastic made from genetically modified corn is not an ecological option!"

Dr. Shiva cried out “I am dying of thirst up here, I can’t drink this.” An audience member responded quickly by getting up from her seat and sharing with Dr. Shiva the contents of her stainless water bottle. Dr. Shiva says, “thank you this is better.” Then Dr. Shiva drank the water and pushed the plastic Dasani bottle away. Dr. Randall immediately came to the podium and took the bottle away. This act resulted in a loud ovation from the crowd. Dr. Shiva kept this impromptu water lesson going:

> When we get the convenience of that bottle some village is losing water, some aquifer is losing water. I want a young person to always ask, when you put a morsel in your mouth, what does this morsel cost the earth? What is this costing me? To not only have that question but also to answer and say I will only eat food I know that will rebuild the earth. And this act will rebuild my health… see that is the beauty.

The occupy movement. The moderator called on a student to ask the first question. One student asked, “ Dr. Shiva what do you think of the occupy movement?” Dr. Shiva responded to this question by stating the occupy movement has become an environmental issue because the financial world exert a harmful influence over the natural world. She encouraged the audience to question the financial world’s “narrative” of growth and exploitation forever, which teaches people “that if we do less for nature we do less for ourselves, which is not true.”

Rethinking everyday living. The moderator called on a student to ask another question. A student asked, “ How should young people change the way we live?” Dr. Shiva responded by stating that young people need to first change their consciousness in order to change the patterns of everyday living. She gave “shopping in supermarkets” as one root of the problem that young people “need to get rid of.” Dr. Shiva spoke of the need for young people to create a new way of

living that will require them to change how they eat, dress, and travel.

A new narrative. Dr. Bryant raised his hand and the moderator called on him. "Could you talk briefly about the environmental narrative as it stands today." To which Dr. Shiva responded to this question by stating that the new generation is responsible for cultivating a "new narrative." She explained that this "new narrative" must move away from the idea that individual well-being is connected with the accumulation of things, materials, debt, power, profit, and greed. Dr. Shiva expounded on this topic by illustrating that the dominant narrative currently states that: "if you live with less, it's not real living… forget your family your friends and just go shop." She explained that constructing this "new narrative" needs to look for what brings "true" satisfaction, which ultimately lies "within us."

Globalization's narrative. One student asked, "Talk about globalization's effect on the narrative?" To which Dr. Shiva responded to the audience by stating that globalization is a planned activity which revolves around businesses gaining more natural resources and cutting costs, which is what ultimately led to outsourcing international employees. Dr. Shiva spoke of how cities destroy their trees in order to create highways so people will drive faster to work. She explained that the financial world's narrative speaks only of economic growth and leaves out the environmental resource demand of that growth. Dr. Shiva spoke of how this constant need for growth creates "irreversible" consequences to the earth.

Dr. Shiva had many other insightful interactions with the students before the conclusion of the forum. After a standing ovation, she was wheeled away to a private Indian style lunch. During the lunch, Dr. Randall, Dr. Bryant, Mortimer, Baron, and a small group of ten students interacted with Dr. Shiva on a more personal level. Although people were fighting for her

attention, Dr. Shiva made sure to go around the room and hear from everybody. It is worth mentioning that the catered lunch that was provided by Sodexo was left untouched by Dr. Shiva.

Peace Pole Dedication at the LIONS Garden

After lunch, a group of twenty students, faculty, and staff made their way to the LIONS Garden for the Peace Pole dedication. Ten years before Dr. Shiva's visit, in honor of the September 11, 2001 tragedy, Lighthouse University decided to purchase a six-foot Peace Pole. A Peace Pole is an internationally recognized symbol that bears the message *May Peace Prevail On Earth* written in different languages on each of six sides. The Peace Pole purchased by Lighthouse University had been stored in a closet for years before the project partners decided to dedicate it to Dr. Shiva in the LIONS Garden. A few weeks prior to Dr. Shiva's visit, Lighthouse University groundskeepers installed the Peace Pole in the LIONS Garden.

Since she was confined to a wheelchair, Dr. Shiva was unable to inspect all the aspects of the LIONS Garden. But as she gazed over and saw the signs that the students constructed and the shimmering plants that were growing, she held a smile on her face and said, "Very nice." Dr. Shiva looked at the native pollinator garden and smiled. Dr. Shiva asked about the rocks in the rain garden and Dr. Randall explained to her that the rocks were used to divert rainwater. Dr. Shiva's gesture of approval was a "sigh of relief" to the students and staff who had worked all semester in anticipation of Dr. Shiva's visit.

Mortimer then presented Dr. Shiva with a piece of wood that he personally carved for her. The piece of wood was engraved with a quote from the late Jimi Hendrix. Mortimer then placed the wood inside the custom-made garden bed; this wood remains there still.

God bless the grass. Next, the group locked hands with one another and gathered in a circle around the Peace Pole located in the LIONS Garden. A professor from a nearby university, Dr. Krauss, with a guitar in his hand, walked to the middle of the circle and played a folk song by the protest songwriter Malvina Reynolds called *God Bless the Grass*.

Before Dr. Krauss performed *God Bless the Grass*, he described Dr. Vandana Shiva as a "truly inspiring planetary leader in the struggle for ecological justice." He also referenced what Vandana Shiva has achieved over the last number of decades in growing the Navdanya movement in India, a movement that promotes organic farming and raises awareness of genetically engineered food. This professor described the planting of the Peace Pole in the LIONS Garden as a symbolic gesture that assists in building a "larger educational foundation for a better and more humane world."

This professor spoke of the importance of understanding the gardens for their educational and religious significance. For example, he described that kindergarten was originally designed as a school garden for children. He also described "Plato's Academy" as a type of public garden. Further, he described how gardens have fueled the artistic imagination of Catholics. Finally, he spoke of how gardens have been used to rally both religious and secular social justice movements. Excerpts from this speech are below:

> Lighthouse University's symbolic and ritual planting of a Peace Pole, a planetary gesture here in its local community garden, as a university that is both a regional, national, and international leader, strikes me as achieving a natural congruence with Dr. Shiva's own concerns and approach…. In my work as a sustainability educator, I am often asked what a garden can do to offset the horrors of the mounting global industrial complex that

currently seeks to administrate all our lives? I would like to play a song by the great protest songwriter Malvina Reynolds called *God Bless the Grass*. It's listed in the *Rise Up Singing* collection under the theme of *Ecology*. *God Bless the Grass* is clearly a prayer to the organic and I'd like to dedicate it to this space, as well as for the Occupy movement at the City Halls who have called for a General Strike tomorrow. I think it's a Vandana Shiva kind of song…a folk song, owned by and for the people. Our heritage. Thank you all again for letting me sing it here.

Dr. Krauss began playing his guitar and sang the song *God Bless the Grass*. Dr. Shiva smiled when he sang. When Dr. Krauss was finished signing, the group clapped.

Prayer. As people remained with their hands locked in the circle, Father Marvin then gave a prepared prayer as people bowed their heads and closed their eyes. Excerpts from his prayer are below:

There is more at this tiny garden that meets the eye. There is a beauty that flourishes here. We pray for the grass that breaks through the cracks. We pray that the vegetables will be nourishing. We pray that the flowers might awaken our senses. We pray that the insects and animals find safety and that the soil, the water, the sun, and the breeze will bring peace to all. We pray that when we gather here that we will see the love and peace that grows and comes forth from this garden and that we embodies this love and peace in our actions, plus the wisdom to grow in love and kindness to each other so that we can grow in peace. God is present in us here. May this garden and this encounter here today going forth will truly be a source of peace to those who need it.

Peace pole dedication conclusion. At the conclusion of this dedication, Dr. Shiva said that, "the same living energy in the grass is in us." Unexpectedly and suddenly, Vandana Shiva took her necklace from around her own neck and placed it on the Peace Pole. During the publication of the study, the necklace still remains there. When the Peace Pole ceremony ended, students were invited with Dr. Shiva to visit another local community garden approximately ten blocks from the LIONS Garden.

That evening, during the presentation of the Bridge Builder Award, too many people showed up, forcing Lighthouse University's administration to turn people away at the door. After receiving her award, Vandana Shiva delivered a speech called *The Future of Our Planet* to the public. During her speech, she persuaded the audience to see the importance of the LIONS Garden and its role in the future of Lighthouse University.

The Student Sustainability Symposium

Six months prior to Dr. Vandana Shiva's visit to Lighthouse University, in the spring of 2011, Dr. Bryant and Dr. Stevens organized the college's first environmental interdisciplinary symposium called *The Sustainable City*. Students in the Philosophy course were required to attend portions of this. As part of my research, I attended and observed during these events.

The Sustainable City

The Sustainable City was held over the course of the two days on the Lighthouse University campus. This symposium hosted a series of guest speakers, panel discussions and events centered on issues of environmental justice and urban ecology. The goal of the symposium was to educate students on issues of environmental justice and provide them with opportunities to engage in hands-on activities that promote a more environmentally conscious

city. According to university administration, *The Sustainable City* was an "exciting new step in university programming."

The Sustainable City was designed to get students thinking about environmental issues on an intellectual level and start working to solve them in hands-on ways. The topic looked to empower students to make the personal changes needed to have a more sustainable lifestyle in our cities. According to Dr. Bryant, *The Sustainable City* placed students in the position to "start thinking about" ways to combine theory with action:

> "Theory without action is impotent, but action without understanding theory first is blind. Before we can transform our cities we have to think about what it is we're going to do. We have to theorize, dream and imagine what kind of city we want."

The ideas that propelled *The Sustainable City* built the groundwork for creating the Student Sustainability Symposium.

Preparing for the Student Sustainability Symposium

As previously stated, as part of the required coursework, Dr. Bryant required the students to present a creative work at the Student Sustainability Symposium that was based on the service-learning experience. On November 3rd 2011, two days after Vandana Shiva departed from Lighthouse University, we began preparing for the Student Sustainability Symposium. The day started when three Lighthouse chefs visited the LIONS Garden early in the morning. During their visit, these Sodexo employees handpicked enough vegetables from the beds to create a giant sized salad. Later on in the day, at approximately 2:45 p.m., these chefs placed the salad in a large bowl in the eating area of the Student Sustainability Symposium, which was held in an

auditorium on campus. I played the host or master of ceremonies of the Student Sustainability Symposium, which officially began around 3:00 p.m.

