

The Tip of the Iceberg Lettuce

What direct and indirect factors enable knowledge and skill sharing in community gardens?

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(30hp/credits)



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Masters Thesis submitted in partial fulfillment of Lund University's International Masters Programme in Environmental Studies and Sustainability Science (LUMES)
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Abstract

Concerns about the decline in knowledge concerning food growing stemming stem from the Green Revolution, as well as the rapid urbanization since the beginning of the 20th Century. There is a gap in the literature about community gardening in industrialized English-speaking countries, and since sharing of knowledge is a well-documented achievement of community gardens, the aim of this thesis is to find out what direct and indirect factors enable knowledge and skill sharing in community gardens.

Using action research methodology, four gardens in Calgary, Canada were used as case studies, in which a total of eight participants were interviewed. This was complemented by a city-wide questionnaire for community gardeners.

Encouraging personal satisfaction and using appropriate practical approaches were direct factors, and creating a positive atmosphere in an appropriate space, developing networks, and securing resources were indirect factors contributing to knowledge and skill sharing in gardens.

Outcomes included how the roles gardeners take could increase social capital, why inter-garden networking is not thought of as a priority, and that Reflexive Learning is a useful way to approach the subjective aspects of gardening. Possibly the biggest contribution is that knowledge and skill sharing is merely *the tip of the iceberg lettuce*, and has unique synergies where it is dependent on and contributes to these direct and indirect factors. Finally, proposed action and further research are suggested.

KEYWORDS: *Social development, Urban agriculture, Action Research, Integral Education, Mixed methods, Canada*

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List of Abbreviations

CA – Community Association

CGRN – Community Garden Resource Network

STP – Same Ten People

UA – Urban Agriculture

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Chapter 1: Introduction

Given the rapid urbanization of the 20th Century, people are becoming increasingly concerned with reconnecting with the food sources they are finding themselves distanced from (Campbell, 2004; Clement, 2010; Firth et al., 2011). One strategy that is becoming increasingly popular in urban areas is community gardening (Guitart et al., 2012). Community gardening has its roots in the early 20th century in the USA, as a result of “the social, environmental, and economic climates of the time” (Draper & Freedman, 2010, p. 459). These blossomed into victory gardens as a means of coping with food shortages during the Second World War, but declined in popularity after this until they made the comeback in the 1970s, carrying on until today (Draper & Freedman, 2010; Saldivar-Tanaka & Krasny, 2004).

Community gardens have a shared purpose: to bring people together over growing their own food and other plants (Holland, 2004; Kingley & Townsend, 2006; Calgary Horticultural Society, 2012). In doing so, they contribute to a wealth of benefits such as providing fresh food, social development, saving or making money, health improvements, reduced crime, and improved life satisfaction (Guitart et al., 2012). One of the well-documented outcomes of community gardens is the sharing of knowledge and skills (Bendt et al., 2012; Krasny, 2009; Krasny and Tidball, 2009). This set of knowledge and skills is unique from those in urban agriculture, home gardening, and allotment gardening because of the ‘community’ element. The learning isn’t only related to horticulture; it also encompasses knowledge and skills relating to volunteer management, teaching skills, and applying for funding, to name a few.

Community gardening took root in Calgary, Canada at a similar time to the American trend, and similarly, its popularity declined after the Second World War, only now to experience a recent resurgence (Rudack, 2008). With the inception of a new policy in Calgary which has streamlined the process of accessing public land for community gardening, there has been a massive boom since 2009. This has coincided with the City of Calgary setting ambitious sustainability targets, including some aimed at increasing

Urban Agriculture and access to local food (Calgary Food Committee and Serecon Management Consulting Inc, 2012; City of Calgary, 2006).

Using Action Research methodology, I conducted interviews with eight members of four case study gardens and collected questionnaires from fifty-eight community gardeners across Calgary to find out what direct and indirect factors enable knowledge and skill sharing in community gardens.

Chapter 2: Background

2.1 What is a Community Garden?

The distinctions between community gardens and their cousins, allotment gardens and Urban Agriculture (UA), often blur, but generally speaking have some notable differences. To Holland (2004), “community gardens are open spaces managed and operated by members of the local community for a variety of purposes” (p. 285). They have also been defined as “plots of land allocated to individuals to create gardens of their choice in a communal environment” (Kingsley et al., 2008, p. 209). There isn’t a consensus on the definition of community gardens, especially not globally (Guitart et al., 2012), so for my purposes, it makes the most sense to use the generally accepted local definition. The Calgary Community Garden Resource Network defines community garden as “a shared piece of land gardened by a group of people. The garden can be on public or private land and gardeners grow food and flowers that enhance the community and connect the community through gardening in a common area” (Calgary Horticultural Society, 2012, para. 1). The important aspect to highlight is that the land is shared and maintained as a group.

Allotment gardens in Calgary, on the other hand, are spaces that are rented out for gardening, but there is no expectation to contribute to the community. They tend to be bigger, are often outside city limits, and owned by farmers or businesses (Calgary Horticultural Society, 2012). In community gardens, on the other hand, often part of the garden is rented out to different plot owners, but almost all community gardens have shared gardening space of some kind. But the main difference between allotment gardening and community gardening has much to do with intention of what the space should be used for – in other words, whether the garden is an individual or communal endeavor (Blackhall, G., personal communication on April 10, 2013).

For the City of Calgary, community gardening is seen as a “social development tool,” which brings communities together over a shared challenge in which they can improve

the local physical, social and aesthetic environments (Blackhall, G., personal communication on April 10, 2013). For this reason, in Calgary, allotment gardening is not permitted on public land because allotments are run like a business and are generally not open for visits. Impacted by this distinction, most of Calgary's newly established gardens are open to anyone, as they are usually on public land (Calgary Horticultural Society, 2012).

UA and community gardening are less mutually exclusive than allotment gardening and community gardening. UA and peri-Urban Agriculture are the "growing of plants and the raising of animals within and around cities" (RUAF, 2013, para. 1). The definition can also be expanded to refer to certain non-food products, such as medicinal herbs (RUAF, 2013). Oftentimes, community gardens exist within urban areas therefore fall under the definition of UA.

2.2 Why do we need community gardens?

Community gardens contribute to Sustainability in a number of different ways. Urban agriculture and community gardens fulfill a unique niche, offering products and functions that are "very distinct from but complementary to rural agriculture" (Mougeot, 2006, p.5). Some of these products and functions relating to social development are improving the health and well-being of their members (Kingsley et al., 2008), support immigrant communities' ability to "grow and eat culturally appropriate foods" (Wakefield et al., 2007, p. 97), improving interracial relationships and reducing crime (Ferris et al., 2001; Shiness et al., 2004), and contributing to food security (Corrigan, 2011).

Additionally, community and urban gardens can contribute to sustainability in other ways, such as conserving energy (Deelstra and Girardet, 2000; Holmer et al., 2005), reduced waste through nutrient cycling (Goddard, 2006; Holmer et al., 2005), biodiversity conservation (Bernholt et al., 2009), and regulating local micro-climates (Deelstra and Girardet, 2000).

Supporters of urban agriculture across the world experience criticisms that it is not an efficient way to feed the world (van Veenhuizen & Danso, 2007). This is why it is

important to recognize that community gardens are multifunctional with food production as one of many benefits, and should be evaluated as such.

2.2.1 Knowledge and Skill Sharing in Community Gardens

Knowledge and skill sharing are well-documented outcomes of community gardens. There is evidence that they contribute to “multiple types of learning”, such as learning about “environmentally responsible behaviors, opportunities for unstructured time in nature, positive youth development, understanding of linkages between global and local food security, and gardening skills themselves” (Krasny, 2009; Krasny and Tidball, 2009). Others include “learning about gardening and local ecological conditions; about urban politics, and about social entrepreneurship” (Bendt et al., 2012).

The Integral Model for education specifies four aspects that contribute to learning: Educational Experiences, Educational Behavior, Educational Culture, and Educational Systems (Murray, 2009). Educational Experiences and Educational Behavior occupy what is called the “individual” part of learning (Murray, 2009, p. 103). For example, Educational Experiences make up the contemplative, critical, and somatic aspects of learning. On the other hand, the Educational Behavior has to do with the skillful, practical, and active aspects of learning (Murray, 2009).

The “collective” parts of learning are the Educational Culture and Educational Systems (Murray, 2009, p. 103). Educational Culture encompasses connective, perspectival and

Figure 1. The Four-Quadrant Model including Direct and Indirect Factors (adapted from Murray, 2009).

	Internal	External	
Individual	Educational Experiences	Educational Behavior	Direct Factors
Collective	Educational Culture	Educational Systems	Indirect Factors

ethical aspects of learning, whereas Educational Systems are the ecological, social, and global systems that affect learning (Murray, 2009).

For my purposes, I have made an important distinction between “individual” and “collective.” I will call Educational Experiences and Behavior **direct factors** that affect learning, and Educational Culture and Systems **indirect factors** that affect learning. See Figure 1 for an illustration of this.

2.2.2 What makes knowledge and skills relating to Community Gardening unique?

Skills relating to community gardening differ from other types of gardening, such as home gardening, allotment gardening, and other types of urban agriculture. A big part of this is because community gardening has a unique set of goals, including goals targeted social development in addition to just produce or aesthetics. Furthermore, community gardens are often run by volunteers or at least depend on volunteer energy to be maintained. For this reason, there is a heavy emphasis on how to find and retain volunteers. Often community gardens also need to provide special services to fulfill grant or funding stipulations or for their partnerships with other organizations.

In the following chapters, when the terms knowledge and skills are used, they will be referring to any knowledge and skills related to community gardening. These can range from specific competencies about different aspects of growing, such as pest management and seed saving, to logistical aspects, such as volunteer coordination and applying for funding.

2.2.3 Levels of Learning

Knowledge and skill sharing can happen between different people and groups, and in this section I will clarify the distinctions I make between learning among different parties. I first will be looking into sharing between those on a community garden level from gardener to gardener. This type of learning, otherwise called intra-garden learning, takes place within the structure of the gardeners’ ‘home’ community garden. In Figure 2, relatively synonymous phases and terms to describe this are listed on the left. Inter-garden learning is much broader. It is learning that takes place between individuals from

different community gardens. Terms and phrases to describe this level of learning are in Figure 2 on the right side.

Learning can also happen between individuals or gardens and other organizations. Some of these organizations include the garden networking organizations, local government, garden groups that aren't tied to a specific garden, gardens' beneficiaries, and so forth.

Figure 2. Differentiation of terminology used to signify two different levels of learning in community gardening.

<i>Between gardeners of the same garden</i>	<i>Between gardeners of different gardens</i>
<i>Within community gardens</i>	<i>Between community gardens</i>
<i>Intra-garden level</i>	<i>Inter-garden level</i>

2.3 The History of Community Gardening in Calgary

Based in the foothills of the Canadian Rockies, Calgary is a rich and prosperous city (see Figure 3 for the location on a map) (Statistics Canada, 2012). The Calgary area has been inhabited for at least 12,000 years by the “Siksika (Blackfoot), the Kainah (Blood), and the Northern Peigan” Nations, otherwise known by their European name, the Blackfoot Confederacy (Calgary History – First Nations, para. 1-2, 2013). It was only in the 19th Century that settlers made their way west to the place where the Elbow River meets the Bow (Calgary History – First Nations, 2013). The Northwest Mounted Police established a post in 1875, which later became known as Fort Calgary (Calgary History, 2013). In 1884, Calgary was named a town, and ten years later it became a city (The City of Calgary, 2013). In these times, agriculture and ranching were the basis of the local economy (Government of Alberta, 2013).

By 1912, the Calgary Vacant Lots Garden Club and Calgary Horticultural Society had been established. The beneficiaries of the Vacant Lots Garden Club were mainly low-

income families, but the gardens were also intended to beautify empty lots (see Figure 4 for a photo). The project was kept alive during the First and Second World Wars, and at its peak in 1943 occupied 3,229 lots managed by 2,366 club members (Rudack, 2008; Calgary Horticultural Society, 2012).

The economy changed dramatically in 1947, when massive oil reserves were discovered in Alberta (Emery et al., 2012; Lim, 2010). Calgary experienced a boom of population growth following the discovery, and at the same time fewer lots became available until the club was officially dissolved in 1952 (Rudack, 2008). Meanwhile, the economy had become so linked with the petroleum industry that the Arab Oil Embargo of 1973 resulted in a massive boom for the city (Emery et al., 2012). Similarly, the peak of the oil boom in 1981 resulted in the collapse of Calgary's economy, not to be entirely rebuilt again until the early 1990s (Emery et al., 2012).

It was in 1974, when the “first modern-day community garden,” otherwise known as the Varsity Courts garden, was established at the University of Calgary (Rudack, 2008, p. 41). Throughout the ‘80s and ‘90s, a handful of other new gardens began across the city as well (Rudack, 2008; Calgary Horticultural Society, 2012).

In recent years, the City of Calgary's Office of Sustainability has published a series of reports and plans. *imagineCALGARY* was a plan developed in collaboration with over 18,000 Calgarians to create a 100 year vision of Sustainability in Calgary (City of Calgary, 2006). The vision outlined targets related to food and community, such as increasing sustainable urban food production to 5%, “the consumption of urban- and regionally produced” food to 30% by 2036, and that by 2010 at least 75% of Calgarians should be volunteering to benefit others “outside their circles of family and friends” (City of Calgary, 2006).

From this report, the City created a 10-year strategic guide to help inform the City's 3-year business plans and budgets (City of Calgary, 2010). It utilized systems thinking and was driven by long-term goals with short-term targets and milestones. The document produced was called the 2020 Sustainability Direction (City of Calgary, 2010). It mentioned food security as one of the areas affected by climate change and said these “complex challenges” have necessitated a “shift from the abstract to something that is

Figure 3. Map of Canada with Calgary located in south-western Alberta (adapted from Natural Resources Canada, 2007).



Figure 4. Former Vacant Lots Garden. Location and date unknown (The City of Calgary, 2013).



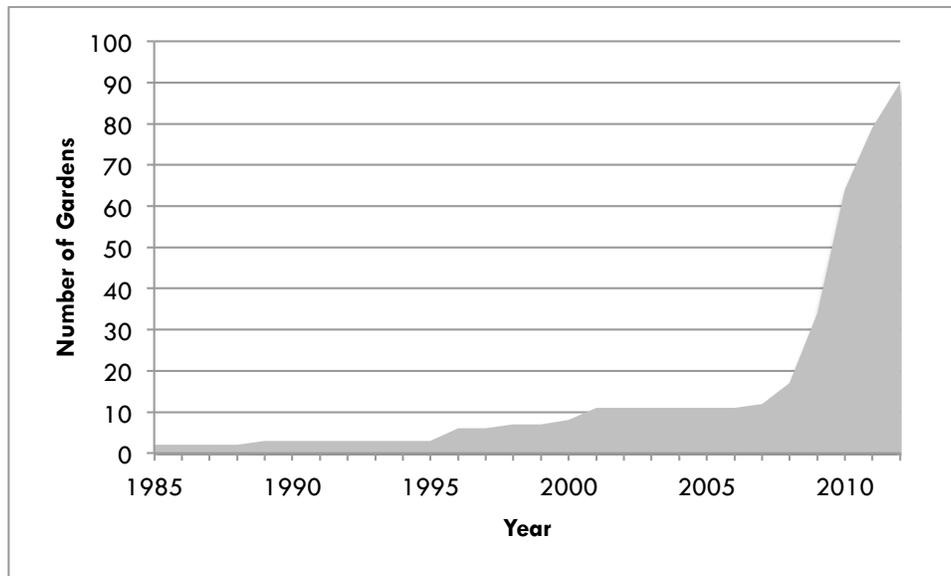
concrete and be planned for” (City of Calgary, 2010, p. 7). In spite of this, food was only mentioned explicitly in the section about waste management, and there were no targets linked to sustainable procurement. In the most recent Annual Report (City of Calgary, 2012) the only mention of food waste was that “diversion and reduction programs [were] currently in design stages” (p. 7).

Then, in May of 2012, *Calgary Eats!* was published (Calgary Food Committee and Serecon Management Consulting Inc, 2012). This was a Food System Assessment and Action Plan for Calgary written by the newly established Calgary Food Committee and published by the City. This publication had four main goals: shaping a vision a new food system using the information gathered in *imagineCALGARY*, providing a baseline for future assessments, identifying the gap between the present food system and the new vision, and creating an action plan (Calgary Food Committee and Serecon Management Consulting Inc, 2012).

The food system they visioned for Calgary “balances food imports with local capacity, contributes to both community and ecological health, supports multiple forms of urban as well as rural food production, is celebrated through community events, [and] has a strong educational focus to create awareness of food and agricultural issues” (Calgary Food Committee and Serecon Management Consulting Inc, 2012, p. 15) But the main finding produced was that there was a big gap between the vision and the present food system – and furthermore, there was insufficient data to establish adequate baselines. Therefore, the actions they identified were aimed at “regulation, legislation and advocacy, planning and land use, and transportation and logistics generally focus on the provincial and municipal governments leading with support from other stakeholders” (Calgary Food Committee and Serecon Management Consulting Inc, 2012, p. 5).

Notably, *Calgary Eats!* reported that there has recently been an increased interest in food issues in Calgary, citing the example of a new community garden policy established in 2009 (from this point forward, referred to as the 2009 policy) and the rapid increase of community gardens, as can be seen in Figure 5 (Calgary Food Committee and Serecon Management Consulting Inc, 2012). One of the most highly reported challenges for

Figure 5. Date of establishment for community gardens between 1985 and 2012 that are still in use. Only gardens with dates of establishment listed on the Calgary Horticultural Society’s website (2012) were used in the making of this chart.



growing food in urban areas is insecure land tenure (Guitart et al., 2012), and what the policy had done is actively streamlined the process of accessing public land to build community gardens. Volunteer groups of at least ten people could apply for access to land owned by the City of Calgary to cultivate. Partnering gardens with local Community Associations or other local groups was encouraged. When granted access, the volunteer groups were given a small start-up grant in-kind¹ and permission to create a community garden (City of Calgary, 2012). The policy wasn’t a document, and the only formal documents were lease agreements between Community Associations (CAs) and the City. The policy took the form of an agreement between the City of Calgary and the newly established Community Garden Resource Network (CGRN). The CGRN became a subset of the Calgary Horticultural Society around the time of the 2009 policy’s establishment in order to facilitate cooperation between gardeners and the City. There was an increase from less than 50 community gardens in 2007 to 176 established and proposed gardens in 2013 (Calgary Horticultural Society, 2012). But although time, money and energy are

¹ Contribution of material up to \$5000 value, including soil, tools and anything else the City of Calgary could provide.

being put into this project, as of yet there has been no assessment of it. (For a more detailed description of the policy, see Appendix A.)

Chapter 3: Research Question

Given the rapid expansion of community gardening in Calgary in recent years, particularly just after the establishment of the 2009 policy, developing a picture of how community gardening is unfolding in Calgary is valuable. The “academic literature on community gardens in English language journals [...] is mostly about gardens in low income earning areas with different cultural backgrounds in industrial cities in the USA” (Guitart et al., 2012, p. 368). Since literature is lacking from other “industrialised English language countries,” part of my aim is to contribute to filling the gap on community gardening in Canada (Guitart et al., 2012, p. 368). Considering how valuable a tool community gardening is for learning, I hope to give a picture of how this is taking place in Calgary by answering:

What factors enable knowledge and skill sharing in community gardens?

To answer the above question, I have divided into two main sub-questions, which are:

1. What are the **direct factors** that contribute to learning for community gardens?
2. What are the **indirect factors** that contribute to learning for community gardens?

Chapter 4: Methodology

4.1 Action Research

This project has been influenced by Action Research methodology, which I have chose to incorporate to the furthest degree possible. It should be reflected upon that though Action Research is a methodology, it is also a “explicitly political, socially engaged, and democratic practice” (Brydon-Miller et al., 2003, p. 13). In Action Research, the researcher takes on the role of a facilitator in order to enable all participants to create and interpret knowledge. My intention has been to act as a “resource person” to support stakeholders in “defining their problems clearly and to support them as they work to effective solutions to the issues that concern them” (Stringer, 2007, p. 24).

Action Research is an alternative to the scientific method in social sciences, where researchers acknowledge that often the problems (and therefore solutions) are complex, dynamic, values-driven, and less generalizable. It has been used widely in education and health sciences, and to some degree in social work and planning and architecture (Stringer, 2007).

Action Research is unique because involves a self-reflective process by which an in depth understanding of the problem and the results of action taken can be elucidated. This has been modeled by a number of different researchers including Stringer (2007), and French and Bell (1999). One of these models used by Brown et al. (2005) can be seen in Figure 6. There are three main stages to the research, which are Looking (collecting data and describing the situation), Thinking (analyzing and theorizing based on the previous phase), and Acting (where you plan, implement and evaluate action) (Stringer, 2007). These phases are then repeated to improve the quality of the two research outcomes: “solutions to immediate problems” and a “contribution to scientific knowledge and theory” (Goghlan & Brannick, 2005, p. 4).

Figure 6. Action Research Spiral (Brown et al., 2005).

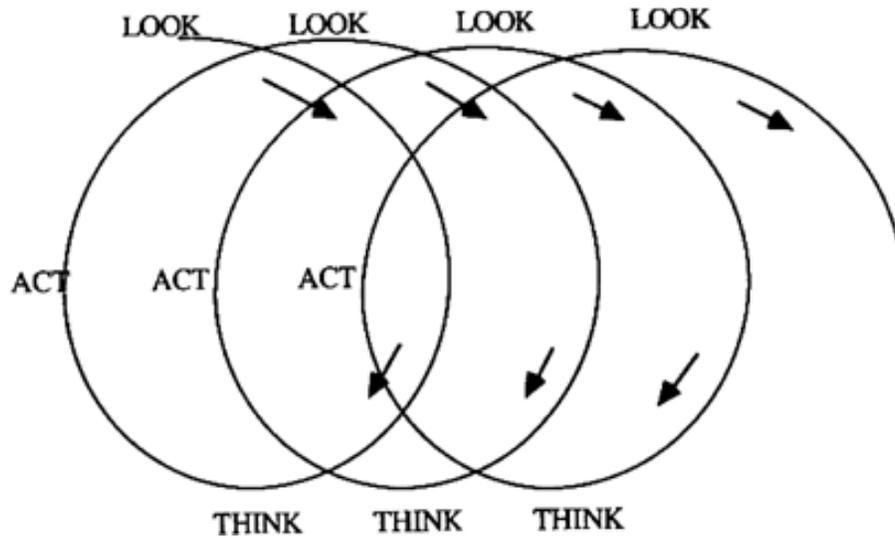


Figure 1. Concurrent Cycles of Action Research (Goghlan & Brannick, 2005, p.24).



According to Goghlan & Brannick (2005), multiple cycles can operate concurrently, analogous to a clock (see Figure 7).

The hour hand, which takes twelve hours to complete its cycle, may represent the project as a whole which may take several years to complete its cycle. The minute hand, which takes an hour to complete its cycle, may represent phases or particular sections of the project. The second hand, which completes its cycle in a minute, may represent specific actions within the project, such as a specific meeting or interview. As in the clock, where the revolutions of the three hands are concurrent and where the revolutions of the second hand enable the revolutions of

the minute hand and the revolutions of the second and minute hands enable the completion of the hour hand, the short-term action research cycles contribute to the medium term cycles which contribute to the longer-term cycle. (Goghlan & Brannick, 2005, p. 23-24)

4.2 Why Action Research?

Distinguishing Action Research from other types of research can be challenging. Some streams of traditional research produce action-oriented outcomes, and yet wouldn't label what they practice as Action Research. The main reason I say I am undertaking Action Research is because ontologically and epistemologically it aligns with my methodological approach. I take an objectivist ontology because I believe in reality having "an independent existence prior to human cognition," and therefore am open to the possibility that there is "theory-neutral language" (Goghlan & Brannick, 2005, p. 5). However, I acknowledge that my own belief system is not objective and is a product of my lived experience, therefore I am subjectivist. I am also epistemically reflexive, by which I mean that I undertake analysis of my own beliefs in order to expose my underlying interests. These approaches fall largely under the critical realist paradigm, which Action Research is in alignment with.

Additionally, my research is action-oriented in respect that I intend to help solve a problem. In terms of the clock analogy, the project has taken place over a short timeframe, so this thesis can be seen several rotations of the minute hand, or with multiple reflective phases, but not a complete rotation of the hour hand, or a full cycle, which is why action has not been undertaken more fully.

4.2 Methods

The timeline in Figure 8 illustrates the three Look, or data collecting stages, this body of work has undergone. The types of meetings and contact I had with interviewees and other important contacts (not including questionnaire respondents) can be seen in Table 1. The Food Security stage took place between February 2012 and December 2012.

During this phase, the guiding aim was to begin to offer an evaluation of the 2009 policy. The Horticultural Learning stage took place between January 2013 and March 2013, and this is the period where the bulk of data came from. I also maintained a continual email and telephone correspondence with contacts and interviewees throughout the process. The guiding aim was to find out what was enabling knowledge sharing of horticultural-based knowledge and skills in central and east Calgary. In City-Wide Learning stage, the aim was expanded to find out what enables knowledge sharing city-wide, including all aspects of knowledge for community gardening. While Figure 3 shows the Look stages of these three phases, my reflective process which followed each of these stages will be described in the three sections below. In order to explain the reflective process, findings that impacted the course of the research will be mentioned.

Figure 8. Timeline describing the phases of the research and data collected in each phase.

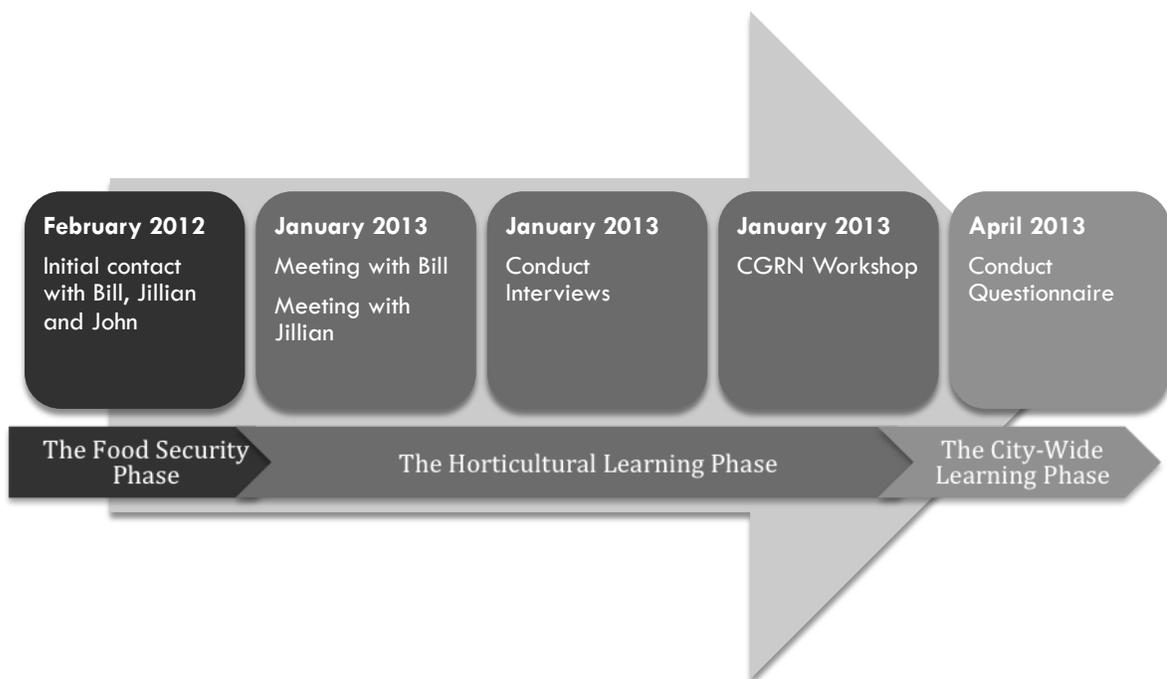


Table 1. List of contacts and interviewees, and types of contact I had with them.

Contact²	Organisation Represented	Informal Meetings	Semi-Structured Interview In Person	Semi-Structured Interview via IM	Emails
Jillian	CGRN				
Bill	Active Gardener				
Sherri	City of Calgary				
Katharine	City of Calgary				
Sandy	City of Calgary				
Khaled	Rainbow				
Laura	Demonstration				
Dave	Demonstration				
Lori	Library				
Brian	Library				
Melissa	Library				
John	Central				
Sharon	Central				

4.2.1 The Food Security Phase

In February of 2012, I contacted a number of organizations working with urban agriculture and food security in Calgary to identify topics that would be beneficial to research. Based on email communications and interview with an individual active in the Community Garden Resource Network and an active community gardener, I found an interest in the rapid growth of community gardening in Calgary. I then narrowed my topic to evaluate the 2009 policy based on the goals of its stakeholders. Initially, I had a Food Security-oriented approach, leading me to contact the Calgary Food Bank and do a quantitative analysis of how much food community gardens could produce to make a significant contribution to the Food Bank. This approach and the results were discarded, and what I carried forward were the connections I had developed and the knowledge I had accumulated about community gardening in Calgary.

4.2.2 The Horticultural Learning Phase

It was in January 2013 when I entered the second phase of data collection. At my first informal meeting, I developed a stronger understanding of the motivating factors behind the 2009 policy from the perspective of the CGRN. These included goals targeted

² The names of contacts and gardens have been changed to assure anonymity.

towards “social development” (Blackhall, G., personal communication in January, 2013). It was at this point that I revisited my aim and reoriented it to finding out what enables knowledge sharing in Central and Eastern Calgary.

For the remainder of this second phase, I undertook a qualitative case study approach using semi-structured interviews (Bryman, 2008). Given my Action Research methodology and the complexity of the question I aimed to answer, the case study approach was an effective way to “retain the holistic and meaningful characteristics of real-life events” (Yin, 2003, p. 2).

Through Internet research (Calgary Horticultural Society, 2012), communications with the three original contacts, and my personal knowledge of the city, I contacted five community gardens to use as cases, four of which responded. These gardens were all located in Downtown Calgary or due east of Downtown, making them all fairly central. This can be seen on in Figure 9. In spite of the fact that they are all located in older areas of Calgary, the gardens vary in size and date of establishment. One commonality that they shared was that they all had a heavy focus on the communal aspect. While these gardens may have represented a certain level of diversity in their area of the city, the results may differ for gardens in newly established suburban neighborhoods.

In each garden, I interviewed between one and three active individuals, totaling in eight interviews. Depending on the cases, these individuals were garden coordinators, longtime members of the garden or founders of the garden, all with an in depth knowledge of how the garden has been established and run. These interview questions (which can be found in Appendix B) were specific to horticultural knowledge and skill sharing.