As students from Dr. Bryant's class began to enter the auditorium, they we were joined by the undergraduate students from Dr. Stevens' urban ecology class and Dr. Randall's sustainability class. Students spent the first 15 minutes eating salad from the LIONS Garden, and popcorn, nuts, and fruit donated by Sodexo. While students and staff members ate this food, they engaged in conversation about it, appreciating its taste, and appeared proud of the fruits of their labor. For example, one staff member said to the group: "that's the salad from the garden. I am impressed with the quality of the lettuce."

Dr. Bryant's Opening Remarks

After I gave a quick rundown of the symposium's speakers, I introduced the first speaker, Dr. Bryant. When Dr. Bryant walked to the podium, he was met with cheers from the crowd. Dr. Bryant wanted to talk about why environmental studies were important to Lighthouse. Below is an excerpt from his speech:

> We are all here at Lighthouse together. One thing I do want to suggest which is significant at Lighthouse University as opposed to USC or UCLA is the role played by ethics here. I think most of the environmental problems that we face right now will not be addressed in time unless we start thinking of this as a moral imperative, an ethical imperative to address the environment… We need to think of the moral components of the environmental crises that we face. As long as we think of it only in scientific or only in political or only in economic terms, I don't think we are going to get the kind of urgency we would get if we look at in moral terms, in addition to those.

Presenting on The College Garden Road Trip

At the conclusion of Dr. Bryant's speech, Nina gave a presentation of her experiences on The College Garden Road Trip. Nina explained that she was "inspired" by the students that she encountered on The College Garden Road Trip:

> They all were so knowledgeable that I thought they must have been gardening for so long. But most of the students were only sophomores, and they had been doing it for only a couple of months or a couple of semesters; and they were already really into it. They showed how much you can learn from something so simple. Gardening can teach you a lot about patience, creativity and flexibility. You really have to be dedicated to it.

Nina explained to the group that one of the students working at the Kresge Garden at the University of California at Santa Cruz said, "I grew this, I know, I am the person that touched this seed and saw the plant through the whole process." Nina explained that this statement taught her that growing your own food is better than getting something from the grocery store, explaining that students usually do not know "what hands, cars, planes, and trains that touched the food that was bought in a grocery store."

Interpretive Dances

Next, I walked back to the microphone and introduced two students from Dr. Bryant's environmental ethics class who performed dances in fulfillment of the creative work requirement. Jan is an undergraduate who presented a hip-hop style interpretative dance. Penny is an undergraduate dance major who presented a ballet-style interpretative dance.

Jan. Jan gave a speech that was followed by an interpretive hip-hop dance that she performed. Jan talked about how gardening was such an empowering experience for her that it

changed her outlook on service. Before this gardening experience, Jan did not care for service. She lived in MESA, which is a service-based living learning community on campus. She explained to the group that her MESA roommates voted her as, "most likely never to do service again." She admits to joining the service community because, "all of her friends were going to be living there." Because of her "distaste" for service, Jan thought this gardening experience was "Going to be one more thing I have to just get it done. But that was not the case:"

> Something about gardening was very therapeutic. I am not going to stop gardening just because I did my ten hours of service. Once I get back home to San José, I will help my parents in their garden, which they haven't gotten me to do yet because I have been watching too many TV shows. One of my dreams is to be a talk show host; in this role I would love to inspire other people to grow their own food. We could talk about where the food comes from and I can warn people about pesticides in foods…I am dancing to the song *Man in the Mirror* by Michael Jackson. I hope this dance inspires all of you to get up and start gardening.
>
> The audience applauded for Jan after watching her performance.

Penny. Next, I walked back to the microphone and introduced Penny, who also was a student from Dr. Bryant's Environmental Ethics class. Penny gave a speech that was followed by an interpretive ballet-style dance that she performed. Below are some excerpts from her speech:

> I am a dance major and in one of my classes we were talking about working with the ground. There is always this idea that the ground is the enemy or it can help you. My dance professor said that: "the ground is our constant orientation when all we do is disorient our bodies." This is something I started to actually feel when I was working at

the garden. When I tried to pull out some parsley, I realized that this really small plant was stronger than me. I had to use my full body to pull it out. It was embarrassing because it took me forty minutes to take it out, and my back hurt. I got the inspiration from this connection I started to develop with the earth. I was planting this seed and it was like tucking in a baby. Go garden.

The audience applauded for Penny after watching her performance.

Oxfam America. Next, I walked back to the microphone and introduced Andrea, a junior political science major from Dr. Randall's Sustainability class. Andrea discussed starting a chapter of Oxfam America at Lighthouse. Andrea explained that during the previous summer, she participated in a weeklong training seminar at Oxfam America, which distributes food to people in need. Andrea explained that the world produces enough food for all, but it is not currently distributed because of unequal distribution of resources, power, and inequalities. Further, Andrea explained that we have seven billion people on the planet and one and seven people go to bed hungry every night.

With this in mind, Andrea created an idea of building a community garden at an impoverished local high school. Andrea explained to the crowd that she first got in contact with Dr. Randall and Baron. Together, they evaluated the needs of the high school. As a team, they determined that building a beautification garden instead of a food garden "better met" the needs of the high school students. Andrea explained to the group that she was able to mobilize thirty students from MESA, the service-based living learning community, in order to help construct this beautification garden.

In her speech, Andrea wanted to encourage the group to attend more on-campus garden events and promoted Lighthouse University's annual hunger banquet:

> The LIONS Garden does amazing events. I'm so in awe of you guys. If you are interested, come out to Lighthouse University's annual hunger banquet next week. It's an interactive dinner where we reflect on hunger and food inequality throughout the world. Fifty percent of the world's population still lives in poverty; which is astounding. That night we will reflect on that. This is the eleventh year that Lighthouse is doing it.

The audience applauded for Andrea at the conclusion of her presentation.

Students' questions fielded by Baron

Next, the format of the symposium shifted from student presentations to questions and answers. The students asked a series of questions about the LIONS Garden that were directed at Baron.

Student 1. The first student asked the club, "If the garden keeps going well is there a plan to expand it to other grassy areas on campus? To which Baron addressed the audience:

> That is our hope and dream. There are some potential sites we have identified outside of dorms. That is something that will depend on the backs of the students if it is something that students want, and want to participate in, that will determine that.

Student 2. Another student asked, "Do you find a lot of people that work at the garden are required to do service through certain courses? Or are there a lot of people that do it on a more voluntary basis?" To which Baron addressed the audience:

> Required service is the reason for most of the people who have worked this past semester. A lot people come by, and their really interested but they do not necessarily come for

workdays. But that's ok I mean as long as people are at least interested then that's something we can hopefully keep around. We do still need people to show up on work days that always would be nice. Ninety percent of the students who have shown up for workdays are from Dr. Bryant's class for sure.

Student 3. Another student asked, "Are you going to expand workdays? To which Baron addressed the audience:

We are. I chose that time because it worked best for me. I work another job. So that was the only time I had free. We might expand it next semester. It all depends on how much work we need to do, and the amount of people who show up.

Student 4. Another student asked, "How resistant is the university to a garden growing? I know we are obsessive in our concern for our aesthetics. What is stopping you guys from saying we want to make the campus into a big old cornfield (the crowd laughed)?" To which Baron addressed the audience:

It would depend. I know certain fields are not being used all the time. There are certain activities that go on throughout the year. They need a space for these activities. It is about finding a space that has truly been underutilized. Then from there, finding people that will actually work on it consistently.

Student 5. Another student asked, "I have not been to the garden myself, I'm just curious what do you guys grow? Baron explained to the audience that The LIONS Garden grows lettuce, beets, broccoli, cauliflower, Brussel sprouts, snow peas, sugar peas, bell pepper, and basil amongst other things. He explained that with the exception of the basil and the bell pepper, most

of the plants can be grown in the cool weather. Baron explained that the LIONS Garden was going to grow fruits during the upcoming spring semester.

Once student questions ceased, the audience again applauded for Baron.

Film Screening

The day after Vandana Shiva left Lighthouse University, the LIONS Garden Club hosted a film screening of *Queen of the Sun: What are the Bees Telling Us?* (Betz & Siedal, 2010). Featuring Vandana Shiva as one of the film's protagonists, *Queen of the Sun: What are the Bees Telling Us?* is a documentary that examines the root causes of the worldwide decline of the bee population, which is called Colony Collapse Disorder (Betz & Siedal, 2010).

The film illuminates the stories of beekeepers, scientists, and philosophers who are all searching to restore the bee population (Betz & Siedal, 2010). According to the film, the destruction of bee colonies represents an irreversible global ecological shift in biodiversity (Betz & Siedal, 2010). Bees are dying primarily due to chemical intensive monoculture-based farming practices, flower-barren sprawling suburban lawns (like the large lawns found at Lighthouse University), and the destruction of native landscapes (Betz & Siedal, 2010).

The film advises people to help restore the bee population by avoiding pesticide use and by planting bee-friendly flowers, similar to the native pollinator garden that was installed at the LIONS Garden in early 2011(Betz & Siedal, 2010). Unfortunately this screening of *Queen of the Sun: What are the Bees Telling Us?* was only attended by three Lighthouse University students, along with Father Marvin and myself.

Student Interviews

The following section is divided into five categories that emerged during the coding process: a culture of service; students' prior experience with gardening; the social aspect of gardening; service-learning academic connections; and transformation through gardening.

A Culture of Service

Service is part of the everyday student culture at Lighthouse University. The participants interviewed in this study had varying levels of prior experience with service on campus and beyond. Other than Stacy, all of the interviewed participants had been engaged in service at Lighthouse University. However, the majority of the volunteerism contributed to the LIONS Garden during the semester of 2011 was a result of participation in this service-learning project. As Baron indicated, "Ninety percent of the students who showed up for workdays in the garden were from Dr. Bryant's class."

The following interview segments reflect the participants' experience with service-learning as described in the literature review. Previously, the four components of service-learning were described in this way:

- Integration of service opportunities into academic curriculum (Allen, 2003; Wade, 2001).
- Application of service-learning to meet a community identified need (Allen, 2003).
- Reflection of activities that took the form of student discussions after the service-learning project is completed (Wade, 2011).
- Development of the student's social, personal, and civic attributes (Allen, 2003; Wade, 2001).

Students experienced each of these four components and the following interviews are evidence of this experience.

Stacy. Gardening at the LIONS Garden was the first and only service experience that Stacy had participated in during her four years at Lighthouse University. She admits to hearing about the many service opportunities that Lighthouse University had to offer and heard of the service-based fraternity organizations on campus, but never got involved in one. Stacey claims that:

> I didn't know about these opportunities until taking Dr. Bryant's class. It's surprising that a lot of students do not hear about service opportunities. I did some service in high school, but never through Lighthouse.

Nina. On the contrary to Stacy, Nina has been doing service for almost her whole life and throughout her time at Lighthouse University. While she was in elementary school and high school, she tutored younger students who could not speak English well. She helped as a camp counselor, volunteered for the Boys and Girls Club, and she delivered turkey dinners. In all that time, it made Nina happy because people would be saying, "oh that is great that you do that." She adds that "I would have fun with my friends. You would see people smile and you would feel great. Of course it makes you feel good."

In addition, Nina works part-time in the Alternative Breaks office at Lighthouse University. This has afforded her the opportunity to organize and participate in service trips over winter, spring, and summer breaks. Nina says that:

> I've been to Costa Rica, Mexico, Ecuador, and Cambodia. In Costa Rica I worked with sea turtle conservation, like working to eliminate poaching. Most of the international

service opportunities were teaching kids. This helped prepare me for local service, like last week I went to the local high school and helped kids with their interviews and resume building and answered questions about going to college.

During her time at Lighthouse University, Nina has realized that service is not "just over the weekend." She often travels during the middle of the academic week to Midnight Mission to serve. She actively searches out on-campus service events that are aligned with her interests. She explains, "Whether it's to help out an AIDS walk, or something else, I'm always involved in service. I don't really have a focus."

When Nina first came to Lighthouse she thought that she had to do "extra service events" and she would get "really stressed out about it." But she has grown to realize that service is how your daily lifestyle is. Nina is a Resident Advisor at Lighthouse University and believes that, in this role, she has the opportunity to do service with her students every day:

> When I found a job as a Resident Advisor, I get to do service with students every day, and it's my job. And I don't feel like I have to do all these extra things. Because what are those extra things? A lot of people do service to feel good, to fulfill hours, to impress somebody. Service should be something you do every day. Opening the door for someone, when you see someone that is upset or that needs helps. Lending your time to listen to them. And my RA job lets me do that. This has let me realize that this is a lifestyle choice for me. This is something that I want to be, not something I need to complete only at Lighthouse and then move on. Real service to me is not what you do on the weekend. It is the lifestyle you have… And service should be difficult. True service is something hard.

Nina was awarded the Community and Leadership Award for her outstanding commitment to social justice through active participation in service to Lighthouse University and the Latino community at large. Nina was recognized for promoting personal and social success through leadership and service to the Latino community.

Andrew. Andrew has been engaged in a variety of service activities on campus through membership in a service-based fraternity organization. Through his service organization, Andrew "hands out food once a month at a local mission that helps homeless people." He often volunteers at a rehabilitation center and mentors children at an impoverished elementary school, where 10% of children are homeless:

> At the beginning of this year, I got involved in Ignatians, one of the service organizations on campus. I am involved in a lot of different community-based placements and I get different things out of each of them. I have done different service in the past, it kind of runs in my blood, runs in my family. I coached Special Olympics when I was I high school. It all started when I needed to do community service to get into college. But then I gained a greater appreciation for its true value and just stuck with it. I volunteered at a retirement center back home for a long time. And I have really enjoyed a lot of it.

Andrew questioned the goals and the impact of many of the Lighthouse University service initiatives. Andrew cited student laziness and inconsistency in service placements as two problems contributing to the lack of quality service opportunities on and off campus.

Wendy. Wendy has done service outside of this class as well. "I have done lots of animal types of service… I am involved in an animal service initiative through my sorority." Wendy

and two other Lighthouse students even started a local Habitat for Humanity last year on campus. She spent her first two years of college at DePaul University, and notes that:

> I think service is way more important at Lighthouse. Even at my old sorority they didn't have service days for the whole campus like they do here. I didn't know of any classes that had service to go along with them. There are a lot of people who really do care about service here, especially with the service organizations. I know there are a lot people here that if they find one cause they actually care about then they are committed to it. It depends how involved you are here on campus. The more you are involved on campus the more opportunities you have to serve.

Karen. Karen had also done service outside of Dr. Bryant's class as well. Karen is actively involved in service through her membership in her sorority. She is also a member of a service sorority on campus that participates in various service initiatives like Special Games. Karen works part-time as an on-campus Resident Advisor. In her role as Resident Advisor, she encouraged the students living in her dormitory to participate in service at the LIONS Garden.

Students' Prior Experience with Gardening

With the exception of Karen, all of the students had little previous experience with gardening. With the exception of Nina, who came from a lower income Latino family, the participants described themselves as coming from privileged economic and social backgrounds.

Karen. Karen describes her family as upper middle class. Karen has been involved with gardening for the "past ten years or so" because her dad was really into gardening. She grew up with a garden in her backyard in Portland, Oregon. There, her family grows "some flowers some fruits and vegetables, that sort of thing." Despite growing up economically privileged, Karen's

mother comes from a Mid-West family that is very poor. She said that she has a poor uncle who, still works on a farm in Missouri. This service project was the first time Karen gardened here at Lighthouse University:

> Gardening is a skill that a lot of people have forgotten. Both sides of my family come from farming roots in Kentucky and in Missouri. So that's how my grandparents made their entire living off of farming. And it is just very different now seeing how few people actually still farm. I would say to come back and work here.

Nina. Nina is not privileged economically and describes herself as a, "lower-income Latina student." However, she warns other minority students "not to assume that all Latinos at Lighthouse University are poor like me, many minorities here are rich. You may speak the same language (Spanish), but you cannot always connect with people of the same race." She had a lot of obstacles many students at Lighthouse University did not face. One example of an obstacle that Nina had to overcome was being the "first person in my family to go to college." Despite being underprivileged economically, she was able to win academic scholarships. Through helping other students, this has made her feel rich:

> I am rich in a sense. I see a lot of opportunity ahead for me. I am positive and my mindset provides richness to me even though I have little amounts of money. That is why I feel rich because I accept the things I cannot do, and discover my other privileges. Most kids here are privileged. But I have seen the exact opposite that surprised me. It's easy to stereotype and think everyone here is rich. But I have met some students whose parents have been laid off and can't return to Lighthouse. I have comforted crying students who

cannot afford to come back to school. That is where I can help; I can help them find scholarships because I had the same struggle when I came to Lighthouse.

Nina had never done gardening intentionally before. She volunteered to "rake stuff and pull out leaves before." Nina's father gardened in the back yard and would tell her to complete basic gardening tasks for him. But Nina stated that she, "never learned the science behind gardening before participating in this service-learning project," and was proud of the numerous "gardening concepts that she had been able to learn and practically execute since participating at the LIONS Garden."

Wendy. Wendy describes her family as "very privileged" and upper middle class. Growing up in a well-to-do suburb of Chicago, Illinois, Wendy always had someone employed who came to her parents' house to tend to the garden and mow the grass: "The only reason my dad mows the grass now because he is retired. But we still have someone doing our landscaping."

Andrew. Andrew had no interest in gardening before the start of this service-learning project, adding that, "Nor did I have an appreciation for what gardening was, other than maybe an aesthetically pleasing appreciation." Andrew also comes from a very privileged background; "financially, supportively, and lovingly" according to Andrew. Growing up in suburban southern San Diego, California and having an upper income level, Andrew claims that he did not have much exposure or connection to gardening:

We have gardeners that come to our house once a week. They are all minority Hispanic background. They are a family that has worked for us for eleven years. We treat them

> really nice and we like them. And they are part of our family, we do not consider them our workers or lesser than us.

Andrew adds that Southern California people held the general assumption that all the gardeners are of Hispanic background:

> Unfortunately, I assume all the gardeners at Lighthouse are Hispanic. This is a broad generalization but I'm sure there is some truth to it. I personally haven't seen a gardener that has a background other than Hispanic. I don't know why that is. They make the campus look good.

Recently, Andrew's mother has been gardening a lot at home just to "cut back on costs." While she enjoys gardening, she can't physically do everything a garden requires. Andrew adds that: "She just goes out and buys it and plants it, and there is much more to it. I think people need to realize that."

Stacy. Stacy came from Hawaii where she grew up in an upper-middle-class family of Pacific Islander descent. Stacy feels that, "We are very privileged here at Lighthouse. There is a lot we are sheltered from at this university. Working in a garden makes us better people and better-rounded." Stacy had done a little gardening at her home in Hawaii. But none of her plants had ever survived. She stated that, "my garden has never looked anything like this one. It looks really amazing here."

The Social Aspect of Gardening

One of the most surprising benefits that the students experienced from gardening was the feeling of community. Students' perspectives about this are detailed below.

Throughout the service-learning experience, conversation always occurred while the students worked together. Students described the LIONS Garden as a comfortable place where they felt like it was "safe to talk"; as students felt they could "be themselves." The students often joked around or fooled around with one another. Some students talked about taking skiing excursions to Tahoe, while other students talked about the bad dreams they experienced the previous night. One student talked about getting a German tattoo tattooed on his body. Working in the dirt forced some students to reflect on days gone by, as students reminisced about their childhood.

Through informal conversation, students discovered that the food they were growing in the LIONS Garden tasted better than the vegetables for sale at Lighthouse, "The kale I eat in the garden is way better than the veggies I bought from Sodexo." While another student retorted: "I think it tastes better than the farmers market produce." The students also noticed how their work had transformed the space. Six months prior, the space was home to grass and a few trees. In the fall of 2011, the combination of shimmering colors mixed with the butterflies had created a noticeable beauty. For example, one student commented, "this bed is so pretty, this bed is perfect; look at it. The plants here don't get wilted." While another student commented," a beautiful garden, great weather, and great company."