After having conducted most of the interviews, I attended a workshop hosted by the CGRN, where I gathered a limited amount of data, but more importantly, developed a broader perspective on community gardening in Calgary. There were participants from

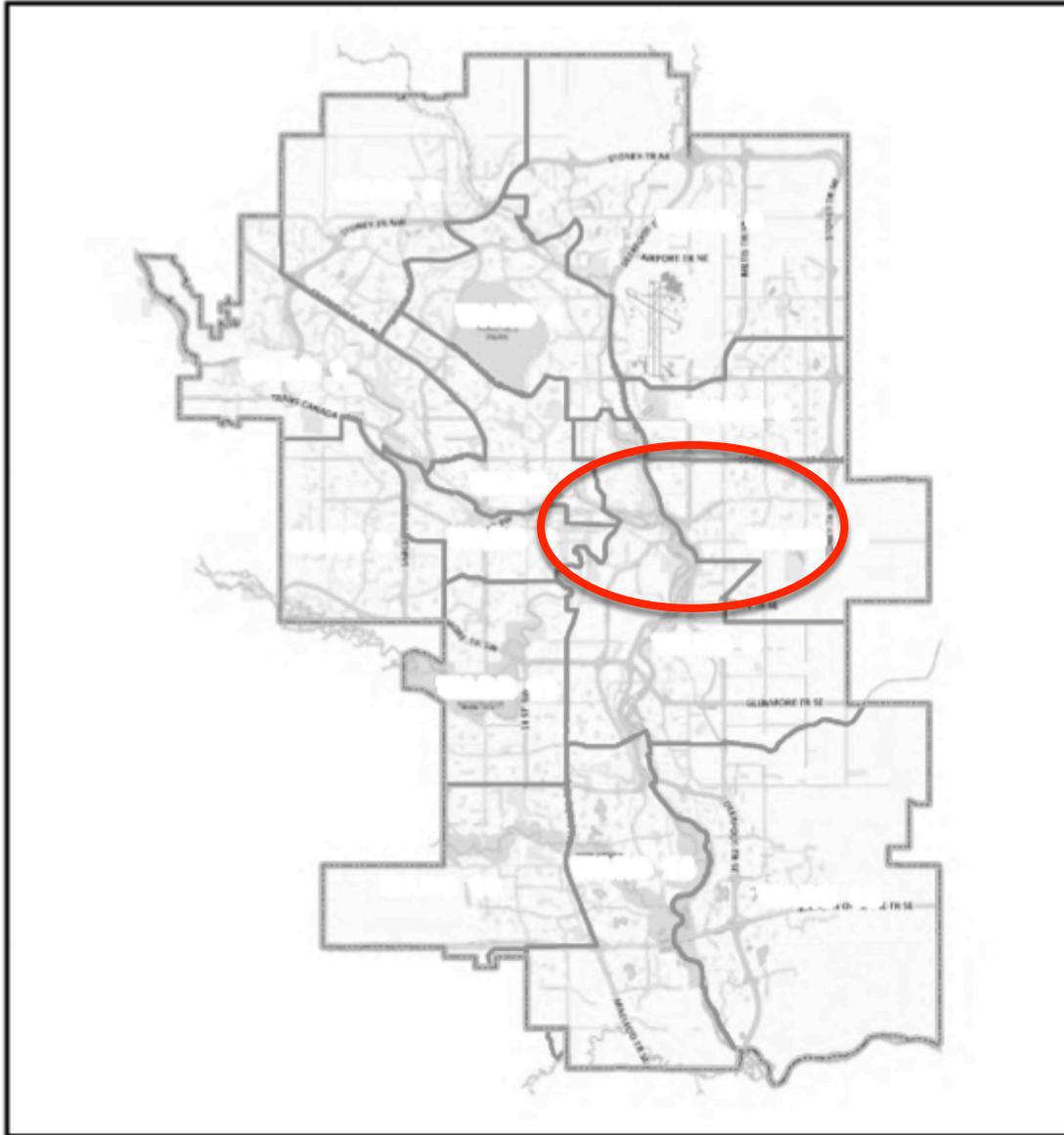


Figure 9. Map of the City of Calgary indicating the location of community gardens used as case studies (adapted from Calgary Food Committee and Serecon Management Consulting Inc, 2012).

community gardens across the city, and World Café-style session³ was held in order to brainstorm strategies to tackle a diversity of problems, mainly not related to horticulture.

³ World-Café is a method to develop a collective intelligence about a specific subject within a group by breaking into sub-groups to discuss sub-topics, and then rotating people in the groups to develop a bigger picture (World Café, 2012).

A trend that emerged from these interviews and was confirmed during the workshop was that skills and knowledge not only related to horticulture, but also to more logistical aspects of gardening were concerns. These included such topics as dealing with theft and vandalism, and applying for funding. Many of the interviewees and participants of the workshop found it difficult to point to specific failures of knowledge communication, but rather indicated that adequate preconditions must be in place to create a positive learning environment.

4.2.3 The City-Wide Learning Phase

The third phase was focused on triangulation. In order to get a broader picture of enabling knowledge and skill sharing at a city-wide level, I first used a questionnaire to triangulate the data (Bryman, 2008). This also meant that I could reframe questions to focus not only on horticultural knowledge and skill sharing, but learning as it pertains to community gardens at large.

I developed the online questionnaire in consultation with two of the original contacts from the CGRN (see Appendix C for a copy). Then it was sent to 137 email addresses of gardens or gardeners from the 163 established and proposed community gardens in Calgary. It was emailed only to those gardens with a publically available email address. Social media was also used to advertise the survey and an incentive was used to increase the response rate.

4.3 Analysis

The interviews were recorded, transcribed in play format, and analyzed through both open descriptive and analytical coding (a sample transcript can be seen in Appendix D). The coding will begin with reading through the interviews multiple times to develop “interpretive tags” (Cope, 2003, p.445). Then descriptive, or ‘emic,’ codes were identified in the interviews (Crang, 2005). These emic codes were grouped according to recurring themes, and the themes organized into tables and given corresponding analytical, or ‘etic,’ codes (Crang, 2005). These were repeatedly reflected upon and tweaked until broader themes emerged from the data, which I called Major Themes

(Crang, 2005). These gave way to a series of hierarchical categories, which will be described in section 5.2 and Figure 10.

Since the coding was already done for the interviews, I used the same coding framework for the questionnaires, but remained open to the new codes that appeared. I then integrated these within my developed coding framework.

4.4 Rigor

In Action Research, rigor is based on checks of “trustworthiness” (Stringer, 2007, p. 57). This is based upon credibility, transferability, dependability and confirmability (Stringer, 2007). In the following paragraphs, I will demonstrate the trustworthiness of my methodology.

Credibility. In all of the interviews I undertook I let the participant guide the length of the interview. For this reason, some ranged up to an hour and a half, while some interviews were limited to about 20 minutes. I had prolonged engagement with all interviewees, because, even in the case where the interviews themselves were short, I attended their garden meeting where we were able to meet informally prior to the interview.

I persistently observed the community gardening atmosphere throughout my stay in Calgary – not only during interviews and the garden workshop I attended, but also in my interactions with other Calgarians, travelling throughout the city, and visiting restaurants serving local food. I used triangulation in three different ways: firstly, I derived my data using multiple methods, and secondly, I used four case studies. These I described above. And thirdly, I gathered data from diverse participants, including representatives from the City of Calgary, the CGRN, and gardeners from four different gardens.

This thesis is written, in as far as possible, the most accessible language possible without compromising the meaning of the text. Furthermore, the language used by the participants is kept to retain the intended meaning.

Transferability. While Action Research has a heavy focus on providing solutions to problems at a local level, I hope that this research will not only do that. While strategies in Calgary may not replicable everywhere, hopefully the reader will be able to

experiment with what has been practiced in Calgary to discover how it would function in their local context. To help the reader make judgments about the transferability, I have and will continue to give detailed descriptions of the circumstances and events in Calgary.

Dependability and Confirmability. I have provided an intellectual audit trail by documenting the Phases of self-reflection I undertook throughout the project in the methods section. All gathered data, including field notes, mp3s of interviews, transcripts, and email correspondence have been retained to ensure the veracity of this investigation and to ultimately contribute to its trustworthiness.

4.5 Methodological Limitations

The largest limitation of the methodology I have chosen is that it demands time to create the best results. There are many reasons for this. One is that relationships take a long time to build, and the time I spent in Calgary was limited. Furthermore, identifying a problem and working towards a practical solution in such a short period was also a challenge. Finally, time is necessary to engage participants as co-researchers to the furthest degree possible. This means that, while I involved participants in defining the problem and in the production of the results, if time had not been a limitation the participants could have a much higher degree of participation in this resulting document.

A further limitation, unrelated to time constraints, is that I conducted my research during the winter, which is not an active gardening season in Calgary. If had been able to be present during the summer, it is likely that I could have found a more diverse array of interviewees and also seen the gardens in action.

Chapter 5: Results

The following chapter will be divided into two sections. In the first section, we will get to see snapshots of four different gardens in the city and will be introduced to the members I interviewed. The second section will provide the results for the first sub-question and then the second sub-question based on the interviews and questionnaires.

When quotations are used, occasionally grammar will be corrected or minor changes made, but these have not altered the meaning of the quotes. If a quote needed alteration so much as to lose the intended message, I described it in my own words. This is all an effort to retain as much of the interviewees' or respondents' voices as possible, while ensuring the text is readable.

5.1 Description of Case Study Gardens

The following section describes the gardens used as case studies. The names of people and places have been changed, and distinguishing details have been omitted to ensure anonymity. These gardens were chosen because they all have a strong community focus with a significant portion of the area in the garden maintained communally.

5.1.1 Rainbow Community Garden

The garden that Rainbow is now a part of was first built in the early 2000s, but was later moved to a different location, where it is situated now. Originally the garden was split into rentable plots and communal beds, but in the late '00s the garden was expanded to provide space for an Urban Garden Cooperative. This was the beginning of Rainbow, a communally run section of the garden, providing food for volunteers and charities. The produce divided among volunteers was based on hours spent in the garden. For every hour, volunteers got an equivalent pound of produce.

There were about ten people that made up the core group of gardeners, and about five peripheral volunteers. During the gardening season they had weekly 'work nights,' as well as a harvest festival in the fall and an annual seed-sharing event. Rainbow is a well-

established garden and a hub for community gardening activity in Calgary, which is why I used it as a case study. I spoke with Khaled, a young professional who volunteered in Rainbow.

Notably, some people I spoke to referred to the plotted area and the communal area as one garden, but when I spoke with Khaled, he pointed out that they are quite distinct sections with limited interaction. He was only involved in the communal section, therefore when I talk about the Rainbow Community Garden, I will be referring only to the communal part.

5.1.2 Demonstration Community Garden

The Demonstration Community Garden was an entirely communally run historical demonstration garden that donated all its produce to charity. In all these respects, it was quite a unique garden. Demonstration was funded by an energy company invested primarily in oil and gas, and it was with this funding that the garden was established. The resources were also used to employ a coordinator and people with barriers to employment. In addition to the employees, there were about 20 volunteers in total, though only six were regulars. Demonstration partnered with a number of different groups, a some of which were soup kitchens, women's shelters and other charitable organisations.

This garden initially interested me because, as a communal, charity-oriented, demonstration garden, it wasn't typical for Calgary. I interviewed two participants of the garden: Dave, who was more involved with the garden at the beaurocratic level, and Laura, who was active in the garden at the ground level.

5.1.3 Library Community Garden

The Library Community Garden was interesting to me since it was very new, having just been built after the establishment of the 2009 policy, and also because it had linked up with it's local library. Like the Demonstration Community Garden, the Library Garden was also funded by an energy provider from the petroleum industry, though the funding was limited to equipment and materials for the garden. The garden was made up of raised beds, which they rented out to people from the neighbourhood, with the exception of one communal bed.

I interviewed three participants from the Library Community Garden. I first met with Brian after attending one of their meetings and then spoke with Lori via telephone. Brian and Lori became involved with the garden in its initial stages and were continuing as active members. I also met Melissa at the meeting I attended, but interviewed her at a later date through instant messaging. She was teaching horticulture, and kept a home garden in addition to remaining active in the gardening community in Calgary.

5.1.4 Central Community Garden

This garden was particularly interesting because it was established in partner with the City of Calgary immediately before the 2009 community gardening policy came into place. The garden took up only about 20m², and was located in a truly urban environment in central downtown. The garden donated a proportion of its produce to a food bank and had partnerships with many local businesses.

From the Central Community Garden, I interviewed one of the founders of the garden, John. He was active in the garden at the ground level, but also in gardening and food politics at the city level. I also interviewed Sharon, who was involved in the garden at the beaurocratic level.

5.2 The Coding Process

The coding process gave way to fifty-six analytical codes. These were first grouped by research question: Direct or Indirect Factors affecting the sharing of skills and knowledge. They were then broken into Educational Experiences, Educational Behavior within Direct Factors, and Educational Culture and Educational Systems within Indirect Factors. Further subdivisions, which I called Major Themes, emerged. These Major Themes were Personal Satisfaction, Learning Approaches, a Positive Atmosphere, Space, Networks, and Resources. Beyond that, there was further sub-categorization into Minor Themes, Analytical Codes, and Descriptive Codes (these sub-categorizations can be found in Appendix E). The hierarchy in which these series of groupings are placed can be seen in Figure 10. Figure 11 shows how the Types of Factors, Factors, and Major Themes have been grouped.

Figure 10. The Hierarchy of categories in coding, beginning with Types of Factors, all the way down to Descriptive Codes.

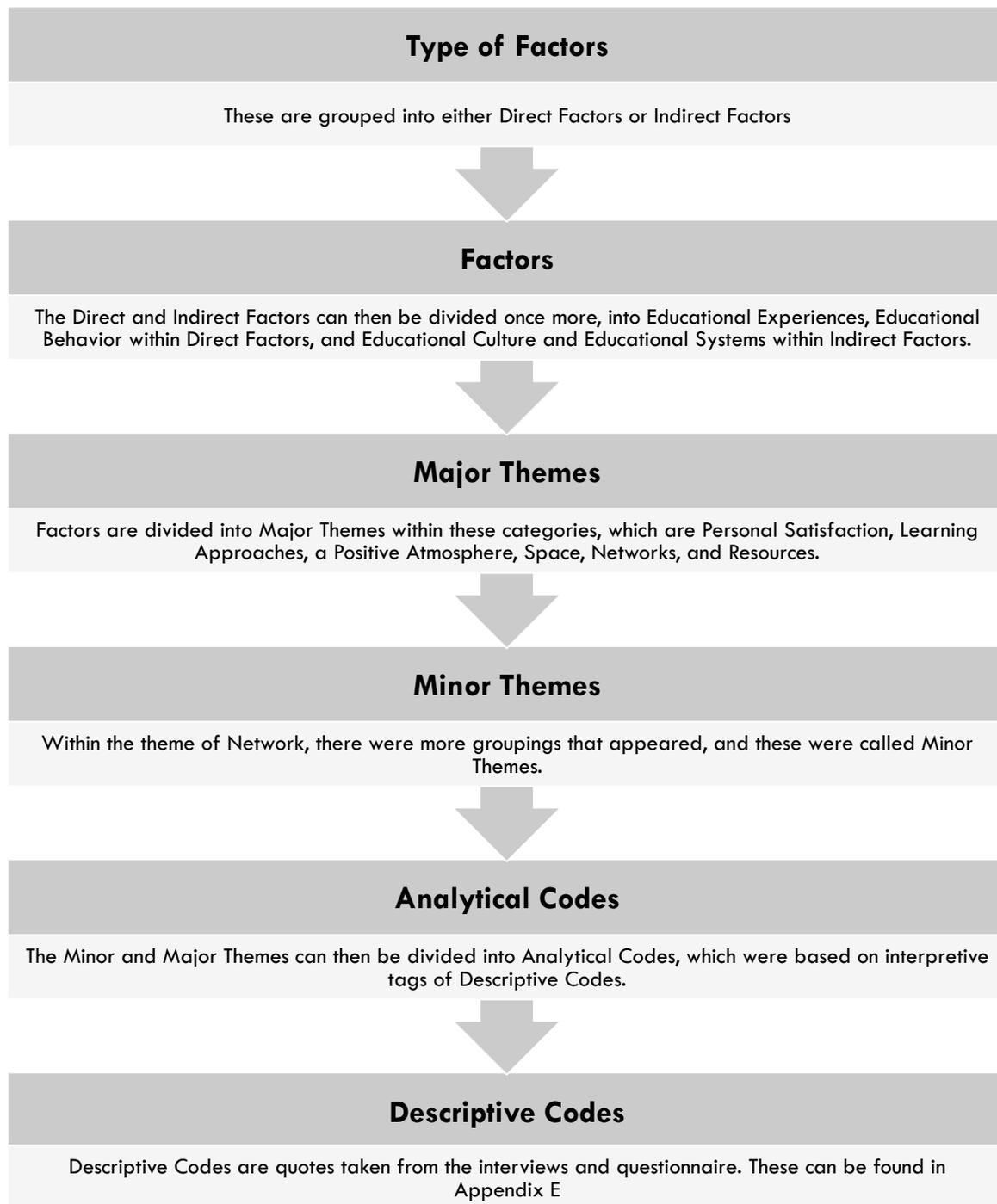
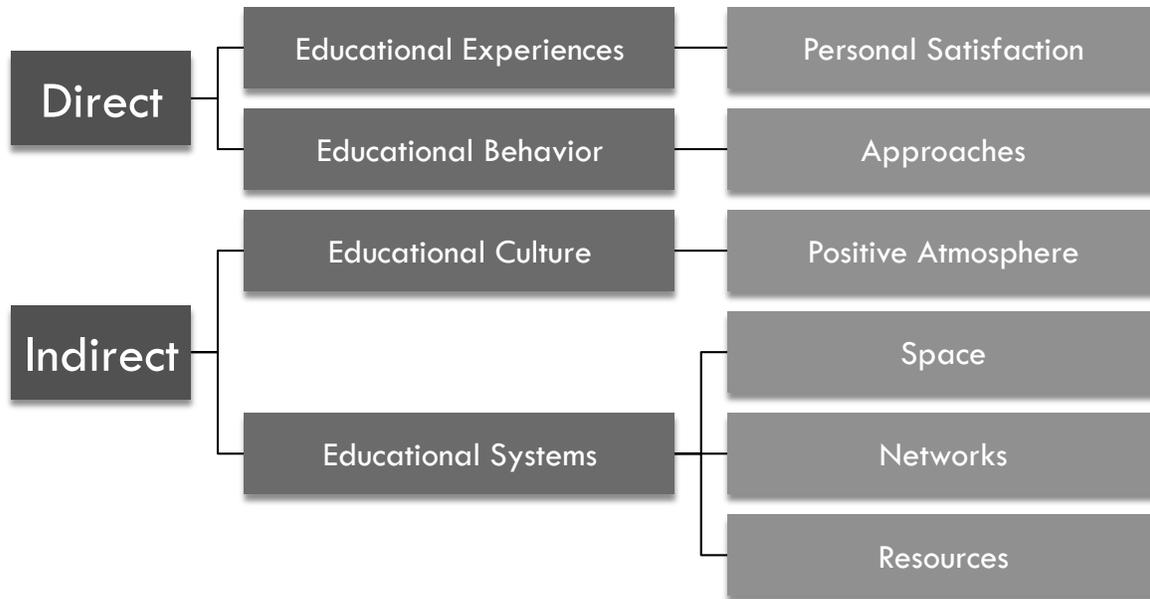