This service-learning project created another community of belongingness on campus. Though the students did not anticipate or predict this, through the garden-based labor the students made friends with one another. Previously, their classmates were just faces in the classroom, now their classmates have become contacts. The five interviewees of this study all described the importance of gaining social benefits while gardening.

Andrew. Andrew never thought he would find himself in the position where he was actually gardening, because it is not an interest of his. But once Andrew got into gardening and started doing it, he realized that there was a communal based relationship with it:

> There were a lot of my peers that I haven't met before and we were kind of almost forced to bond. And that was really interesting because then you got a chance to talk about other things than gardening, which made gardening itself a lot easier. Everyone seems like they were there for a reason. I noticed some people were there who didn't even have to do it for a class. It was cool to see people that were gardening just for the sake of gardening. It was cool also to see people like myself who had no interest in gardening whatsoever.

Wendy. Wendy had more fun than she anticipated in the garden. She thought it was going to be a lot harder than it actually was. Wendy discovered that growing your own fruits and vegetables is a very important part of gardening. But, she found the social benefits to be the garden's greatest asset. Wendy felt more motivated to participate in service activities when she participated with her friends, stating: "it is important to do service with people you want to be around because it is hard to get up and do service by yourself."

Wendy felt like the most benefit she got out of it was the ability to "actually be able to talk to new people." Working in the garden gave her the opportunity to also talk to people in Dr. Bryant's class that she would have never had an opportunity to talk to:

> Working in the garden was better than just sitting in class and not ever getting a chance to know my classmates. I got a chance to talk to people in my class that I would have never got a chance to talk to. This was better than just sitting in class and not ever getting a chance to know them. If you are gardening with other people, you build relationships

working besides them in a different way than just knowing people. I also got a chance to talk to other people involved with the LIONS Garden that were outside of Dr. Bryant's class.

Karen. Karen believed that working with the earth encourages interaction with others. Karen thought that the simplicity of gardening often makes it "easy" to socialize:

> I think gardening is a great way to meet people. And to find people that have different interests because I see gardening as a very social activity. While you are working on doing something, it's not that distracting. You don't have to worry about concentrating on planting a plant, and it's very simple. So you get to interact with different sorts of people. I really enjoy speaking with my classmates outside of school. I thought that was really cool.

She believed that gardening is a "great outlet" that many people on campus have "yet to discover." Karen believed that students should join the LIONS Garden in order to make new friends; Karen often encourages the students in her dormitory to serve in the garden:

> So many students say "oh I go to the gym to relax" or "oh I just drink coffee all day long." And I say no…come to the garden, gardening is a great way to kind of center yourself again and to interact with other people.

Stacy. Stacy felt good when she was working at the garden. She enjoyed speaking with her classmates especially. She liked working with her peers and friends outside of class, "It was nice. I feel like I made a lot of friends working at the garden. Everybody here is so nice. And it feels nice because it is more student-run. I like how it's less formalized." Stacy also said working in the garden enables you to have "real conversations."

For her fulfillment of Dr. Bryant creative work requirement, Stacy designed a photomontage of the garden. She described the process of taking pictures and assembling them as a therapeutic experience. Stacy explained that she incorporated different quotes and ideas that she absorbed through Dr. Bryant's class and manipulated them into the word community. Then, she used the pictures to create a montage of the garden.

Acquiring Skills through Gardening

Despite their lack of gardening experience, the students quickly developed the minimal technical skills to begin gardening. Individual evidence of student skill–development as a result of the service-learning project follows.

Stacy. Stacy appreciated the experience of physical labor while working in the LIONS Garden. One example of this occurred when Stacy built a metal cage to brace a bed of tomato plants. Immediately after building the cage, Stacy wiped the sweat off of her brow and said "I love it over here. I am so glad that Dr. Bryant is incorporating this into his class."

During her time at the LIONS Garden, Stacy "definitely learned how to water plants and learned how to transplant plants from one raised bed to another." She found out about the science aspect of planting certain plants alongside other plants interesting. For example, Stacy enjoyed it when, "Baron and Mortimer taught me about the nitrogen fixation into the soil."

Wendy. Except for planting flowers with her mother, Wendy never "really did gardening before," causing her to feel apprehension towards the service-learning requirement." On her first day working in the garden she had an alarming experience. The incident occurred when Baron instructed her to remove the twelve-foot-high stalks of Indian corn that had grown over the

summer. This job made her nervous because she said that, “I got rashes on my arms from the corn. It lasted for the rest of the day. By the morning it was gone and it was not a problem.”

By the end of her time at the LIONS Garden, Wendy stated that, she learned how to “do gardening.” She learned how to plant different fruits and vegetables and water them. Wendy added that,

> We did the soil and cleaned up the garden, like picking weeds. We made signs and stuff to make the garden pretty and I learned how to add compost to the soil.

Andrew. Although Andrew admitted to learning many of gardening’s technical terms that “escaped his mind” at the time of the interview, he learned that, “garlic helped place phosphorous into the soil.” He added that, “I really don’t fully retain many of the terms that were introduced to me, but I fully understood them at the time they were explained to me.” During the semester, Andrew had become interested in the certain amount of math that he discovered behind gardening:

> You have to position the seeds in a certain way to avoid over competition or population density. Certain things don’t grow well next to each other. Plants compete for sun and light I learned that you could use certain seeds to help other plants flourish. I learned that gardening requires a bit of labor, and there were some physical things behind it. But it wasn’t too physically exerting or anything like that. I think it was all very manageable. The ocean breeze was cool, which made it nice not to be surrounded by the heat.

Karen. Karen thought that working in the LIONS Garden was a “different type of farming” than working on her parents’ farm in Oregon. You have to grow different things over here, this is a very different climate than where I’m from in Oregon.” Karen was excited to be

"working with the earth again." However, she preferred farming in Oregon to the LIONS Garden because she believes that, "using primarily raised beds is a little more limiting. It's very contained."

Further Karen learned that using her skills "came in handy" for the LIONS Garden; "I already had developed some useful skills." She believed this was an asset to this LIONS Garden service-learning project because, "Service-learning requires different physical and academic skills that people already have." Although she was knowledgeable of many things around the garden, Karen thought it was "cool" to hear her classmates say "I don't know what a hoe is."

Nina. Nina felt happy to be working out in the garden, "it was awesome." Nina had a "hard-time" understanding the wide array of gardening concepts that she was exposed to during the service-learning project; however, Nina felt the physical aspects made her feel like she was doing "something productive." Nina especially enjoyed witnessing the changes in the LIONS Garden as a result of student physical labor:

> The garden gives you the opportunity to see what you are doing develop. It was very exciting to come out at beginning of the semester and to come out now at the end of the semester and see what plants are now in season again and how the snow peas have been growing. This is so exciting because it was us who planted the snow peas. So I think it is a really cool way to actually witness what you are doing develop.

Service-Learning Connections to Academic Coursework

As part of the course's goals, Dr. Bryant wanted his students to understand that the environmental challenges that people currently face are "complex and daunting." According to Dr. Bryant, common responses to environmental challenges are, paradoxically, inaction. To

combat this, the class considered the relationship between individuals and the environment, with a special focus on the way in which virtue and vice affect the human ability to flourish, and the role of the wider environment in that flourishing. Because the human relationship with the environment is more than individual, the class also considered the relationship of individuals to the groups to which they belong and the relationship of those groups to the environment.

According to Dr. Bryant, by the end of the course, his students had carefully considered a myriad of answers to the question, "but what can I do for myself, for my community, and for the environment." The goal of the course was to see more clearly both the good and the bad in your own personal conduct and in our society, and to reflect on how you might improve things. Another goal of the course was to empower students to become "better people."

The students each had varying experiences when it came to how the service-learning experienced connected to the academic material that they were exposed to in Dr. Bryant's class. Students each created a piece of creative work that reflected the academic learning and service that occurred during the semester. In addition to the positive social aspects of this service learning experience, students also were made aware of deeper environmental issues. The students reflected on the combination of their academic pursuits and service in the LIONS Garden; the students' perceptions about this now follow.

Andrew. Before participating at the LIONS Garden, Andrew "hated gardening" and "didn't see the point of doing it." Now, after participating at the LIONS Garden, Andrew understands how gardening is, "obviously important for cultivating and harvesting food." To illustrate this transformation, Andrew wrote a perspective poem on the garden for his "creative work."

Reflective

The word was born

in the blood,

it grew in the dark body, pulsing

and took flight with the lips and mouth.

- Pablo Neruda, “The Word” (Neruda, 1974).

As it dies, we move forward

The garden starts from beneath us

and I refuse to believe that

A garden can feed the world

This may not be thought by all but

“A garden is a grand teacher”

Is a lie, and

The only thing I will witness is withering and decay

Is the truth

Saying I see a planned space intended for pleasure

Is actually not what I see, instead

I see undeveloped land

I see dirt and seeds where factories and malls could be

I see insects and parasites where kids could be

I see potential wasted

The truth is

A garden has no function in modern society

A grave misunderstanding is that

They can improve our lives

In reality this is not the case

Gardens are no longer practical

This is the truth.

For Andrew, this poem illustrates that working in the garden changed his perspective, and he experienced a change of heart. Initially, the thought of gardening did not interest Andrew. However, after actually participating in service at the garden, Andrew began to gain a newfound perspective and reversed thinking. When the poem is read from bottom up, Andrew describes this as his transformation:

> When you read the poem from top to bottom it illustrates my initial reflection on gardening. I was initially pessimistic. I didn't want to garden. [I believed] gardening is essentially useless. Then at the end of it, the last line I say upon further reflection you reverse your thinking and realize how important the garden is. Then it reads from bottom up and it is super optimistic. It basically contrasts everything I said initially. And I thought that was kind of a creative outlook of approaching the garden and summarized view on the whole thing. Because my perspective did change from dislike to appreciation.

Andrew believed that the poem represents that working in the garden taught him a lot:

> It cleared up a lot of misconceptions I had about gardening, and it cleared up my ignorance about the whole thing. I did learn that it is more than just the aesthetics of it. Gardening does have a very obvious and important purpose.