Figure 2. Groupings of Types of Factors, Factors, and Major Themes

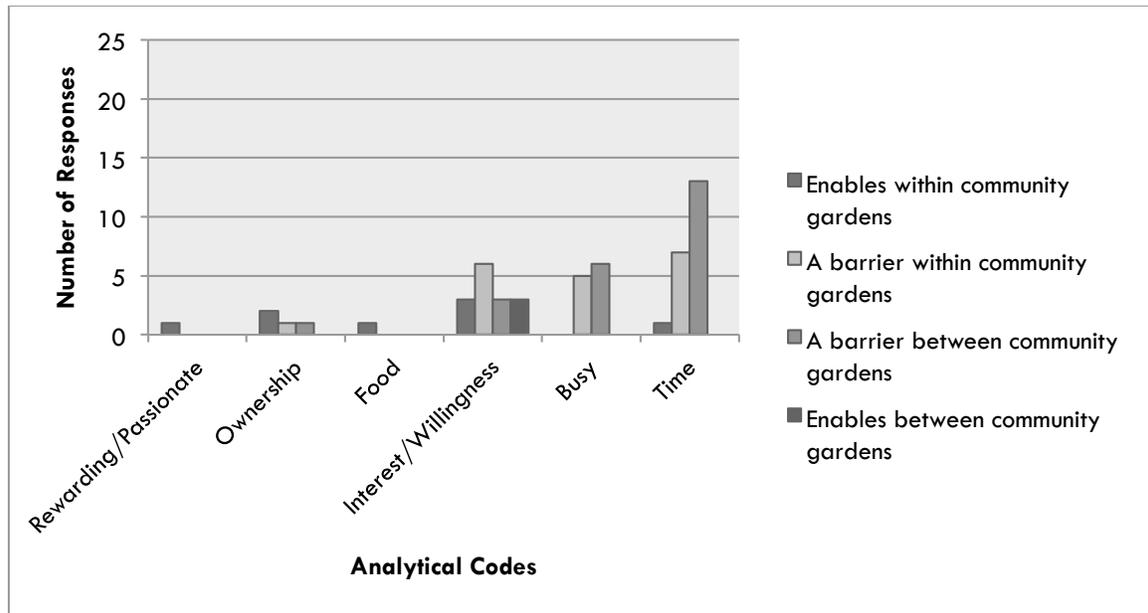


In the remainder of this thesis, quotes will be used when possible to retain the voice of the interviewees and to reduce my interpretive bias. *Italics* will indicate a quotes or language used by interviewees or questionnaire respondents. In other words, descriptive codes are italicized. Apart from descriptive codes, all categories from the hierarchy in Figure 10 will be Capitalized in the text to indicate their significance.

Table 2. Educational Experience: Analytical Codes within the Major Theme of Personal Satisfaction

Major Themes	Analytical Codes
Personal Satisfaction	Rewarding/Passionate
	Ownership
	Food
	Interest/Willingness
	Busy
	Time
	Momentum
	Need for Instant Gratification

Figure 3. Proportion of Questionnaire Responses Relating to Aspects of Educational Experiences



5.2.1 Direct Factors

Personal Satisfaction

There were two Major Themes that fell into the category of Direct Factors: Personal Satisfaction and Practical Learning Approaches. The aspects that contributed to Personal Satisfaction in the garden are listed in Table 2, and were Passion, a sense of Ownership, Food, an Interest or Willingness to take part, how Busy the participants were, how much Time they had, how well Momentum was captured from potential volunteers, and the need for Instant Gratification. I will describe some of these in greater detail below.

Ownership was a key factor in deriving a sense of Personal Satisfaction from the garden. Khaled brought up some interesting points on this topic. He said that when *you become protective of [...] the information, you start feeling you need to dictate to people or to other people, who can come, who can't come [to the garden]*. So, in his words, *the ownership feeling that people get prevents people from sharing*. On the other hand, in order to *get more people involved, you need to implement their ideas, respect their ideas, let them do what they want to and let them act in a way that leads them to believe they*

have ownership. Or in other words, a balance needs to be struck between too much and too little ownership. Too much ownership prevented engagement from other volunteers, where as too little ownership kept people from being more actively involved.

Laura also said, as a coordinator, it was important for her to step back and let people make mistakes, as long as they were not critical mistakes, because ultimately the end goal was not solely *the quality of the work*, but also the engagement of the volunteers. Four of the interviewees also brought Ownership up, and two questionnaire respondents mentioned it as a contributor to creating a positive learning environment within gardens, as can be seen in Figure 12. Another one said that people *imposing* their ideas on other gardeners reduced Personal Satisfaction, and another said that within the garden, members who were *controlling* made learning more challenging.

Many of the gardeners specified that producing Food wasn't the main goal of their garden, and that they did not have expectations for it to feed them or their family. But five of the interviewees also mentioned the produce as something that contributed to Personal Satisfaction, and one of the questionnaire respondents cited it as a factor within their community garden.

Demonstration Community Garden was an interesting garden concerning the food produced since all of it was donated, meaning the volunteers shouldn't expect get to take any home. But even if that case, Laura said that *often people [would] go home with a little bundle of [...] fresh something that [they had] tons of*. So, to sum it up, production of Food was a goal among many that people reported brought about Personal Satisfaction.

No one mentioned being Busy as a factor that kept them from getting the most out of their own garden, but many believed that being Busy kept them from networking further. Three of the interviewees said that being Busy inhibited them from connecting with other gardens or groups, and being Busy was mentioned 11 times in the questionnaire in relation to knowledge and skill sharing between gardens.

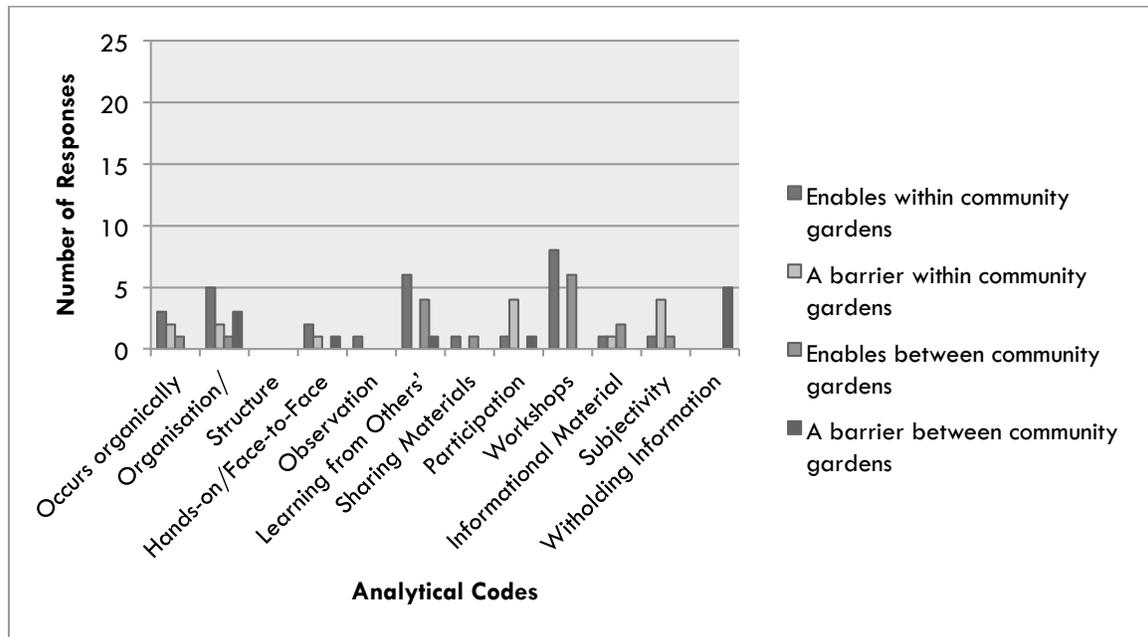
In the same vein, time was also a limiting factor, especially for sharing skills and knowledge between gardens. One of the questionnaire respondents said that this is might be because it takes *time to establish connections and relationships*. Four of the

interviewees mention time as a limiting factor, some at an intra-garden level and some at an inter-garden level. On the other hand, thirteen questionnaire respondents said that time was an enabling factor for sharing knowledge and skills between community gardens, and seven said not having enough time was an inhibiting factor.

Table 3. Educational Behavior: Analytical Codes within the Major Theme of Approaches

Major Themes	Analytical Codes
Practical Learning Approaches	Reflexive Learning
	Occurs Organically
	Organisation/Structure
	Hands-On/Face-to-Face
	Observation
	Helping
	Learning from Others' Experience
	Sharing Materials
	Participation
	Workshops
	Informational Material
	Subjectivity
	Withholding Information

Figure 4. Proportion of Questionnaire Responses Relating to Aspects of Behavioral Systems



Practical Learning Approaches

Thirteen Practical Learning Approaches were mentioned and are listed in Table 3. These were Reflexive Learning, learning opportunities which Occur Organically, Organisation and Structure, Hands-On learning, using Observation Skills, learning through Helping, accessible Informational Materials, Sharing Materials, Participation, the Subjectivity of learning gardening skills, and gardeners Withholding Information. Learning from Others' Past Experiences and Workshops were the two Learning Approaches mentioned most in the questionnaire, as can be seen in Figure 13. Again, I will highlight some of the important Approaches below.

Melissa, John and Laura all believed that Reflexive Learning was critical for educational development in the garden. While Melissa described herself as a *life learner*, Laura actively engaged in getting *feedback* and made an effort to undergo *a bit of a process* to find what was and wasn't working in the Demonstration Garden. And according to John, *for organizations to get better, they must be committed to be learning organizations. They must be wanting to get better.*

Some of the learning that was described came about informally and Organically. One questionnaire respondent said that they were *not part of anything formalized to share knowledge and skills*, but that they had just learned through friends. Another respondent said that they had *found the best way [to learn] is to see people at the garden and informally chat about information*. At one garden they tried to establish something more concrete by *[instituting] twice weekly "drop-in" gardening times to bring more people together* with no success.

Organization and Structure was another point of discussion for developing Effective Learning Approaches. The Demonstration Community Garden had a more structured approach to volunteer management which worked for them, but the Central, Rainbow, and Library Community Gardens had a more relaxed style. Of her garden's more structured approach, Laura said:

I think some volunteers that we had initially, or that had been initially interested, we may have scared them away in some ways. Like, whoever wasn't interested in that kind of structure, obviously, we didn't retain them as a volunteer.

In spite of this, she thought that *in terms of coordinating the garden itself, being prepared was important*, which justified the structure.

In the Rainbow Garden, Khaled said that they tried to implement a more formalized structure of how to get plot-holders to volunteer in the communal section, but he didn't think that *forcing [was] the best way to go about getting volunteers.*

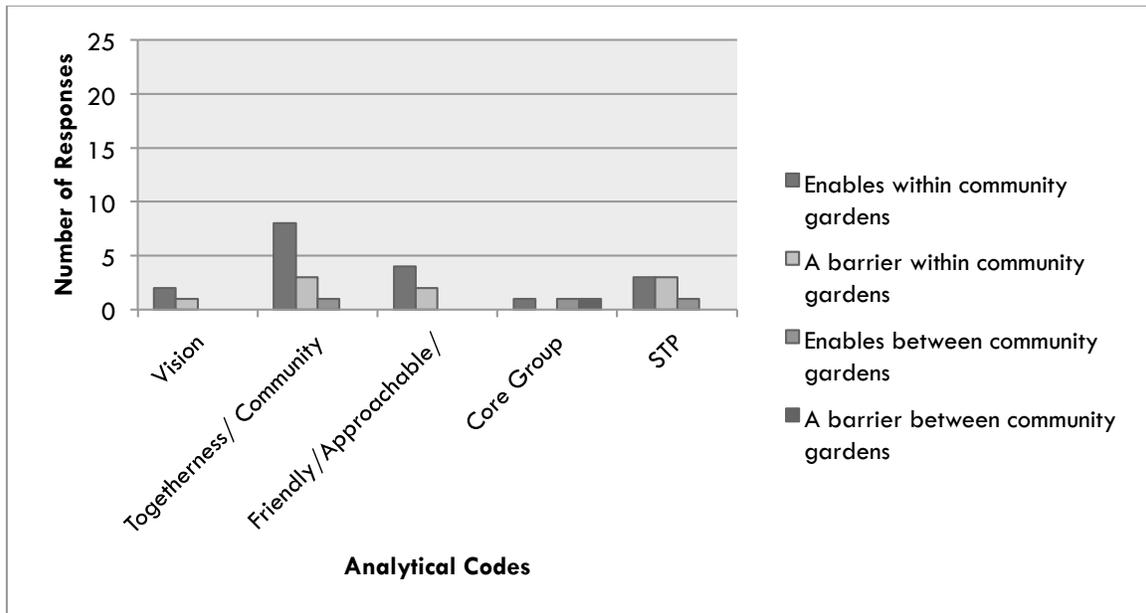
Helping other gardeners was reported as an effective way to learn by five of the interviewees. Khaled learned about asparagus from helping another gardener at Rainbow with her experimentation. At the inter-garden level, Lori and Brian mentioned that having helpers come from another local garden facilitated knowledge and skill sharing. In these cases and at the Demonstration Garden, a trend was that learning was often secondary to *getting the garden up and running*, so, in many ways, it happened organically.

Finally, both Laura and Dave from the Demonstration Community Garden talked about the subjectivity of community gardening skills. Dave described a lot of the learning as *more of an ethos than an actual skill*, and Laura also thought that *sometimes the subjective nature of the task made things difficult.*

Table 4. Educational Culture: Groupings of Analytical Codes within the Major Theme of Positive Atmosphere

Major Themes	Analytical Codes
Positive Atmosphere	Vision
	Norms
	Togetherness/Community
	Friendly/Approachable/Caring
	Small Group
	Core Group
	Internal Politics and Personality Clashes
	STP

Figure 14. Proportion of Questionnaire Responses Relating to Aspects of Educational Culture



5.2.2 Indirect Factors

Indirect Factors were made up of a Positive Atmosphere, Space, Networks and Resources. Of these, Networks was subdivided into three Minor Themes. The Analytical Codes for Positive Atmosphere can be found in Table 4, and the Analytical Codes for Space, Networks, and Resources can be found in Table 5. In Figures 14 and 15, the number questionnaire responses for each of the Analytical Codes and their corresponding Major and Minor Themes can be found.

Positive Atmosphere

Aspects that were important for a Positive Atmosphere were a shared Vision, Norms, Togetherness and a Sense of Community, members with a Friendly, Approachable and Caring attitude, having a Small Group, managing Internal Politics and Personality Clashes, and making sure Same Ten People (STP) don't do all the work. The ones that will be highlighted are a having a Vision, Togetherness, and the STP.

Members of all the gardens mentioned having or needing a Vision. John, from the Central Community Garden, said that it was important to him because attaining a *superior understanding with people about what they think that food justice and food*

policy in community gardens really are helps create common understandings. As one of the respondents to the questionnaire said, people have different levels of commitment to the garden and different expectations about what they want to achieve, and these differing expectations can cause conflict.

Dave, from the Demonstration Community Garden also expressed the challenges of matching the goals of an organization and the goals of a volunteer:

I know one of the things more generally we've been looking at, that's been looked at in the volunteer sector, is the changing expectations of the volunteer and how that squares with what you actually need to do.

Since each different participant comes with different goals for what they want to achieve, coming up with a Vision can help participants see how their goals fit into the larger picture of the garden.