Wendy. Due to a combination of the academic learning within Dr. Bryant's course and service in the LIONS Garden, Wendy made the personal decision to "give up meat" and become a vegetarian**.** For her creative work, Wendy created a cook book. Wendy chose ten different vegetables grown in the garden and captured pictures of each of them using a digital camera. Then, she searched for recipes that featured fruit and vegetables as the main ingredient. Most of the recipes were designed for vegetarian menus. One or two of the recipes had meat in them, because Wendy "tried to cater to everyone." Next, she constructed a cook book based on these ingredients and appropriate recipes. Wendy states that when she completed her creative work that she was "actually kind of proud of it."

Wendy decided to cultivate environmental virtues by remaining a vegetarian, saying that:

> I am going to stay a vegetarian. At first I wasn't eating any meat no matter what. However, this caused problems when I was at someone's house and I had to turn them down if they wanted to cook for me. I felt really rude when I would turn them down. If I am at someone's house and they are cooking meat at dinner I will eat it. Besides that, that is the only time I will eat meat from now on. Even after this semester ends, I won't make meat for myself, I won't buy meat for myself, and I won't order meat in a restaurant. The only time is when I am at a guest at someone's table. I'm not going to turn it down at that point.

Wendy is not sure if she will be a vegetarian forever, but wants to "stay away from meat" for as long as she can. Wendy does admit to "missing a good steak," but this has caused her to try new types of food. "Before I would just eat chicken and rice every day, now I have to figure out new things to eat, which is honestly more interesting." As a substitute for meat, Wendy eats a lot of milk based products for her source of protein. Wendy added that:

> I didn't know that much about fruits and vegetables before this semester. Working in the garden helped me broaden my knowledge of what is out there that I could eat. Once you commit to becoming a vegetarian for a certain time, you don't think about it anymore. It was good for me. I am glad I did it.

Karen. Karen thought the LIONS garden was a "great" service placement for this course because of its locality. In terms of service-learning at Lighthouse University, Karen had heard from other students about the numerous problems while equipping different service sites with student volunteers. Karen thought the LIONS Garden service-learning project was effective because students were serving on the Lighthouse campus. Karen said, "This project was unique in that it was right in our backyard and we didn't have to go to another site."

According to Karen, Dr. Bryant engaged his students in a class discussion that reflected the reading of Bill Mckibben's *Deep Economy* (2008). Karen explained that during this discussion, the class concluded that, "in order to sustain the future of our planet we have to go back to local communities:"

> Not only talking about food, but also in producing artwork and music and that sort of thing. In order to be sustainable we really have to become local. I think the LIONS garden is such a great example of this. For example, we have Sodexo on campus and they

> claim that they are local and they claim that they do good things for the environment. However, they have everything covered in plastic and our bananas are grown in Ecuador. And that's not local. Ecuador is not local. I think that promoting a community garden relates very much to a local economy.

Karen also learned that you have to cultivate environmental virtues, as virtue is engrained in every person. Yet, she believed that "we either choose to ignore it because it's easier and because we are lazy. And it is simpler to give in to our vices or whatever makes you happy." For Karen, sometimes it easier for her to give in to immediate gratification, like "being lazy" or "procrastinating." But, according to Karen, "this doesn't ever cultivate anything productive. It doesn't help you flourish. It just helps you get what you want." Karen admits that she was not a "philosophy person." However, she appreciated the connections between cultivating virtues and cultivating a garden, adding that:

> Instilling virtues, like what we talked about with the course readings of Aristotle and McKibben. Discussing how to cultivate virtues is similar to how you have to cultivate a garden. It's something that you have to work on. And you have to plan it. You have to water it. You have to make sure it gets sunlight. It's the same thing with virtues. It takes time. It's not an easy process. And I think that is something that gardening correlates to virtues. You have to cultivate virtue.

Karen's creative work reflected her learning in the course and in the direct service work. She constructed a visual artistic piece to "raise awareness and make a political statement." Karen named this assemblage painting *Crossroads*. Karen used different items from the garden. One side of the painting, which contained labels from the cafeteria, price tags, and receipts, was used

to portray "consumer America." On the other side of the painting, she used items from the garden like two stalks of corn. Karen wanted to show that humans are "at a crossroads environmentally where the governments and communities could either choose to go local or choose to continue to destroy everything we touch." Karen also used the images to talk about "roots and where our roots come from" in relation to "what we actually produce."

Nina. Nina believed that this service-learning project worked out well for her because it was related to Dr. Bryant's course. Nina thinks that Lighthouse students feel overworked with schoolwork and face "social pressure" to be "extra involved" in meetings, service, and other obligations. She thinks that adding a service requirement to a course is difficult because people are not as invested. Nina believes that if a student is busy, there could be a failure to learn from the service experience. She also believes that students do not see an educational benefit to that service stating that, "This is just one more thing I have to do."

Nina suggests that if a professor decides to operate a service-learning component, the professor should make sure that the service makes an academic connection to the course. Normally, Nina believes that students are forced to find some connection when they may not be inspired to do so. She believes that often students are not exposed to service regularly and fail to see the intrinsic benefit in conducting service. Nina suggests that professors should continually reconnect the class back to academic themes and connect it with the service portion of the course. Nina states:

> If professors don't invest, students won't understand what you want them to understand. This was my first service-learning class personally and it worked out great for me. The service experience directly related to what we were learning. We were learning to engage

in environmental issues. Whether you like gardening or not, you were exposed to what we were learning about with the environment.

Nina added that, “Dr. Bryant is a great professor.” She believed that the service was directly connected to the class content:

> A lot of the stuff we did discuss in class was evident in the gardening. I wrote on interconnectivity in my virtue paper. That is a big component of his class. I wrote on interconnectivity and how we need to value the very space that we occupy and that provides us with so much. Dr. Bryant touched upon a lot of that. And I like that there was a philosophical as well as an environmental influence in the class.

As a business major, Nina said that, “People don’t talk about ethics in the business school.” Nina wanted to speak up more in class, but the philosophical concepts introduced were too complex for her to articulate in front of her peers. Nina learned that virtues were about:

> You may not be doing a bad thing, but that doesn’t mean you are doing good or you’re a good person. You have to go above and beyond, gather the right information so you can make an informed decision about your purchases, an informed decision about the way you live your lifestyle. If you only eat organic, you may realize that not all organic means good. Being as educated an informed as possible. So you can just fully say I am a good person because of this. I personally think I am always a work in progress. It’s something you have to do for the rest of your life. It is a lifestyle.

Nina was the only interviewee that volunteered to present at the Student Sustainability Symposium and Nina was also the only interviewee that attended the College Garden Road Trip. Accordingly, Nina presented about her experiences on this trip at the

Student Sustainability Symposium, and her description of this process follows: "I didn't really prepare for the student symposium. I did it last minute. I just went up and said what I remembered and what I took out of it. It was really nice to share my experiences about the College Garden Road Trip to the group."

For her creative work Nina made a book. She made the cover of this book out of "recycled stuff." She cut out pictures of food from different magazines and assembled a collage. "I illustrated the whole recycle thing, like reusing products. I posted pictures of junk food like chips, healthy food, whole grains, meats, and vegetables." The cover of Nina's book revolves around food. The inside contents of her book contains a picture of a tomato, and this "represents how someone who isn't aware of food justice issues sees a tomato." When the reader opens the inside of the tomato, they will see the tomato, but they will also see a particular issue related to the tomato or crop: "Like the pesticides that are used." To illustrate pesticides, Nina placed a picture of the chemicals and used the text to illustrate: "that if you aren't aware, it's just a tomato… But if you aware there are far more issues, like chemicals used that hurt our body." The next picture that the reader encounters is a picture of a coffee mug and the image of a poor farm worker. Nina wanted to use these images to illustrate that if you purchase genetically modified food, that it negatively affects farm workers who are "working hard to provide something good for you."

Stacy. Stacy saw the value in having the course connect with LIONS Garden. She thought it was "good" that this class required service:

> All the things we talked about in Dr. Bryant's class about how gardens bring communities together. I definitely see that even in this small plot here at Lighthouse. I

never had a class before that required service and I feel if I have I would have been involved sooner.

Stacy also saw the connection of the environmental ethics course with the service-learning in the LIONS Garden. During class, Stacy said that Dr. Bryant would speak about how gardens bring communities together. She added that, "I definitely see that even in this small plot here at Lighthouse. I never had a class before that required service and I feel if I had, I would have been involved sooner."

Stacy did a photo montage of the garden. She describes the process as a therapeutic one:

> So I took some photos of the plants and used a picture of Vandana Shiva. I submitted it for printing on a website. I incorporated different quotes and ideas that I absorbed through Dr. Bryant's class and manipulated it into the word "community." And then I used the pictures to create a collage or a montage of the garden.

Students' Future Involvement in Gardening

With the exception of Andrew, all the students interviewed said they would be involved in gardening in the future in some capacity. Although Andrew admitted that he will "probably not garden in the future," he did gain an appreciation and deeper understanding of what gardening is and values it more now: "It's just kind of not my thing. But I do appreciate and I think there were a lot of people there with a similar thought process."

After Nina graduates from Lighthouse, she wants to start a small garden at her apartment. When Karen graduates, she wants to "come back and volunteer at the LIONS Garden." When Wendy returns home to Illinois this summer after graduation, she promises to help her mom in

the garden. Stacy wants to continue "doing service like this" and regrets not getting involved in the LIONS Garden sooner:

> I will absolutely garden in the future. Gardening will probably be one of the things I look for when I am finding a community to live in after graduation. I want to find a community that has a community garden or that sort of thing. It would be a good project to start if I cannot find one close by. My hometown is super small and super country. A lot of people there do have their own gardens but it is more preserved Hawaiian crops, it's a little different than here.

Summary

In summary, this chapter presented the findings of this action research dissertation. In Chapter 5, the final chapter, the events and the student responses described in the chapter are analyzed in order to gain insight into the future logistical needs of the LIONS Garden. In addition, a deeper understanding of participant perceptions is explored in order to understand how the service-learning project impacted the students and vice-versa. Based on this information, new categories are creatively generated to inform future environmental curricular initiatives and service activities on the campus of Lighthouse University.