Many of the interviewees and questionnaire respondents found that coming Together and building a Community environment were important contributing factors to create a Positive Atmosphere. In fact, Togetherness and Community were the most frequently cited aspects of creating a Positive Atmosphere in the questionnaire, as can be seen in Figure 14. Some questionnaire respondents said *friendships* were part of the reason, and others attributed it to a sense of *belonging*. Khaled from the Rainbow Community Garden explained why he thought that the sense of Togetherness came about in a community garden:

Relationships are fast-forwarded. Or you develop faster relationships if you are engaged in a common goal, and you try to achieve that goal together. You have to have that shared experience, you know. You have to have a challenge and you have to overcome it together.

One of the questionnaire respondents missed having this experience in their garden as a result of having individual plots:

The garden can easily become a place where individuals garden in the same place rather than a place where community members come together to garden. People

don't know other people within the garden and that is sad because it really is about community building and not peas and carrots.

One of the participants at the CGRN workshop I attended described a phenomenon, which many of the gardeners seemed to relate to. She called it the “STP” –or the “Same Ten People” who are active in the community. You could find them at the community center, Parent-Teacher-Association meetings, and of course the community garden. The STP are engaged and invested in their communities and, as a result, totally overcommitted. In spite of the fact that many people at the meeting related to the phenomenon, this was echoed by only one of the interviewees, Lori, who said:

A lot of times it's 10% of the people do 90% of the work.

Three questionnaire respondents cited that within the garden, sharing the workload equitably was important to enable knowledge and skill sharing. Conversely, three respondents also cited that uneven distribution of work was a barrier to learning in community gardens. One respondent even said specifically that *burnout among key members* was a problem.

Space

The actual Space the garden occupied was an important factor mentioned mainly in the interview, and to a lesser extent in the questionnaires. Some of the aspects that contributed to the garden being an effective place for learning was the garden's Visibility, Accessibility, Amenities, the Permanence of its location, how it functions as a Meeting Space, that it is Well-Maintained, and whether it has a Communal Gardening Space.

Using the garden as a Meeting Space was important for Sharon and John, of the Central Community Garden, Brian, of the Library Garden, and Khaled, of the Rainbow Community Garden. Brian said that one of the goals of the Library Community Garden was to be *more than just a garden. [To be] a kind of meeting area*. This was important for knowledge and skill sharing for John because:

It's just a matter of getting those [skilled] people to come out. So creating an environment that's inviting to them.

Table 5. Educational Systems: Groupings of Minor Themes and Analytical Codes within the Major Themes of Space, Networks and Resources

Major Themes	Minor Themes	Analytical Codes
Space		Visibility
		Accessibility
		Amenities
		Permanence
		Meeting Space
		Well-Maintained
		Communal Space
Networks	Attributes of Good Networks	Diversity
		Coordinator
		Well-Connected Individuals
		Butterflies
		Good Connections with Existing Organizations
		Local Network of Community Gardens
		Regular Meetings
		Larger Events
	Communication	Communication in General
		Same Time at the Garden
		Web-Based Communication
		Marketing
	Barriers to Networking	Word of Mouth
		Can't Find Information
		Don't See the Value of It
		New Garden
		Individualist Approach
		Not Making an Effort
Resources		Monetary and in-kind
		Human

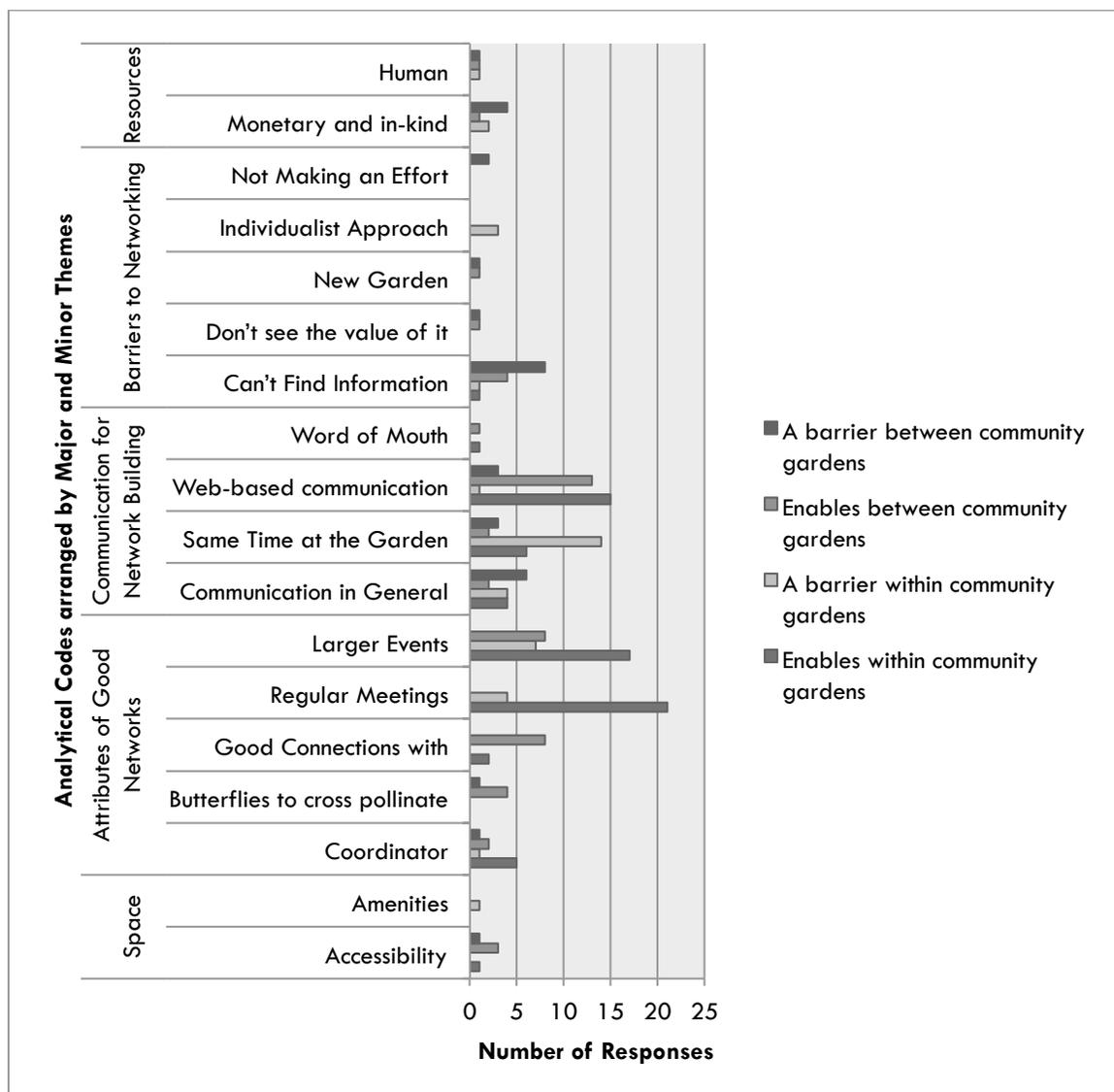
Being a part of a garden divided into a rentable, plotted section and a communal section, Khaled felt that there was an invisible wall between the two areas, which affected its ability to function as a Meeting Space:

It's like an invisible fence barrier. They look over the fence to see, and if you're looking at them, they'll look away. Or if they come in, they feel like they're sneaking in. If they come in and they see you, they duck their heads and run away quickly. So, yeah, I think you have to create a situation where it's normal for them to be in that space. And once it's normal for them, then they'll get through their

mind block of 'oh it's not mine,' or 'this belongs to somebody else.' They'll feel like they belong there, or they could belong there. And they can contribute. So I think that's the best way to do it – is to create a reason for potential volunteers to be in that space.

Developing the garden as a Meeting Space as well as a space where people can grow food was important to help facilitate knowledge sharing.

Figure 5. Proportion of Questionnaire Responses Relating to Aspects of Educational Systems



The Rainbow Garden, Central Garden and Demonstration Garden were all communal and the Library Garden had one shared and a number of rentable plots. Many of the gardeners considered the communal aspect a positive thing. Laura said:

I think the other gardens are renting out plots to so many different people involved, and they might not know each other.

Interestingly, most of the interviewees believed that their garden was unique for having communal space, but based on communications with Jillian from the CGRN most, if not all, gardens had communal space. But the Rainbow Garden, Central Garden and Demonstration Garden were actually unique in the respect that they were entirely communal, which not many of the gardens were.

On the other hand, Laura mentioned how having a mixed plotted and communal space might have had positive effects on the Demonstration Garden:

It would be interesting to see [the] garden if we rented out like, half of it. And then one half was used to grow food for charity, and then the other half [for renters] then you'd have a lot more people coming in.

But as one of the questionnaire respondents quoted about Community and Togetherness on page 36 said, having individually plotted areas can dilute part of the goal of having a community garden. After all, according to her, *it really is about community building and not peas and carrots.*

Networks

Networks were also an important theme for enabling learning in community gardens. The Minor Themes that came up within Networks were Attributes of Good Networks, effective Communication, and Barriers to Networking.

Attributes of Good Networks

The identified Attributes of Good Networks were Diversity, having a Coordinator, having Well-Connected Individuals, people who act as Butterflies to cross-pollinate knowledge and skills, Good Connections with Existing Organizations, a Local Network of

Community Gardens, and Regular Meetings as well as Larger Events. Some of these Attributes will be fleshed out in the section below.

Five of the interviewees referred to the benefits of Diversity in their community garden. Diverse people bring *different skills* and knowledge to enrich the garden with. According to John, you should strive for diversity right from the beginning of building a garden to engage as many volunteers as possible because then *you're going to have a space that has a lot of people involved*.

Brian identified this in a more personal way in his garden. In his experience, he had found that community gardens are *collection of nearly all women*, and therefore having a more gender-balanced group at the Library Garden was attractive to him and other members.

Laura and John both mentioned reaching out to or partnering with marginalized groups. Laura had worked with groups of people with barriers to employment and also mentioned some interpretive work she had done where *some immigrant groups come through [the garden] and look at different plants. [It] was really fun 'cause a lot of them are from farming backgrounds and a lot of them recognized many of the plants*.

The Central Community Garden was partnering with a homeless shelter where clients would come and help out in the garden during the summers. Of this, John said that it was critical to reach out *to the low-income, poverty sector of your community* and to *work hard with those relationships* because those are the people these gardens can benefit most.

Almost all of the interviewees expressed how important it was to have someone act as a Coordinator and take on the main responsibilities. Dave, Sharon and Laura all believed that having a paid Coordinator was critical to their gardens' success. Khaled, on the other hand, also referred to a person that he called the *beating heart of the garden*, but he thought that volunteers could rotate through this role.

Every year you end up with a 'garden hero.' You end up with somebody who's spent more time, taken on more responsibilities, done more key things.

Beyond these tasks, John found that for maintaining the interest of new volunteers, a Coordinator is *critical*.

Five of the questionnaire respondents said that someone taking on a leadership role was important for learning at an intra-garden level, and two indicated its importance at a inter-garden level. One respondent noted that having a *lead gardener* had actually led to problems in their garden:

We have had a problem with experienced gardeners who try to be too controlling but this was resolved by not having a lead gardener and encouraging a variety of approaches.

In addition to having a Coordinator, having members of the garden that are Well-Connected within their neighborhood and the gardening community were valuable as well. Both Sharon and Brian mentioned the importance of having members of their gardens that did this. But, on the flip side, Sharon also spoke about her predecessor, whose husband's company got involved with the garden. When her predecessor had to leave, the volunteers from her husband's company left too. This was a drawback of having only one Well-Connected Individual.

I mentioned the term 'Butterflies' in the introduction of this section, but I hope to now give a better idea what I mean by using an example to illustrate. Khaled, being the first gardener from the case studies I spoke with, told me about a woman who went *to different community gardens and plants her garlic in those places*, and in doing so, was teaching people all over the city about growing garlic. I decided to call these people "Butterflies" since they provide a figurative cross-pollination of knowledge and skills. Khaled described these people as *[volunteers that are] involved in more than one garden*. They differ from Well-Connected Individuals in the respect that they actually spend time in multiple gardens, where as people who are Well-Connected might know many people, but not necessarily with the garden as a backdrop.

It was after speaking with more gardeners that I found out that the woman spreading the garlic was actually part of a *garlic venture* with the CGRN. Laura explained it as a system where *representatives from community gardens can come get some garlic seed of one variety, take it back, grow it out, and then the next year come back and trade it with*

other community gardens. In this way, they were developing new types of garlic – but in parallel, there was a wealth of knowledge that was being developed and shared as well.

Laura also pointed to representatives from the CGRN providing the same sort of service: with the wealth of knowledge of about all the different community gardens, they are able pass on information in a way that is unique to the type of information that is transmitted at the individual garden level.

The participants reported having connections with organizations as diverse as Community Associations (CA), a library, schools, a food bank, seniors homes, and homeless shelters. These partners could provide much needed support. Two similar examples of this took place at both the Demonstration Community Garden as well as the Central Community Garden: the broader Demonstration organization already has rich volunteer database, as did the Central Community Association. Both gardens were able to take advantage of that.

The Library Garden also benefitted from their relationship with the Library by using *a lot of their methods of advertising and promoting [the garden]*. The Library Garden was also unique because its physical proximity to such a community hub meant that *a lot of [the people who came with knowledge were] people that [frequented] the library*, according to Brian.

Furthermore, these organizations benefitted from the partnerships as well. The Library Community Garden *promoted some of the groups in the area*, and the library benefitted by being able *to tie some of their programs in and be out there, around the garden*.

The questionnaire responses about factors that enable sharing knowledge and skills between gardens was very telling. All nine respondents who mentioned Connecting with Existing Organizations mentioned either the CGRN, the Calgary Horticultural Society, or the City of Calgary. The following quote sums up many of the responses:

The Community Garden Resources Network, and particularly [certain people], have provided an excellent framework for sharing between gardens and gardeners.

Sharon, John and Brian all mentioned building a Local Network of Community Gardens. Neither the Central nor Library Community Gardens had formally done such a

thing, but it was rather a direction they hoped to head in the future. Having mutually benefitted from having collaborated with another local community garden, Brian said it inspired the idea.

Regular Meetings and Larger Events were also important Attributes of Good Networks. Regular meetings were often described as work nights, volunteer days or communal work days. These differed from Larger Events because they usually happened on a weekly basis. A common trend for these meetings was that they were relatively organic and happened at the same time every week. There were exceptions to this; for example the Demonstration Community Garden had a fairly structured volunteer schedule, but more generally that sort of structure didn't exist. Further descriptions of these meetings can be found in the Descriptive Codes of Meetings in Appendix E.

Twenty questionnaire respondents mentioned meetings such as these as factors that enable knowledge and skill sharing within their community garden. A further four said that a lack of engagement in these meetings was a barrier to such sharing.

Larger events, on the other hand happened less regularly, usually once a year to about once a month. These were not as coherently described as the Regular Meetings, but they ranged from events like harvest dinners⁴, to planting parties⁵, to seed exchanges⁶, to work bees⁷. A common characteristic was that these events were planned in advance, but many were often repeated year after year (such as planting sessions, cleaning sessions, and harvest dinners).

Seventeen questionnaire respondents said that these meetings enabled sharing on an intra-garden level, and eight at the inter-garden level. Additionally, seven of the

⁴ A harvest dinner was a celebration that happened in the autumn where the community would gather to eat the food produced in the garden and share each other's company. In many cases, gardeners said they would meet at one of the participant's houses.

⁵ Planting parties were get-togethers at the garden with the goal of getting plants and seeds in the ground and getting the season started in a social way.

⁶ Seed exchanges were events where gardeners could bring the seeds they have saved and swap them to get a broader diversity in their garden and not have to buy seeds.

⁷ Work Bees were days when gardeners made a point to come together over a specific task that needed to be done. This would usually entail something larger than the usual week-to-week tasks.

respondents said that a lack of or poor attendance to social events was a barrier to enabling sharing at an intra-garden level.

Communication

Communication was one of the Minor Themes brought up by the interviewees and the respondents to the questionnaire. The aspects that made this up are Being at the Garden at the Same Time, Marketing, Word of Mouth, and Web-Based Communication. Communication was only explicitly mentioned only by John of the interviewees, but was commented on extensively in the questionnaire. Four respondents said that Communication was beneficial at the intra-garden level, and two at the inter-garden level. Conversely, six said that communication was a barrier at the inter-garden level, and four that it was a barrier at the intra-garden level.

Being in the Garden at the Same Time contributed to effective Communication. This was mentioned by questionnaire respondents about intra-garden Communication. Eight said that *being there at the same time as other gardeners* enhanced learning, and fourteen said that *people aren't always around at the same time*, which was a barrier to learning. One respondent said:

It would be great to be there when others are there but we each have our schedule and no one goes when I go.