CHAPTER 5

ANALYSIS

Introduction

This chapter presents an analysis of the findings and the internally generated recommendations in order to benefit the future of the LIONS Garden at Lighthouse University and beyond. The following sections, which are organized thematically, are intended to explore the findings that were illustrated in Chapter 4. These sections emerged from the process of conducting a thematic analysis which is described in Chapter 4. Based upon the knowledge generated through this service-learning project, future research is also recommended.

Ultimately, the findings showed that the participants positively responded by engaging in the garden. The students appreciated many things about gardening. For example, the students appreciated the social benefits that gardening provided; they appreciated eating fresh produce, and enjoyed the luxury of serving on campus. Most students were inquisitive and eager to help out in the garden. However, not every student followed through with his or her service requirements, despite the university's strong commitment to student service. The Student Sustainability Symposium provided an opportunity for students to reflect on their ideas and learning that occurred throughout the semester. And Dr. Vandana Shiva's visit gave the students an opportunity to engage with a world leader that awakened the Lighthouse community about the benefits of local gardening.

Student Experience

The following section analyzes how the students experienced this service-learning project.

Student Transformation

Interviewees indicated that they experienced a certain amount of personal transformation after working in the LIONS Garden. One participant indicated that when she graduates from Lighthouse University, after she finds out where she would be living next, that she wants to find a community garden to join. Another participant was transformed for life when she decided to become a vegetarian. One participant was moved by the working in the LIONS Garden, and decided to get a job as one of the four Work-Study students responsible for taking care of the LIONS Garden on a part-time basis. Another student who participated on the ***College Garden Road Trip*** also took a position as a Work-Study student responsible for caring for The LIONS Garden.

Many students did not know very much about fruits and vegetables before this semester began, and the garden helped broaden their knowledge of what they could eat. Participants also learned that part of social justice is eating locally and eating a good diet, stating: "Knowing that you can provide healthy meals for people that need them. You can do that with the garden."

Other participants were transformed during the service project, learning that gardening is more than just the beauty of it, that it is important for cultivating and harvesting food, and providing sustenance to those in need. For one student, his mindset totally changed from believing that gardening was "essentially useless" to understanding "how important the garden is." Initially, he was reluctant to participate in gardening. Thus, his final comments are a complete transformation from his initial perspective. This may provide evidence that participating in a gardening experience with its ancillary curriculum coupled with reflection can truly create a difference in a student's engagement and ethics.

Recommendation. I suggest that future service-learning projects allow for more student creativity during reflective exercises. I argue that these unexpected moments of student transformation occurred as a result of students being challenged to reflect on the combination of their learning from the academic coursework and the time spent working in the LIONS Garden. This process of working to display a creative work, in the Student Sustainability Symposium allowed students to think outside the box in order to convey concepts that were based on individual discovery. Accordingly, students pushed forward with their own individual learning and changed personal trajectories.

Culture of Service

As previously stated, Lighthouse University promotes student service on campus. Student service is a large part of the social life for undergraduates, and there is a certain amount of social pressure for students to be involved in service. Despite this, many of the students participating in this service-learning project had not participated in service activities at Lighthouse before enrolling in Dr. Bryant's class. Furthermore, a small percentage of the students were not proactive in attending their garden-based service requirements.

As stated in Chapter 2, service-learning research suggests that participation in collegiate service-learning may produce character-related changes in four areas: (a) social responsibility, (b) awareness of social problems, (c) meaningfulness of college life, and (d) expectations for future community service (Reed, Jernstedt, Hawley, Reber, & DuBois, 2005). For the students who fully engaged in this service-learning project, their ethical awareness of environmental justice was heightened. This fulfilled the problem of this study, which stated institutions are not preparing citizens prepared to effectively respond to environmental injustice (Andrzejewski,

Baltodano, & Symcox, 2009). However, not all students fully engaged, so this is a problem still to be addressed.

According to the student interviews and course engagement, this service-learning project enriched the participants' college experience and prepared them to make local contributions to their community, including future participation in community gardening. While character change took place to some small degree, these changes would not have taken place without the component of reflection. The reflective requirement of service-learning, embedded in an environmental ethics course and the participants' and the researcher's engagement with this, allowed the gardening experience to become a change agent in the students' lives.

Recommendation. Although it was clear that Dr. Bryant's students significantly impacted the workdays in the LIONS Garden, there has been little future programming designed to build off of this momentum. Based on the positive responses relating to how the direct service aligned with the course curriculum, I recommend that future service-learning projects be constructed in order to sustain the work of Dr. Bryant's class. A continuous service initiative would ensure an increase in the sustainability of The LIONS Garden because each semester, a new class could learn from the previous class and further build on previous learning.

In terms of requiring service, professors need to hold students accountable to complete service. This can be through technological methods, or others – but students need to be required to show that they have completed service. In this case, the professor felt that an online discussion board was too labor intensive for the students, but I believe that this would have helped with student engagement with the service. It would have also helped students communicate with one another; it would have helped students reflect on their service outside the symposium, and would

it would have properly kept track of the service hours that students spent in the garden.

In addition, allowing students to engage in a participatory action research project would have been more effective than simply having a single action researcher conduct this study. Having students work together on the research would have had the students engage more deeply in the problem, instead of just doing service, they would have developed research skills to contribute to solving the problem. Having all thirty students investigating issues related to the garden would have been more impactful to the garden and the students.

Social Benefits of Gardening

As students worked at the garden, conversation always occurred, and a social culture developed amongst the student gardeners. The findings indicate that the participants saw the value in the community that they established through their collective labor experiences in the garden. Students realized that there was a communal based relationship associated with gardening, which forced students to bond with others in Dr. Bryant's class. Some students found the social benefits to be the garden's greatest asset. They interacted with their classmates in Dr. Bryant's class, and other people involved with the LIONS Garden that were outside of Dr. Bryant's class, whom they would have never gotten a chance to talk to. Here, Okvat and Zatura's (2011) suggestion is enforced, who stated that when people create and protect community gardens themselves, it straddles grassroots community activism, urban agriculture, environmental activism, and a more individualized search for meaning, spirituality, and community. This important work began to form in Lighthouse garden.

Although the students overall were shy when they began the service experience, the students began to open up and started to build an alternative community. The LIONS Garden

represented a place where students could be free to express themselves. The students expressed their appreciation for not being told exactly where to place each plant. The students began experiencing feelings of ownership for their work in the LIONS Garden, as some students returned to future workdays despite not having a service requirement to fulfill.

Recommendation. The Lighthouse University campus is a challenging place for many students to make friends. The social clubs and Greek clubs are considered exclusive and it is hard for many students to become accepted into these groups. Therefore, I recommend intentionally encouraging social relationships, bonding, and friendships through future garden-based service-learning experiences. Wendy stated that she felt more excited to serve at the LIONS Garden if she knew her friends were going to join her. The LIONS Garden has the potential to bind people together around a healthy community building activity.

Political Issues Uncovered through Service-Learning

The following section analyzes a few important political issues that were raised during this service-learning project.

Race and Class

During her visit, Dr. Shiva talked about how poor farmers of color are often vulnerable to racism across the world. Through this service-learning experience, I began to envision how working in the LIONS Garden can touch on many of these issues of race and class. Based upon the service-learning events, the participants' previous histories, the participants' understanding of the Lighthouse culture, and their perspectives of gardeners, I began to see the LIONS Garden as a vehicle that can help to oppose racism and classism.

Participants characterized most of the students at Lighthouse as privileged and sheltered. With the exception of one student, who described herself as a "lower-income Latina student," the rest of the interviewees all came from an upper-class background. Participants did not believe that students at Lighthouse would choose to actually garden "for a living or out of necessity," in part because they would not make enough money, stating that: "People who have money wouldn't want to go into it." Growing up, many of the interviewees had gardeners who took care of the landscaping, and none questioned this practice. One participant specifically mentioned race and remembered having family gardeners come to his parents once a week who were all of a Hispanic background, claiming that his family liked his gardeners, treated them "really nice," and considered them to be "part" of the family.

I began to look at this thinking as privileged. Moreover, many students at Lighthouse grew up with the privilege to hire gardeners, and this privilege allowed them to overlook the gardeners who take care of the campus. The gardeners at Lighthouse are often seen and not heard. This assumption that all Southern California residents believed that all gardeners were of Hispanic background, revealed ignorance about issues of race and class, and a lack of education around this.

Other participants admitted that the negative perception of gardeners needed to be changed, but that students "did not know what to do about the situation." There have been student activists on campus who have tried to provide services for Lighthouse's low-wage workers. But the overall feeling from the students is that they "live in a nice environment" and "issues concerning the poor are irrelevant to them unless they travel to other parts of the community."

I believe that many of the students are unaware as to the amount of work it takes for these workers to create this nice environment that the students enjoy. Thus, despite a certain degree of political awareness, several of the participants held this assumption, which ultimately illustrated a true race and class divide that is present at Lighthouse University.

Recommendation. The gardeners employed by Lighthouse University are seen on campus cultivating the landscape, but are rarely heard from by the students. This research revealed that people, including the participants of this study, consider the gardeners on campus as lower class. It is clear that because many of the students at Lighthouse come from privileged backgrounds, most students do not place a high value on the profession of gardening, and consider physical labor as work only for those of a lower class.

However, I believe that the LIONS Garden has the potential to be an environment where the gardeners who work at Lighthouse University can come together with students and be friends. When the LIONS Garden needed heavy technical work that the students were unable to complete, Dr. Randall requested that the gardeners help out. One example of this was when a team of gardeners did the fine technical work of installing an automatic drip irrigation system in all of the raised beds. Despite this, there was limited social connection between the gardeners and the students working in the garden.

I recommend that the gardeners employed by Lighthouse University be intentionally placed as co-leaders of the LIONS Garden Club along with the student leaders. Although the club is student-run, which many of the students enjoyed, many of the ideas that the club needs exist in the heads of the gardeners. By including the gardeners as garden consultants, it could

grant club members access to generations of expert knowledge and technical know-how, and help begin to bridge the race and class divide.

Having gardeners working alongside the students would create an opportunity for students to learn from people who are of a different race and class background as themselves. Hopefully, these interactions could help to breakdown student misconceptions and will foster a newfound dignity for the gardeners who work to create such a beautiful environment at Lighthouse. It will also foster a new type of community at Lighthouse University, a culture in which people of all races and class backgrounds work together and build relationships with each other based on equality and a love of the earth. Hopefully, students will reconsider the status of the gardeners and their presence on campus. It is my hope that through working in the LIONS Garden, the students will start looking at the position of gardener with reverence, and not pity.

Further, there are underlying food justice issues that future service-learning projects can address at the LIONS Garden. For example, farmworkers of color still face discrimination and they are often exposed to poor working conditions (Bell & Feld, 2013). Also, neighborhoods of color often lack healthy food options; which are called food deserts (Bell & Feld, 2013). Achieving racial justice in the food system will require a multiracial alliance of people raising awareness of the current injustices and work collectively to end them (Bell & Feld, 2013).

On the campus of Lighthouse University, there is an active Black Student Union and an active Latino Student Union. I recommend that the LIONS Garden Club partner with the leaders of these organizations in the hopes of exposing many of the members to gardening. I was even able to locate a professor studying the impact of urban food deserts at Lighthouse University. The Lighthouse University School of Education also contains scholars interested in practically

addressing issues of race and class in their research. I recommend that LIONS Garden reach out to these scholars for ideas and mentorship connected to environmental stewardship and its relationship to race and class.

Conclusions

Unfortunately, in 2012, Dr. Randall left his position at Lighthouse University and relocated to Northern California. Father Marvin also left his position at Lighthouse University and relocated to Northern California. These two men were key contributors to the early success of the LIONS Garden. As Lighthouse University actively searches for a new Sustainability Manager, the members of the LIONS Garden Club and the work-study students have continued to work on the LIONS Garden.

Two participants in this service-learning project went on to work for the LIONS Garden within Federal Work Study positions. Recently, these students celebrated the two-year anniversary of the LIONS Garden with a garden picnic. The Lighthouse University community was invited to enjoy a picnic lunch in the garden with music. Guests were encouraged to bring their own lunch, utensils, dishware; snacks and drinks were provided. At this event, Dr. Stevens stated that:

> When you build a statue you put it in and it stands on its own, but when you put in a living garden it requires students and it requires a community to maintain it. So this garden is only as strong as the love people bring to the garden. When we started the LIONS Garden we were hoping that we would have enough interest to it keep going. And clearly the momentum is continuing to build. The intuition was right, this was the right thing to do and we are going to continue to build from here.

Recommendations for Future Research

- Research on a broad range of university gardens and how they operate and how long have they have been sustained.
- A more in depth qualitative study about the nature, foundations of the social benefits of community and university gardening.
- A review of other university garden initiatives and their impact on recruitment, retention and transformation of social consciousness.
- A study that explores the motivation of service learning – do students get more out of it when it is required or when it is voluntary?
- A comparative analysis between college assignments that require service with a grade incentive, and assignments that include service but do not require it.
- An in depth study on the intersection of race and class in university gardens.
- Research on leadership and university gardeners – in what way and to what degree do universities incorporate the funds of knowledge of staff gardeners into student run gardening initiatives?
- An action research study on the creation of an Outdoor Kitchen Garden.
- The creation of a local Tongva plant database and a complimentary Tongva garden housed in the LIONS Garden.
- Increase of students' technical gardening skills by developing a local Master Gardener certificate program.

Appendix A

Course Syllabus

PHIL 325: Environmental Ethics | Fall 2011 | T/Th 3:00-4:15

I. Introduction. The professor reserves the right to alter this syllabus in order to serve the goals of the course. I. Introduction The environmental challenges that face us are complex and daunting, so much so that one common response to these challenges is, paradoxically, inaction. "What, after all, can one person do?"

Note that this is not the "survey" syllabus that I often teach in my PHIL 325 (Environmental Ethics) courses. We are not going to spend a great deal of focused time on the science of climate change, environmental justice and environmental racism, the meaning of wilderness, and so on. Rather, we are going to focus on environmental virtue ethics.

In this class we will consider the relationship between individuals and the environment, with special focus on the way in which virtue and vice affect our ability to flourish, and the role of the wider environment in that flourishing. Because our relationship with the environment is more than individual, we will also consider the relationship of individuals to the group(s) to which they belong and the relationship of those groups to the environment.

By the end of the course, students will have carefully considered myriad answers (individual, social, and political) to the perplexing question: "but what can I do (for myself, for my community, and for the environment)?" This class will help you to see more clearly both the good and the bad in your own personal conduct and in our society, and to reflect on how you might improve things. Thus, the goal, or "one goal" I should say, of this course is nothing short of empowering you to be a better person.

This class is not for everyone. Most of the work will be reflective rather than regurgitative. Successful students will be motivated learners--the sort of students who independently pursue ideas outside of class, think carefully about them, and engage others in discussion out of interest rather than the Damoclean sword of impending exams. It's true that you need a core ethics class to graduate, but you don't need this class. You should really only take this class if you are enthusiastic about the idea of self-improvement and the role of the environment in your well-being. Otherwise, you are going to find the work for this class, which is substantial, onerous.

II. Course Goals. Successful students will…

•Understand the variety of environmental challenges facing us, the ways in which individuals contribute to these problems and the ways in which individual may contribute to solving them, and the relationship of an individual person to the community and the wider environment.

•Value the role of virtue in human flourishing, and the way in which the environment frames both individual and community well-being.

•Engage in a variety of exercises of environmental praxis and human virtue.

•Undertake close and careful reading of ancient and contemporary texts, analyze philosophical positions (both in individual reflection and in dialogue with others), and clearly articulate their views in well-written and well-reasoned papers.

III. Authors and Texts. This semester we will be reading together the following texts. Completing each day's reading prior to class is a necessary part of class preparation and bringing your copy of the text to class is necessary part of class participation. •Aristotle, Nicomachean Ethics

•Bill McKibben, Deep Economy

•Phil Cafaro and Ronald Sandler, Environmental Virtue Ethics

•Ronald Sandler, Character and Environment

•Other course readings will be made available via the university's electronic reserve system (E-res).

IV. Grading/Means of Evaluation You begin our class with a grade of "F." Think about it. If all you did during the semester was show up the first day, you would fail the course. If you want a better grade by the end of the semester, you will have to earn it. Nobody receives a grade in my classes, a misleading construction that implies the student is passive and without responsibility in the matter; grades are earned. My approach to the unpleasant issue of grading is summed up well in Goethe's pithy claim: "Treat people as if they were what they ought to be, and you help them to become what they are capable of being." You will not earn an "A" unless you approach this class in a serious manner. I've had other roles in life where I barked orders like a drill sergeant. I choose not to teach in that manner for pedagogical and ideological reasons. Nevertheless, I expect you to approach this class with a high degree of commitment, seriousness, and effort, and I expect you to do so without me playing the role of your wet nurse. I put in a great deal of effort into preparing this class, and I am genuinely happy to help you do as well as you can. However, I expect you to take full responsibility for all of your actions. Remaining in this class after the add/drop date indicates a willingness to abide by all of the guidelines contained in this syllabus and in the other materials regarding class expectations made available through my website. Your final grade in the course will be determined in the following manner:

 Attendance: 0%*

 Participation: 15%

 Service-Learning Component/ Service Work: 0%

 Creative Work: 15%

 Philosophical Journal: 15%

 Tutorial Discussions: 10%

 Peer Review: 5% 4.

 Paper: 40%

(1) Attendance and (2) participation in service as part of the CBL component of the class are required. However, I'm not going to give you points toward your final grade for simply showing up on time and having a pulse. Put another way, perfect attendance will not help your grade in any way, but less than perfect attendance will certainly harm your grade (via a radical reduction in the participation component of your final grade). Note bene: Keep and file all materials that I hand back to you (you should do this for every course you take). In the unlikely event that there is a disagreement about your work (e.g., I only have a record of half of your journal entries, while you claim to have done all journal entries on time) you will need to produce evidence to back up any request to reevaluate your grade (e.g., all your original journal entries, not copies, with my comments).

In this class, participation includes: (1) regular, active participation in class discussions, (2) attentive, respectful listening to others in class discussions and (3) being prepared to participate in class (including bringing the relevant text to class). Class attendance is mandatory; it is a necessary, but not sufficient, condition for a good participation grade. I will not waste class time taking attendance; however, you will not be able to get a good grade in this class without

attending the class sessions. Participation is graded in terms of both quantity and quality. And, yes, some students fail participation. Neither one or two insightful comments over the course of 15 weeks nor regular, thoughtless comments will earn an "A." Thus, your goal here should be regular, thoughtful contribution to class discussion. In addition, I will regularly call on people even if they have not raised their hand to indicate their desire or willingness to participate. Thus, you must be prepared by doing the reading before class for each and every class meeting, and ready to think on your feet and contribute to the discussion. For example, I may ask a student to summarize the reading or a part of the reading, to think of an example or counter-example, to answer a question that comes up in class, and so on.

There will be two required out-of-class events at which attendance is mandatory (and which therefore count in your grade): (1) Tuesday, November 1 (time TBA)--the Bridgebuilder Award, which will be given to Vandana Shiva; (2) Thursday, November 3 (during normal class time)-- Student Sustainability Symposium. The CBL ("community based learning" or "service learning") component of the course will consist of two elements: (1) the actual service work during the semester and (2) a "Creative Work" reflecting on that service in light of the themes, concepts, and issues we are discussing in class. In terms of the former, you will be required to complete 10 hours of work. The goal is to reflect on the work experience in light of the themes we will be discussing in class. Ideally, this cross-pollination should make both the work and the class more rewarding. Toward the end of the semester, you will be required to submit a "creative work" that incorporates reflection on your service placement in light of the themes we've discussed in class and those you encounter in the reading. The range of possible projects is extensive, and could include things like artistic works, the construction of web pages, creating a

short film, or any of a number of different kinds of writing. Your creative project must be presented in some form and, therefore, accessible to others in our class. This can take place in a variety of ways.