Web-Based Communication was noted as especially important by questionnaire respondents. Fifteen people said that it enabled knowledge and skill sharing at the intra-community garden level, while thirteen said it enabled sharing at the inter-community garden level. Three of the respondents said that a lack of Web-Based communication inhibited learning at the inter-community garden level, and one at the intra-community garden level. Some of the Web-Based Communication they referred to were email, websites, blogs, Facebook, and the internet in general. Web-Based Communication was mentioned only by John and Khaled in the interviews, where they brought up websites and social media as tools their gardens have used.

Barriers to Networking

The last Minor Theme within Networking was Barriers to Networking. There were five main barriers that inhibited the gardeners from Networking, and these were that they Didn't Know Where to Go for Information, Didn't See the Value in It, being a New Garden, taking an Individualist Approach, and Not Making an Effort to connect.

To Sharon, *a lot of times, people are just intimidated by not understanding how gardening works* and it keeps them from trying to reach out for information. Khaled mentioned, similarly, that people may have felt *overwhelmed* with the challenges. This was echoed by eight questionnaire respondents who said that Not Knowing Where to Go was a barrier at the garden level. Another one expressed it was also a barrier at the inter-garden level. Furthermore, four respondents said *knowing who to contact* enabled knowledge and skill sharing at the inter-garden level, while one reported that it was an enabler at the intra-garden level as well.

One of the questionnaire respondents remarked that:

Above is the first time I have seen a comprehensive list of gardens in this city. I am amazed at the number. This is a shame that community gardens have no access to such a list because this pretty much makes any effective communication impossible.

The list of gardens they were referring to was taken off the CGRN website and is publically accessible. On the other hand, some people, like John seemed to know that *[the CGRN] have a good database of who's doing what.*

Another reason Networking wasn't happening was because people Didn't See the Value of It. One questionnaire respondent said *we don't see a particular need for our garden at present to share with others* at an inter-garden level. Khaled explained that he thought the CGRN was *just a formality*:

I haven't seen anything transferred from one garden to the next. I think it's just all theoretical good intention, but practically, nothing really.

And to Laura, *communication between the other gardens was just icing on the cake.* In addition both Laura and Dave thought that, since Demonstration Community Garden was *a little bit different, they didn't need [the CGRN's] assistance.*

Resources

Resources were a Major Theme that arose as an Indirect Factor that enables knowledge and skill sharing. These took two forms, which were Money and In-Kind grants, and Human Resources.

All the case study gardens had funding in some form. In spite of this, Melissa said that *finding ways to do things with limited funds* was one of the biggest issues. Brian also said that the garden got much of its *material for around half price* as a result of the gardeners' personal connections, which enabled them to build the types of raised beds they wanted. But John was critical of the way money was being spent on these new gardens:

Most of the, if you look at the analysis of any of the expenditures by community garden organizations, expenditures would be for lumber. And new lumber, to boot. From a sustainability perspective, that was really unfortunate. That 90% of the money was being spent on lumber.

Another gardener remarked that *more than a \$5 charge is more than I can afford and becomes a deterrent [to attend workshops]*. This is notable because many of the CGRN workshops cost more than \$5.

The Demonstration Community Garden was the only case study with a paid coordinator. The garden also hired people with barriers to employment to help in the garden. Though they hadn't done it before, Sharon mentioned hiring a summer student to work with the Central Community Garden. Human Resources were mentioned by three interviewees, and in the questionnaire three times.

Chapter 6: Discussion

It's worthwhile to comment that the divisions developed from coding in the Results section are a result of my interpretation of what the data showed. That is not to say that I don't think they are useful for understanding the information presented, it is only to say that there are deep and synergistic relationships between and within the categories, which I hope to tease out more fully in this section.

First, I will explore the highlights of the findings, and then I will discuss the importance of Direct versus Indirect Factors influencing knowledge and skill sharing. Following that, I will highlight where there is room for improvement within community gardening in Calgary and reflect on the limitations of my methods and methodology.

6.1 Exploration of the Findings

6.1.1 Coordinators, Well-Connected Individuals and Butterflies

Firstly, I will turn to roles within the garden. The results show three different roles that Good Networks Have: Coordinators, Well-Connected Individuals, and Butterflies. In the case of some of the case study gardens, some of the interviewees seemed to occupy all of these roles, at least partially. This is a manifestation of the STP phenomenon.

But the truly interesting part about these roles is the difference in the knowledge sharing capacity of Well-Connected Individuals and Butterflies. When asked where most of the learning happens, Khaled told me that the garden was the *only place*. There are, of course, some things that can be learned about equally as well outside of the garden, such as the more bureaucratic aspects of gardening – finding funding, for example. But ultimately, much of the learning about community gardening would benefit from being situated in the garden environment. For example, why explain how to develop a garden design that encourages interaction between gardeners when you could take a walk through the garden and experience it yourself? For this reasons, while both Well-Connected Individuals and Butterflies are valuable, people who occupy the role of the Butterfly contribute to learning in a much more direct way.

These three roles may underlie what enables community gardens to increase social cohesion, social support, and social connections (Kingsley & Townsend, 2008). But a deeper understanding specifying what tasks each of these roles undertakes can help illuminate how to improve social capital. Kingsley and Townsend (2008) found that the benefits of accumulated capital “do not necessarily extend beyond the garden setting” (p. 525), but given that Well-Connected Individuals don’t necessarily operate in garden environments, they may have potential for expanding connections more broadly.

6.1.2 Breaking Down Barriers Between Gardens

Another interesting point to take note of was that a lack of Time and being Busy were not reported as much of a barrier for learning at the garden level, but they were reported to be a limiting factor for sharing knowledge and skills between gardens 20 times in the questionnaire. Some gardeners seemed to think that developing connections between community gardens was important, and others didn’t deem them a priority. There are also studies pointing to the fact that the size of these networks perhaps aren’t as important as the quality (Ernstson et al., 2008; Glover, 2004). While these results aren’t conclusive on how important inter-garden networking is, it would be valuable to find out. Regardless, the link between lack of Time, Busyness, and inter-garden connectedness is an interesting finding and may have implications for inter-gardening networking, however it manifests.

Possibly part of the reason so many people cite being Busy or lacking Time as a constraint for inter-garden networking, but not for spending time in their own garden is because they don’t necessarily See the Value in Networking. One of the questionnaire respondents said that this is might be because it takes *time to establish connections and relationships*. If people got more Personal Satisfaction out of having an inter-garden community they might be more willing to invest time. Though many of the interviewees expressed that inter-garden cooperation is only *icing on the cake*, those that had experienced inter-garden cooperation were very positive about the outcomes, learning and otherwise. In order to foster inter-garden cooperation, gardeners need to have to be motivated to do so. If one wanted to develop partnerships between gardens, I would suggest partnerships where they experience mutual benefits. If this could be done within

a Local garden Network, it would also reduce the physical distance between partner gardens, a cited barrier.

6.1.3 Striking a Balance

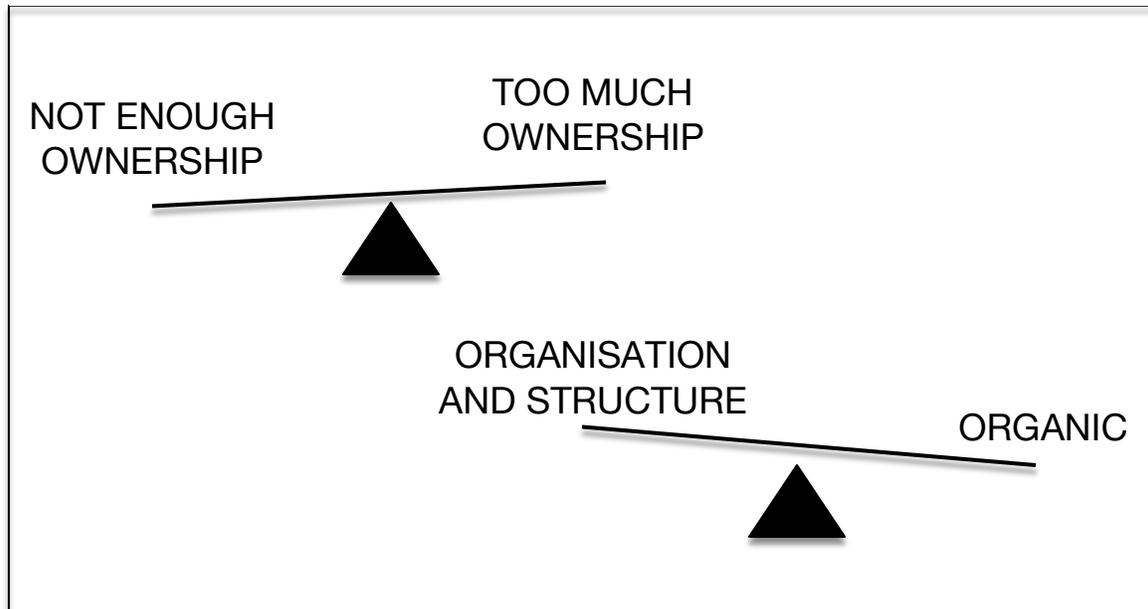
Out of the previous chapter, some contradictory results emerged. An unresolved conflict I'd like to highlight using "polarity mapping" (Murray, 2009, p. 106) is the need for learning to Occur Organically, but also the need for it to be Structured and Organized. To explain this, I'm going to go back to the conversation about Ownership that I had with Khaled. He had found that *the ownership feeling that people get prevents people from sharing*, but conversely, people also need *to believe they have ownership* in order for them to feel Satisfied with their experiences. What we uncovered from this is that a balance needs to be struck between people having so much ownership that they become controlling, and not having enough ownership such that they give up and leave.

I see a parallel with an Organic versus Structured approach. When the community lacked flexibility, gardeners found it hard to make time in their schedules. But similarly, too much flexibility meant that people didn't spend time in the garden Together, which is documented as one of the primary benefits to community gardening (Carney et al., 2012).

A pattern that could be noted for meetings is that, often, the interviewees described them as appearing Organically, but over time they became more hardened routines. So perhaps what we can take from this is that in the case of conflicts such as these, a balance or compromise might be the answer.

I would then like to link this to two Practical Learning Approaches: Reflexive Learning and Subjectivity. Subjectivity was seen as a barrier because it made developing skills and knowledge a more complex process. I propose that to cope with this challenge, a Reflexive Learning style is effective. This is because achieving a balance is not an absolute goal, which is why checking and rechecking is necessary. This is consistent with a sustainability approach to learning where "dialogically-reflexive communication" for "sustainability-bound learning in changing landscapes of knowledge communication" is needed (Adom̄ent, 2013, p. 11; Colucci-Gray et al, 2013). This can be seen in Figure 16,

Figure 6. A depiction of the balance between flexibility and control, and organized and organic approaches.



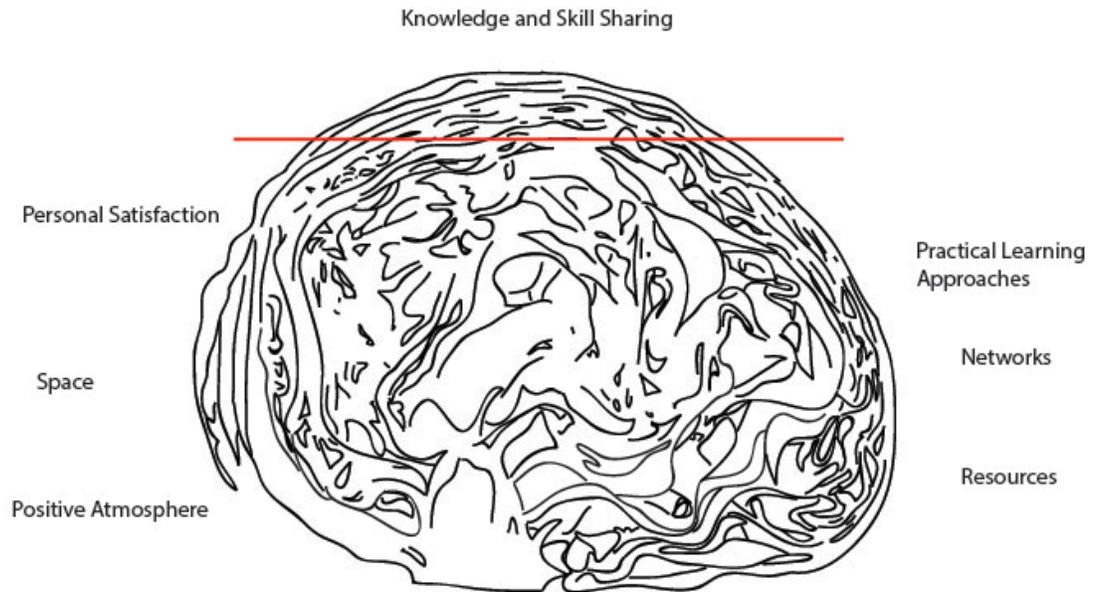
where a balance through reflexive learning needs to be struck between not enough Ownership and too much Ownership, as well as between Structured and Organic learning.

6.2 The importance of Direct versus Indirect Factors

As can be seen by the sheer volume of responses concerning Indirect Factors compared to Direct Factors, having the right Educational Systems and Culture is absolutely critical to learning. This could indicate a number of things. Firstly, it could mean that the infrastructure has been more of a challenge to establish than have been Educational Behaviors or Experiences. Or secondly, it could mean that the knowledge and skill sharing that has taken place is so sophisticated that gardeners end up turning their attention to creating a better learning environment. But thirdly, and what I think is most likely, is that effective Educational Behaviors and Experiences emerge in the process of creating effective Educational Systems and Culture. Consider some of the following interrelationships.

Having an appropriate garden Space (Indirect Factor), that is visible, accessible, has the required amenities, a guarantee of permanence, is well maintained with a communal plot and functions as a meeting space – enables certain Learning Approaches (Direct

Figure 7. Knowledge and skill sharing as the *tip of the iceberg lettuce* in community gardens



Factor). In this case, a Hands-On approach is possible given the sufficient Indirect Factors.

A Coordinator planning Regular Meetings and Larger Events, cornerstones to Educational Systems, mean that gardeners can work together in the garden and participate in given activities. Or in other words, having adequate Human Resources to work on Networking (Indirect Factors) can lead to a well-Organized garden (Direct Factor), as is the case at the Demonstration Community garden.

Since a good turnout to meetings and larger events was necessary, it is understandable that adequate marketing is also necessary to enable a good turnout. And it's only a good turnout that will bring the teachers and the learners and the observers to the garden to enable quality learning. Again, these Indirect Factors are preconditions for the Direct Factors to contribute to sharing of knowledge and skills. So a lesson that perhaps underpins much of this is that learning may be, as Laura said, *icing on the cake*. Or as Paul said, *the tip of the iceberg lettuce*.

So how does this relate to what we already know about one of the great outcomes of community gardening: knowledge and skill sharing? Well, firstly, learning clearly needs

to be supported by a great variety of factors, ranging from specific pedagogics all the way to having a garden located in the right spot. All of these Direct and Indirect Factors are not only supporting knowledge sharing – in fact, many of the things brought up in the interviews and questionnaire are ends in themselves. Who would argue that a Positive Atmosphere in your community, effective social Networks, or Personal Satisfaction are unworthy aims?

But conversely, knowledge and skill sharing can also be seen as underpinning some of these same goals, such as a Positive Atmosphere, effective social Networks and Personal Satisfaction. Perhaps, in order to find out about a specific fungus in your garden, you just asked your neighbor in the next bed over if they knew what it was, and in the process everyone in the garden came over to take a look at it Together. But none of them knew, so you end up reaching out to members of other gardens for help, building your Networks along the way. What could be taken from this is that when we are talking about developing knowledge and skill sharing in community gardens we are only scratching the surface.

It's worth noting that these themes uncovered have been seen before. Guitart et al. (2012) found eleven cited benefits of and ten motivations for joining community gardens in peer-reviewed literature. One of these was education, the focus of this study, and several of the others correspond with the Major Themes identified. Life satisfaction corresponds with Personal Satisfaction; social benefits liken to Networks; and enhancing cultural practices, reduced crime, and social benefits all connect to a Positive Atmosphere (Guitart et al, 2012). The new information that I highlight in this section is that learning needs to be done while simultaneously aiming to create a Positive Atmosphere in an appropriate Space, developing Networks, encouraging Personal Satisfaction, using the appropriate Practical Approaches and securing Resources. Or in other words, having a multiplicity of goals enables synergies to emerge which contribute to achieving the goals more successfully than if they were approached in isolation.