You will be keeping a philosophical journal this semester. This semester I will be challenging each of you to either cultivate a virtue or uproot a vice. If you have ever tried to give up a bad habit, or develop a good habit, you know how genuinely challenging this will be, which should give you more than enough to write about in your journal. Follow this link to a page with more detailed journal guidelines. The journal should be reflective (e.g., reflections on how you are dealing your attempts to cultivate a virtue or uproot a vice, your aspirations or hopes as they relate to subjects under discussion in class, etc.), not simply practical (e.g., a record of what you did that day). Each week (beginning on September 8 and ending on December 8) you should write about 500 words in your journal (this is about two double-spaced pages). The journal will conclude with one longer entry of about 1250 words (or about 5 pages) that will serve as an opportunity to reflect on your journey during this semester, how far you have come, how far you have to go, how you feel about what you have accomplished or failed to accomplish, how your changing behaviors are impacting your flourishing, and so forth. Your grade on the journal will take into account both your timely completion of the weekly entries and a closer evaluation of your final entry, which will be considered and evaluated like any other paper. Each Thursday, in class, you should hand in a copy of your journal for that week. My weekly assessment of your journals will be concerned with (a) recording that you have completed the assignment and (b) that you are being properly reflective in your writing. I won't generally comment a great deal on

the weekly submissions, though I will occasionally speak to you about your journaling and will definitely call you out if your reflections are trivial or truncated.

Your final five-page entry, due on December 8, will be a report of sorts on the semester: your reflections on your attempts to cultivate a given virtue or eradicate a given vice, including reflecting on the difficulties (individual, social, etc.) in doing so, the rewards, if any, associated with the exercise, whether or not you desire to continue with the virtue once the semester has ended, your desire (or not) to do so, etc. This final entry will be graded like a paper, which together with the recording of the weekly submissions will make up your journal grade. The tutorial discussions will be intense, small group discussions focused on the virtue you have chosen for your term paper (see below). At the beginning of the semester, I will assign you a tutorial group. Each tutorial group will meet with me twice during the latter half of the semester. Although the tutorial discussions are related to your virtue paper, the two grades are distinct. Thus, it is possible to earn an 'A' for the tutorial discussions and nevertheless fail the paper, or vice versa. However, it is my hope that careful attention to the tutorials will, in most cases, lead to significantly better papers. You will provide me with a written document for each session (focused on one aspect of the virtue paper, which I will announce prior to each session), which we will discuss in-depth and at length. You should be prepared to engage in thoughtful, serious discussion of the topic. Your grade in this part of our class will be determined not only by your 'performance' in the discussions (i.e., the clarity of your ideas, your constructive criticism of your colleagues, your ability to respond to critique and defend your position, etc.), but also by the seriousness with which you engage in the process (i.e., timely preparation of your written

statement for each session, serious discussion of your topic as well as the topics of your colleagues, etc.).

Although I will be open to mutually agreeable scheduling with each tutorial group, experience has taught me that the only way to avoid scheduling conflicts—considering approximate five student schedules per tutorial group, plus my own schedule—is to schedule the tutorial meetings either very, very early in the morning or very, very late in the evening. If individual groups can avoid such measures, well and good. However, if the only time all the members of your group can meet with me is at 7:00am or 10:00pm, you will have to accept that reality. This will certainly inconvenience me, to say the least, so I expect that you will also accept the inconvenience to your schedule.

The tutorials will meet on the following schedule:

•First Discussions: October 26-28

•Second Discussions: November 16-18 The Virtue Paper is described in detail here. Please follow the guidelines for this paper meticulously. If you have any questions, ask. Because many students struggle with time management and/or procrastination, the paper will be developed in several stages.

•October 11: Choose your topic and report it to the professor. •October 26-October 28: First Tutorial Discussions.

•November 3: Student Sustainability Symposium

•November 16-November 18: Second Tutorial Discussions.

•Peer Review December 1: Turn in two copies of your paper for peer review and pick up papers from two other students to review. December 6: Return the carefully corrected papers, along with

a two-page response, to the students whose papers you corrected. Receive your papers back from the students who reviewed it.

•December 12: Final paper due at 12:00pm. The peer review process (see above in the schedule for the crafting of the virtue paper) will be an opportunity for you to improve your paper and to help your colleagues improve theirs.

The peer review process will include (1) handing in your paper to be corrected by two of your classmates, (2) receiving two of your classmates' papers to correct, and (3) revising your paper. For each paper you receive, peer review will consist of: (1) a careful reading of the essay; (2) correcting errors in grammar and usage, as well as problems with style, diction, flow, etc. (these corrections should, for the most part, be made on the actual essay, in the same manner that your professors correct your papers); and (3) a one-page, single-spaced response to the essay that focuses on larger issues such as the logic of the argument, possible objections or counter arguments, and so forth. You will staple your one-page response, with your name clearly printed, to the front of the paper you are reviewing and return it to its author by the beginning of class on December 6. Your peer review will be evaluated in the following manner. First, the author whose paper you are reviewing will rate the thoroughness and helpfulness of your review on a scale of 1-10, and communicate that rating to me. Second, when I grade the final paper, it will be in the context of the comments made on the previous stages. To make this possible, when you hand in the final paper, you will also hand in (1) the original, corrected copy of your first tutorial submission, (2) the original, corrected copy of your second tutorial submission, (3) the two original, corrected peer-reviewed drafts, along with the one-page commentaries, from your peer reviewers. To make things clear, while you will get various drafts and sections of your paper

returned with comments during the semester, when turning in the final draft you will turn in a folder including the original copy, with comments, of every single stage of the paper. Save every bit of work you do for this class.

V. Some Notable Policies or Requirements- Although there several other important guidelines and policies on my webpage—which, as indicated above, you must read—the following are worth repeating here either due to the frequency of the relevant offense or the degree to which the relevant offense irritates me. If you actively text message or otherwise use a mobile device in class you will fail, fail, the entire participation grade for the semester. That is, you will receive no credit whatsoever for the 15% of the grade associated with participation and the highest grade you will be able to earn in the class is a "B," assuming every other aspect of your work is, literally, perfect. "Active" use is not the same as carelessly allowing your cell phone to ring (which will still impact participation in a less dramatic way). I am not joking; do not test me on this. Activate and use your lion.lmu.edu email account. This is the only way I will contact you, and important information relevant to our class may be communicated to you via email. If you use another account, have your email forwarded. Figure this out and test it; it is not my responsibility to make sure your email account works.

VI. Academic Integrity- The University expects all members of its community to act with honesty and integrity at all times, especially in their academic work… It is the student's responsibility to make sure that his/her work meets the standards of academic honesty. Breaches of academic integrity will not be tolerated in our class. Cheating, plagiarism, and other related offenses are an insult to your classmates and a disservice to yourself. In any written assignment, you must clearly cite all outside sources that you use. This includes both direct quotes and

borrowed ideas taken from any other source (author, speaker, etc.). Clear citation requires both that you cite all outside ideas and statements and that your citation enables me to locate your source. Please refer to a recognized manual for the writing of term papers for help with acceptable methods of citation (e.g., The Chicago Manual of Style), and please ask me before you turn in an assignment if you have any questions. To make things perfectly clear, any coursework that, in my estimation, attempts to represent work that is not your own as your own will result in a failing grade in the class and the immediate notification of the appropriate dean.

Appendix B

LIONS Garden Safety Tips

This guide was prepared for the students of Dr. Bryant's Fall 2011 Phil 325: Environmental Ethics Course. This guide is meant to aid in the protection of students who are participating in garden-related activities. Please read over the following safety tips before participating in gardening-related activities:

1. Wear gloves when working with shrubs and bushes.
2. Wear sunscreen while you work outdoors.
3. Wear protective clothing to avoid sunburns, insect bites or stings.
4. Wash the clothes you wear during the service activities before wearing them again.
5. Wash hands after participating in gardening-related activities.
6. Exercise caution when handling tools.
7. Store tools away after use.
8. Always carry a bottle of water and drink plenty of water while serving.

Appendix C

Sample Service-Learning Agreement

Course Title: PHIL 325: Environmental Ethics

Student Name*: _____ Student ID#*:

_____

Agency/Placement Name (branch location, if applicable)*:

_____

_____

Supervisor Name (first & last)*:

_____

Agency Address* and phone:

_____

_____

_____

_____

* All areas must be completely filled.

The purpose of this Service Agreement is to clearly communicate the goals and expectations of the service activity between the student and the placement supervisor. Please fill this form out together!

SECTION I: GOALS & EXPECTATIONS (please initial next to each to indicate your understanding!)

Professor's stated goals for the student's placement experience: The service-learning

component of the course will consist of two elements: 1) the actual service work during the semester and 2) a "creative work" reflecting on that service in light of themes, concepts, and issues we are discussing in class. The nature of the service-learning component and "creative work" that will reflect on it are currently being finalized, but you can expect about 8-10 hours of service work over the course of the semester.

Supervisor is expected to:

-Review professor's goals (above) and place student in a role complementary to these goals.

-Clearly communicate the tasks and responsibilities of the student workers.

-In conjunction with student, agree to a regular schedule for completion of the student's hours.

-Train the student workers to perform the tasks competently and to supervisor's satisfaction.

-Provide feedback to the student concerning the student's job performance and areas of improvement.

-Complete and sign the Mid-Term & Final Evaluation forms provided by the student.

-Notify the Lighthouse University if a student is failing to attend or perform competently.

-Maintain open lines of communication with student for feedback and constructive criticism.

Student's Initials: _____

Supervisor's Initials:

Appendix D

Interview Protocol

1. Describe the kind of service activities that were you involved in this semester.
2. Have you done service before?
3. Describe the process of preparing for the student symposium.
4. Have you done gardening before?
5. How did the service generally make you feel?
6. Describe the process of creating the "creative work."
7. How did the service-learning experience advance your technical (e.g., physical skills acquired) literacies?
8. How did the service-learning experience advance your political (e.g., academic knowledge as it relates to service) literacies?
9. How did the service-learning experience advance your cultural (e.g, knowledge of different genders, races, and cultural groups) literacies?
10. Describe your experiences working with a community volunteer.
11. Describe how the university garden connects to the "social justice" mission of the university.

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