6.3 Room for Improvement

While there are some clear, transferable and possibly even scalable successes that have taken place in Calgary over the past several years, it is important to consider areas for improvement.

6.3.1 Sources of Funding

In many ways, community gardening in Calgary has benefited from the abundant Resources available. But one issue that is linked to this is that much of the funding for the community gardens comes from oil and gas companies. One questionnaire respondent reported that the donations actually led to a lack of Ownership:

There is much too much reliance on grants and labor from corporations. At my community garden I feel the use of labor from community service and corporations has led to complacency and a lack of investment in the garden by gardeners.

Most of the participants interviewed belong to gardens that have in the past, or continue to receive grants and donations from the petroleum industry. On the CRGN website, six of the fifteen funding options suggested are, at least in part, contributed to or provided by these companies (Calgary Horticultural Society, 2012). And while these donations have made the success of so many of these gardens possible, it would be worthwhile to consider how essential such funding is in establishing community gardens the way Calgary has, especially since accessing funding has been widely reported as one of the challenges in community gardening (Guitart et al., 2012). But on a more positive note, John, for example, seemed to think it would be possible to cut down on the need for such funding since he said the majority of it has been spent on lumber.

The issue of funding could have implications on the transferability and scalability of the policy in Calgary. Furthermore, incorporating funding into the picture of the sustainability of community gardening in Calgary provides a more holistic perspective.

6.3.2 Poverty Reduction and Social Inclusion

It would be valuable to draw a connection between the ‘trendiness’ of community gardening and Diversity in the Calgary scene. Goals such as food justice and poverty reduction were mentioned by interviewees, yet the 2009 policy is geared toward a more suburban, middle-class style of community garden, given that they are recommended to be linked in with a CA. A main trend in the literature about American community gardening is a focus on the “social aspects of community gardens in poor areas” (Guitart et al., 2012, p. 370). But a Calgary gardener mentioned that the approach to sustainable food, as it is now in the City, is to a certain degree *an elite dining club* rather than a social development tool or contributor to food justice. Because, as they pointed out, *we want farms to make top dollar, but in the process of doing that we cannot sacrifice on the altar of Slow Food apathy to Food Justice initiatives.*

Dyment and Bell (2008) found that schools with green spaces are “more inclusive of people who may feel isolated on the basis of gender, class, race and ability, suggesting that these spaces promote, in a very broad sense, social inclusion” (p. 169). Similarly, Colding and Barthel (2013) found that Urban Green Commons (including community gardens) “can facilitate cultural integration through civic participation” (p. 156). This evidence is promising, and with further efforts, more diversity and the needs and rights of people marginalized by race, class, gender, sexual orientation and/or ability could be prioritized in Calgary as well.

Furthermore, as was mentioned in the results, having a more diverse set of participants adds to the garden as well: the *immigrant groups from farming backgrounds* that visited the Demonstration Garden brought their knowledge and skills to learn from. And, as John pointed out, more diverse participants could mean a larger volunteer base. The Demonstration Community Garden is a good model for looking into empowerment of marginalized citizens. Hiring people with barriers to employment in gardens is a strategy aimed at engaging people in meaningful work.

6.3.3 Agrarian Reform

In this next section, I would like to highlight one of the contributors to Personal Satisfaction: Food. In a literature review by Guitart et al. (2012), it was found that just

behind social development, a desire to “consume fresh foods” was the strongest motivating factor for community gardeners (p. 367). Given that this is an important goal for gardeners, it is somewhat problematic that the approach the CGRN and the City have to community gardening is first and foremost towards social development. But unfortunately this is because, according to present zoning regulations, greenfield areas in Calgary are not permitted to be used for food production. As discussed above, aspects of social development, such as developing Networks and creating a Positive Atmosphere in communities, are interlinked with Personal Satisfaction, of which Food production is part. Given this interconnectivity, these social development goals that are being aimed for may be undermined by the City’s zoning regulations that inhibit Food production as a goal.

Referring back to the Calgary Eats! targets, it might be necessary to reassess how UA is being carried out in Calgary. To increase both sustainable urban food production to 5% and “the consumption of urban- and regionally produced by Calgarians” to 30% by 2036 will be difficult if UA in Calgary is only a social development tool in the form of community gardens.

There are two strategies that might bring about a heavier emphasis on food production. The first would be to redefine social development to include food production. Given the social benefits of UA, this is a reasonable suggestion.

And secondly, given that the zoning in Calgary lends itself towards social development but not food production, a possible solution to consider is *agrarian reform*. This is to say that, it would be beneficial for the city to consider redefining its zoning policies to enable urban agriculture to cater toward food production as well as social development. This has been done in cities like Seattle to great success. As part of their Local Food Action Plan, the City of Seattle adopted a bill related to land use and zoning to support urban agriculture by allowing “urban farms” and “community gardens” in all zones and allowing “residents to sell food from their property,” among other amendments encouraging UA (Bill-116907, 2010; Sugimura, 2010). The City of Calgary would not have to reinvent the wheel in order to make these changes; they would only have to borrow other cities’ plans, such as Seattle’s.

6.5 Reflections on the Methods and Methodology

6.5.1 Limitations and Biases

There are a few aspects that could have influenced the responses on the questionnaire. One is that it was an online questionnaire, which would mean that tech-savvy people would be more likely to take it. Another bias is that the emails used to send the questionnaire were all taken from the database on the Community Garden Resource Network's website. A proportion of the gardens in the database did not have emails listed or contact information easily accessible on an online search engine. Therefore there could be a bias in the questionnaire towards the CGRN, because those with who the CGRN are in contact probably have different perspectives on it. I took every effort to combat this bias: I used social media to advertise the questionnaire and contacted relevant CAs when there wasn't other contact information available.

The STP phenomenon is also linked to one of the limitations of my research. Since the STP are already overcommitted, time was barrier on their side for active engagement in this research. This is a commonly cited difficulty in Action Research (Bloemhard, 2006; Klocker, 2012). A number of the interviewees met me at their workplaces, and many expressed that they couldn't participate in a long interview. Out of consideration for their schedules, I tried to make my research as participatory as possible within the given time constraints.

6.5.2 Ethics

Ethics is an important part of Action Research, and in order to expand on the literature in this aspect of the methodology, and also to reflect on the topic for this project, the following section will be devoted to ethics.

The main ethical problem that arose from this research was the fact that the network of Community Gardeners in Calgary is relatively small. Some of the interviewees knew each other, and furthermore, some of the interviewees have decidedly different viewpoints and conflicting interests which have, in some cases, manifested as real-life conflicts. The first and most important thing I did was to ensure anonymity to the best of

my ability. Disguising the garden's and participants names was a first step, and omitting or modifying identifying details was a second.

Furthermore, each time a sensitive quote or viewpoint came up, I considered to what degree it would benefit the outcome of my thesis and research. If the quote or viewpoint was only provocative and wouldn't result in a better outcome or higher level of understanding, I omitted it. If the viewpoint was important to explore to produce a better outcome, I framed it in terms of producing a solution without accusation. In line with my objectivist ontology, I hope that taking such a neutral approach will enable a deeper understanding of the problems and their solutions for people coming from different perspectives.

Chapter 7:

Conclusions, Proposed Action and Further Research

This short chapter will tie together the loose ends and highlight the contributions of this project I have undertaken, give some suggestions for further research, and then, in line with my Action Research methodology, propose next steps in order to produce some action-oriented outcomes.

In exploring the findings, I highlighted the roles which gardeners take and note how these roles could increase social capital, why inter-garden networking is not thought of as a priority and how to change that, and that Reflexive Learning is a useful way to approach subjective issues like striking a balance between polarities. Possibly the biggest contribution is the finding that knowledge and skill sharing is merely *the tip of the iceberg lettuce*, and has unique synergies where it is dependent on and contributes to creating a Positive Atmosphere in an appropriate Space, developing Networks, encouraging Personal Satisfaction, using the appropriate Practical Approaches and securing Resources.

I suggest, in the case of Calgary, that there may be room for improvement in accessing funding from sustainable sources, integrating poverty reduction and social inclusion more actively, and bringing food forward as a more central part of UA in Calgary in order to meet the Calgary Eats! targets for urban food production.

The first of my suggestions is that I recommend further action-oriented research concerning community gardens. While the appropriateness of Action Research in certain settings has been debated (Bloemhard, 2006; Klocker, 2012), my experiences have been very successful. With the way the interest is growing and the receptiveness I've experienced as a researcher in community gardens, there is fertile ground in which to sow.

Secondly, my suggestions for future research are:

What are the motivations of the donors to community gardens? How much of the funding is absolutely necessary? Are there other strategies to raise funds for community gardens?

And:

To what degree is inter-garden networking useful for knowledge and skill sharing?

And finally, in order to follow through with the Action Research Methodology, the next stage of this project should be to develop an action plan in collaboration with stakeholders like the CGRN, the City, and interested members of community gardens in order to improve knowledge and skill sharing in tandem with the other Themes highlighted. My first step will be to send this document out in order to open up a dialogue about what issues they feel are most important. Are they interested in enabling Butterflies? Do people want to improve social inclusion in community gardens? Poverty reduction? Do there need to be improvements on a policy level? Do zoning codes need to be changed? Is there a need to establish local garden networks in tandem with the CGRN? I now conclude by posing these questions for the community gardeners in Calgary, and upon my return to Calgary, I hope to further the dialogue.

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Appendix A: 2009 Policy Description

The 2009 policy isn't a formal document, but rather an unwritten agreement between the City of Calgary's Parks Department and the CGRN. Accessible information on the policy is catered towards people looking into establishing community gardens. Figure 18 is the information presented on the City of Calgary's website, which details the process of establishment. A similar but more detailed and practical description can be found on the Calgary Horticultural Society's website (2012).

Figure 8. Information concerning the establishment of community gardens in Calgary on the City of Calgary website (City of Calgary, 2012).

Community garden requirements

Interested in starting a community garden? First, submit a  [Community Gardens Application Form](#) for location approval.

If the application is approved by Parks the following requirements will need to be met and documentation submitted:

- Develop a partnership with your local community association as all new community gardens must be under Community Association Licence of Occupations.
- Organize a volunteer group (at least 10 people recommended) to develop a plan for a community garden.
- Establish garden guidelines to support the development and outline the operation of the community garden.
- Develop a conceptual garden design plan (beds, layout etc.).
- Outline how the garden provides a public education component and how the garden is accessible to others.
- Create a financial plan/budget for the garden.
- Survey neighbours to inform them of the garden plan and gather their support. Greater than 2/3 of the residents within site lines of the proposed garden must support the garden project for the application to proceed.
- Demonstrate community need/community support through correspondence from community garden partners and supporters.
- Garden must comply with existing bylaws, policies and procedures.
- Review the  [definitions](#) list for more information.

The City accepts community garden applications year-round and processed on a first-come first-served basis.

What happens next?

Each community garden is unique. Applications will be reviewed from a site specific perspective to determine if the plan for the garden is compatible with existing site use and any limitations such as environmental conditions, future development and/or access considerations. A diversity of garden styles will be encouraged to address the variety of sites and incorporate conditions of development. Site elements such as irrigation, tree cover and slope will be considered, along with distance from other recreational and residential spaces. Preference will be given to the development of one garden per community first; additional sites may be considered for approval depending on the community need and community support.

In addition to the land approval, new gardens may receive **up to \$5,000** in materials and irrigation from The City. Funding will vary in the amount based on site location and the availability of resources and will not be available for established community gardens. For a list of granting agencies please contact the [Community Garden Resource Network](#).

For more information, please visit our [FAQ](#) or [contact Parks](#).

Appendix B: Interview Questions

Tell me about your garden.

Please describe two memorable instances of horticultural-related knowledge or skill sharing in the community garden you participated in: one where the transmission was successful, and one where it was unsuccessful.

Please keep in mind:

- Who was there, and which people played a critical role?
- How was the knowledge communicated?
- What knowledge was communicated?
- Where did it all take place?
- When did it take place?
- What were the elements that made it successful?
- What barriers existed?

What is the nature of your relationship with the CGRN?

Is there anything you want to add?

Appendix C: Online Questionnaire

Community Gardening in Calgary: A Questionnaire

The following questionnaire should take about 5 minutes to fill out. Your answers will remain confidential unless you specify otherwise. You are able to withdraw at any point during the questionnaire or afterwards by emailing rebecca.laycock@gmail.com. The results will be used in a Masters Thesis concerning community gardening in Calgary.

In the following questionnaire, when the terms KNOWLEDGE and SKILLS are used, they will be referring to any knowledge and skills related to community gardening. These can range from specific competencies about different aspects of growing, such as pest management and seed saving, to a logistical aspects, such as volunteer coordination and applying for funding – As well as anything that you feel is relevant to the success of your community garden!

1. How long have you been gardening?

- This is my first year
- 2-4 years
- 5-9 years
- More than 10 years

2. What is the main community garden you participate in?

If other, please specify:

3. Which organizations, if any, have you have you exchanged resources with (including information/experiences, labour, funding, produce donations, etc)?

- Community Garden Resource Network
- Parks Calgary
- Permaculture Calgary
- Verge Permaculture
- The Drop-In Center
- The Calgary Interfaith Food Bank
- Green Calgary
- Community Association (please specify)
- Businesses (please specify)
- School (please specify)
- Other (please specify)

4. In the 2012 gardening season, how many community gardens were you in communication with?

- 0
- 1-2
- 3-5
- 6-9
- 10 or more
- I don't know

5. Which community garden(s)? If you can't remember their names, please describe them.

[Continue »](#)

6. From which THREE resources you have learned the largest quantity of your gardening skills?

- Family members
- Friends outside your community garden
- Other members of your community garden
- Gardening workshops held by the Community Garden Resource Network
- Gardening workshops held by someone other than the Community Garden Resource Network (please specify in below box)
- Books
- The internet
- Trial and error/Experimentation
- Other (please specify in below box)

7. From which THREE resources do you generally have the highest quality learning experience?

- Family members
- Friends outside your community garden
- Other members of your community garden
- Gardening workshops held by the Community Garden Resource Network
- Gardening workshops held by someone other than the Community Garden Resource Network (please specify in below box)
- Books
- The internet
- Trial and error/Experimentation
- Other (please specify in below box)

8. If you had a community garden-related question, which THREE resources would you normally would turn to for help?

- Family members
- Friends outside your community garden
- Other members of your community garden
- Gardening workshops held by the Community Garden Resource Network
- Gardening workshops held by someone other than the Community Garden Resource Network (please specify in below box)
- Books
- The internet
- Trial and error/Experimentation
- Other (please specify in below box)

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Continue »

9. WITHIN your community garden, what are the most important factors that ENABLE sharing knowledge and skills between members?

10. BETWEEN your community garden and other community gardens, what are the most important factors that ENABLE sharing knowledge and skills?

11. WITHIN your community garden, what are the greatest BARRIERS to sharing knowledge and skills between members?

12. BETWEEN your community garden and other community gardens, what are the greatest BARRIERS to sharing knowledge and skills?

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Continue »

14. Which of the following are areas in which you have experience or expertise? (Tick as many as are relevant.)

- Pest management
- Composting
- Permaculture
- Construction
- Irrigation
- Volunteer coordination
- Donating produce
- Applying for funding/grants
- Education
- Native plants
- Working with people with barriers to employment
- Seed saving
- Horticulture therapy
- Vertical farming
- Lobbying
- Web design/maintenance
- Propagating garlic
- Other (please specify)

14. Do you have anything else to share about your experiences with community gardening?

If you wish to be entered in the draw to win "Saving Seeds As If Our Lives Depended On It" by Dan Jason book or a \$50 gift certificate to Vale's Greenhouse, please enter your name and contact information. You will only be contacted if you win, unless you specify otherwise.

Name:

Email:

Phone:

- By ticking this box, I am expressing that I would like to be entered into the draw for the book and gift certificate.
- By ticking this box, I am expressing that I can be contacted for further information and that I would like to receive a copy of the resulting document.
- By ticking this box, I am expressing that my answers can be used to develop the networks between gardens in Calgary.

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[Submit](#)

Community Gardening in Calgary: A Questionnaire

Your response has been recorded. If at any point you wish to withdraw the information you have provided, please contact rebecca.laycock@gmail.com. Questions, feedback and comments are also welcome. The final thesis will be sent to those who have expressed an interest in seeing the document, but if you have not expressed your interest but decide you would like to see it at a later stage, please feel free to contact me.

[Create your own form](#)

 Google Drive

Appendix D: Sample Interview Transcript

Date: January 21, 2013

Length: 22 minutes and 35 seconds

Community Garden: The Library Community Garden

Interviewee: Brian

[I had attended one of the garden's board meetings, and we had been talking about the design of the raised beds that had been built when I began recording.]

Bekki: The first thing I wanted to ask you is actually to do with that. How much time and the cost of materials and everything. Is that a doable thing for most gardens? Or is that only because you guys got the grant?

Brian: We had good funding from [a oil and gas company]. I want to say it was 3000 the first year and then 500 we're looking at each year. We went out because Bill and I, we do construction, so we went and used a lot of our contacts to get discounts on material and some of it donated. The pond liner we had donated from one of the oil companies that used that material to line their tailing ponds and stuff, so it was left over. It's doable, but you have to be pretty resourceful. We still spent probably the whole \$5000 to build and we probably got our material for around half price. Just by using different contact, though. As far as soil and gravel, the city gave us a donation of material instead of money. The cedar was expensive. We built it – because they're 50 feet long and so we had to go with a little heavier material. If you were going to build your beds in smaller sections, you probably wouldn't have to build it out of the four-by-four posts. You could build it out of two-by-four or two-by-six and that would probably bring the cost down quite a bit. The weeping tile was cheap. It's like 30 cents a foot or something. But pond liner, finding something that's durable, and can stand up to having a bunch of gravel dumped on it, we had to go with something a little heavier and so... One of the guys, he used a couple of his connections with people he knew to find it. But I think, it is pretty doable. I know I've shown the design to some people and I know people who have built smaller versions in their own backyards, so. When you are going smaller, you don't need to use a pond liner, you could use tarp or something like that. And that's only if you need to segregate. It's nice to keep the water in so it stays longer, but it's not 100% necessary.

Bekki: And so where did you guys get the design from?

Brian: One guy, who's joined our group, he came to a meeting kind of to consult. He lives in the area and liked the vibe, I guess. And the fact that, I hate to say, the most community gardens and that is a collection of nearly all women. But there were me and Bill and a couple of other guys, so there were some people who were able to do the construction and try a bigger project. And originally, this was only going to be a part of

the design mirror, we we're going to try and capture water off the roof of the building, so we would never have to use any city water or anything like that. Because the city has laws against – bylaws and regulations against the collecting of the water that way, so we couldn't do it with this design. But Jim, his company, is basically, he's a gardening consultant. So we got very lucky that he lived in the area. And kind of liked us all, and decided to get involved because we were willing to try some new stuff.

Bekki: How did you get in touch with him?

Brian: The Calgary Horticultural Society, or whatever. They had been sending, to our early meetings, observers. And he's connected with them. So they asked if he would come, just kind of to lend a little expertise. And then, because we were open to trying stuff and he lives walking distance from here, he decided that he'd like to get involved. Even though their whole yard is a big garden.

Bekki: But is the community aspect is important too?

Brian: That was it. He said it was nice to see a different demographic. And a lot more enthusiasm.

Bekki: So what I've been doing for my interviews is I'm going to get you to tell me a story or two if you can remember them.

Brian: Okay.

Bekki: About your experience with the garden and what I'm looking for is one really successful communication of knowledge or skills or whatever, and then a less successful one. One that didn't work as well. And that can be from either perspective, from you teaching someone or someone teaching you.

Brian: Okay. I guess I came into this without very much gardening experience or knowledge, but a fair bit of building knowledge. So my biggest success, I guess, was understanding how to build the garden. It worked pretty well. We came up with the design, tweaked it a bit, and then spent a lot of time trying to hunt down material at decent prices. And then organizing the build. And so I guess once we got it built and we had our plot, we kind of tried to grow some things that were kind of fool-proof. You know, radishes, carrots, zucchini and things like that. So we were pretty successful in that. As far as something that wasn't successful, was just that we hadn't tried anything exotic or different yet. But it's only one year that we've been running. We started, we didn't get the build done until June, so we missed a couple weeks. Our expectations were just to have things that we could harvest. And most of the situation has been really positive as far as the growing, and the only problems that we've had is there's some personality clashes in the group. But I don't know if that helps you too much, though. We didn't have any massive failure in anything we've tried to grow. The biggest problem was a little bit of petty theft.

Bekki: And so what kind of things did you learn about in the process and who learn the gardening skills from?

Brian: Well, there's several people who have come with a lot of gardening experience, like Dan and Holly, who I might have mentioned. And Melissa who was here, the artist. And a couple of other people. And so anytime that we ran across somebody that was here while we were here we picked their brain. We spend a lot of time early, trying to identify weeds and what wasn't. But the people who are quite knowledgeable are friendly and so, you know, you can see them working on the garden and say, "Can you come here for a few minutes? Is this a carrot or is..." And they were able to identify what were the carrots and what were the mimickers. You know, and showing us different things. "If you see these leaves, then you need to get rid of it." I guess, because our plots are quite small, I don't know if anybody's here to totally feed their family. It's really a very social thing. And that's kind of where our focus was. But we were also really happy because we did pull a lot of produce out of it.

Bekki: And so the people who came with a lot of knowledge, how did they get involved with the garden?

Brian: Well, a lot of them are people that frequent the library. We never did a whole lot of advertising at first, because we had a fair bit of interest, just from people that knew in the library. So most, I think, most of the people are people that come and go from the library quite often. And then are active in the community too. So some of them would have been talking to the librarians, and the manager quite often. And so she would have mentioned that [a company] is sponsoring a garden and then if they wanted to become involved. I don't think many people knew each other beforehand. My wife came to the meetings before I did, so it was probably four months in when I started to come. So I'm not sure how a lot of the people came. But I think most of them heard about it through the library. And I know a lot of them garden at home they weren't looking at this to be their food source or anything. It was really this social aspect and community involvement that drew a lot of them.

Bekki: And so going back to less successful experiences, what were the barriers that kept you from growing more complex things? Are there any ways you could see improving that?

Brian: The barriers, I guess, were at first coming in without much knowledge, just doing something that was safe and easy. And because of our build time, we started late. And, you know, when we were planning what we were going to plant, we hadn't really built all the relationships that we've built over the summer with the people. So I guess the barrier was really just lack of knowledge. And now, knowing the people around, knowing we can get the advice and help, we're planning on growing different things next year.

Bekki: I've talked to some people at other gardens and they have regular meetings. Like you just know people are going to be there on Tuesdays at 6 or something. And do you guys have anything like that? Or any established time?

Brian: Over the summer we were trying to have a monthly meeting in the room here. And then generally people were there in the evenings and there are certain people you can count on to just be there about every evening. Tending and pottering around. Other people every two or three days. You can almost guarantee someone would be there. And because there's a small group of only 25 plots, when somebody's there you can talk. I don't think we formally said we were weeding Wednesday evening or anything like that. But I think the enthusiasm was quite high, so people were here quite often.

Bekki: So most of the people have plots are in the neighbourhood. Or is that a requirement for your garden?

Brian: It's not technically a requirement, but it's the way it's worked and we encourage that. But we do have the Calgary Immigrant Women's Society had a plot, which they used for their youth wing. So it's a little program where they brought some of the immigrant kids from around the city and taught them about the plants here. And then there's a seniors lodge just down the block or two away and they have two plot that they were tending. And [youth] club have a plot. I think they will next year too. From [local] area. We kind of promoted some of the groups in the area too. To keep the involvement. Our plan was always to be more than just a garden. It's a kind of a meeting area. And our next couple of phases that we're going to build will be a little more towards the social part, and a little less towards the garden. The garden, it's a garden, but we wanted a meeting place to tie in with the library. We have a kind of a partnership with them, and one of the deals on that was we wanted and involvement where there was a garden space where people can feel relaxed. And the library can, in nice weather, tie some of their programs in and be out there, around the garden. And to be more than just a place where people come and dig in the dirt. Really a meeting place. We're trying to find the balance there. Because things are more successful when they have a positive attitude. And it's not just people coming to the garden.

Bekki: I wanted to ask about the plots. Just to clarify, it sounds kind of like you're renting out these plots and you have a couple communal plots? Or how does that work?

Brian: We had one communal plot where basically people could come sample or take produce from. And then we're hoping either this year or next year to build one that's kind of off to the side and a little bit bigger and leave signage out, so people in the neighbourhood will know that the produce – the vegetables that come out of it are for the people to just take. Because one thing we found was we're a community garden, which means we rent out the plots, but a lot of the people here, especially the immigrants who have lived in Toronto and Vancouver, they're used to, what they call public gardens, which are tended by volunteers, but anyone can harvest. So, they're coming and they're harvesting and they don't know that they're doing anything wrong. And nobody's really all that upset about it, we just want to find a way to accommodate them too. It's a good idea.

Bekki: And so who looks after the extra plot, or is that part of shared duties?

Brian: It's part of a shared duty. This year Melissa and her husband kind of looked after it because they have a massive garden at they're place. So they have some of the veggies that come out of that plot, but really it was available to anybody. But when it gets a little larger, we'll probably plant out, because planting out costs a little, we'll do it out of the overall budget. And then probably we'll just find a few people who are willing to weed it and just keep an eye on it. And it will be just part of the regular watering routine. They're really not a whole lot of extra work. It's only three feet by 10 feet. Thirty square feet. It's not a lot of work.

Bekki: Half the work is getting to the garden.

Brian: Building the garden was a lot of work; tending it really isn't. Especially since the individuals don't really have to water and adding worm castings and all of that. There's not a lot – you weed, and you look it over, and then you pick. And that's about it!

Bekki: Let me think if I have any more questions. What is your relationship to the Community Garden Resource Network or the Horticultural Society?

Brian: Not too many of us were connected with them to start with, but because of the involvement of [the company], they come to our meetings. So I guess we have a new, but friendly relationship. They're available to us for advice and we have access to some of their programs, if they're needed. You know, to be able to apply – they have a seed program and all that sort of thing. I guess our relationship is friendly, but I don't think it's overly close yet.

Bekki: And do you guys ever – in your meeting you mentioned having a buddy-garden or something like that – and I was wondering if you guys have had communication with other gardens?

Brian: Well, when we were doing our build, because Bill is quite connected with the garden community, he had a friend who's the president of the [another] Community Garden, and they're really close to us. Like a 5 minute drive away. And they had won a grant [...] a few years ago. A massive... something like \$100 000 garden project. So they have a lot of tools and that sort of thing, so we were renting from them because it was really cheap. Because they're community-involved-type people they came and assisted us with the build and so we have communication with them. And it was our first year, and kind of starting to get on track. So this year, and in the coming years, we're looking to do more idea sharing, and maybe even planning a couple of events together. Like, we would invite them to come to our garden for picnics or whatever. And they would invite us. So we're looking to start that with them. And who knows, it might spread. It's kind of Mark's vision, the guy from there. He's kind of excited that we're so close and seemed really open to it. Because he's looking to increase the community involvement in his garden. They have a really different set up, but it's quite nice too. But they're not in a library's front yard, so they can be quite different. So it's really good to see what they do, and for them to see what we do. Like, share the ideas back and forth.

Bekki: And so you got in touch through Bill?

Brian: Yes, yes.

Bekki: Cool. And so it was key to have a bridging person to get you in touch?

Brian: It really is in just about anything like this. But you know, the people like Rob, who are really involved in gardening, they're just going to know each other, right? So you're foolish if you don't take advantage of that. Because really, for us, we got involved because we have a young son. He'll be nine right away. And we wanted to get him introduced into growing vegetables so he'd be more interested in eating them. And it worked. So we can learn, and it's a small plot here, but it's nothing to say I can't build a garden in my yard and take the knowledge I have here back home. And still keep this one to be involved in the community group and everything. And a lot of people have taken that attitude. You come here and socialize and learn, and take what you learned home and do it on a large scale. Or large enough scale to support... I guess for the community garden for us, because we have a limited space compared to some of them, but that's a little more of our focus. But it makes it a lot more fun too.

Bekki: I think that's all of my main questions, but I'm just wondering if you have any feedback on my research question. I'm interested in knowledge sharing and that sort of thing, and how relevant that is to community gardening in Calgary and that sort of thing.

Brian: Well, I think the focus, for me in a community garden here, should be education. I grew up in a small town and my family and that all garden, and I just wasn't really a part of it. But it's something that's kind of being lost and anytime that anyone can get out there and show the skills, that it's not some intimidating thing. Cause it really isn't. Everybody will have what they can and what they can't do, by space or time or whatever. But everybody can do some. And I think anytime that you can share information and just have people know that there's other people like them out there, they'll connect and become more visible and it will just advance gardening. Bring it back to where it needs to be. Although I worked at a massive grocery store selling produce, I'm not necessarily fond of what they sell. It's definitely better to grow your own. And it's an art that I think is being lost in the cities. I actually have a cousin who was a horticultural student. She was working for [a university] years ago and now she does a bunch of work with the [another university], creating new varieties of potatoes and things like that. So she'd be very proud that I am doing this. She's quite a bit older than me, so. But she would be proud that we're taking an interest in gardening.

Appendix E: Detailed Coding Tables

The following tables include the descriptive codes, which have only been used strategically in the text of the thesis. These tables don't show the exhaustive list of the codes, especially from the questionnaire. This is because they are often repetitive. In these cases, I retained the most descriptive quote to represent the rest.

Table 6. Detailed Coding Table for the Major Theme of Positive Atmosphere

Analytical Codes	Descriptive Codes
Vision	<p>Lori: And the gradual progression was we started with a vision. We, just as a group, discussed what we wanted to experience or have for the community. And what we wanted it to represent and that kind of thing.</p> <p>Khaled: And I think, I'm not sure how much of our experience is transferred somewhere else. I'm sure it's transferred in people's backyards, but it hasn't transferred in an actual community garden. And that's probably because the people who come have a different vision of what a community garden is.</p> <p>John: So creating these understandings, this superior understanding with people about what they think that food justice and food policy in community gardens really are. What their vision is, and what your vision is.</p> <p>Sharon: So then once you knew that it wasn't about the food necessarily, then that made me say, "What is this about? Why are we doing it?"</p> <p>Laura: And we found that it wasn't working with the Salvation Army due to, just the bulk of food that they would go through</p> <p>Dave: I know one of the things more generally we've been looking at, that's been looked at in the volunteer sector is changing expectations of the volunteer and how that squares with what you actually need to do</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • I could never get the concept around what a community garden is to those within my garden members • People have different levels of commitment to the garden and different expectations about what they want to achieve.
Norms	<p>John: They maybe wouldn't share [their skills] with their colleagues, because they'd be, like a "hippie", or "You're, like, old school" or whatever. Nobody does that anymore. We all go out and go to the Rouge, or go to some restaurant if we want to get food. We don't grow it ourselves.</p> <p>Sharon: Is that someone from my point of view, who's not into that world. I go, ew. You want me to eat a carrot out of that dirt? People probably pee in there!</p>
Togetherness/ Community	<p>Laura: there were lots of volunteers with gardening experience and it was, you know, a shared experience</p> <p>Lori: And I think often it was the appreciation for everyone coming together</p> <p>Khaled: And the other thing is, with relationship building, relationships are fast-forwarded. Or you develop faster relationships if you are engaged in a common goal, and you try to achieve that goal together. You have to have that shared experience, you know. You have to have a challenge and you have to overcome it together.</p> <p>Brian: You come here an socialize and learn</p> <p>Khaled: And if you asked the people in our garden it's the same thing, and I'll tell you the same thing: the community part is really nice.</p> <p>Questionnaires</p> <ul style="list-style-type: none"> • Friendships in my case

	<ul style="list-style-type: none"> Having individual plots where people garden BESIDE each other instead of WITH each other. The garden can easily become a place where individuals garden in the same place rather than a place where community members come together to garden. People don't know other people within the garden and that is sad because it really is about community building and not peas and carrots. Opportunities missed.
Friendly/ Approachable/ Caring	<p>Khaled: the only way to really minimize [conflict] is to have good relationships between people. And care.</p> <p>John: You want improve anything, start to care</p> <p>Brian: the people who are quite knowledgeable are friendly</p> <p>Questionnaire</p> <ul style="list-style-type: none"> friendly & approachable leaders Not knowing people, if people are not friendly then you can't expand your own knowledge about what successes or set backs they have experienced.
Small Group	<p>Brian: And because there's a small group of only 25 plots, when somebody's there you can talk.</p> <p>Laura: it's a small organizations and I think people get to know other people</p>
Core Group	<p>Questionnaire</p> <ul style="list-style-type: none"> We have a core group of committed gardeners
Internal Politics and Personality Clashes	<p>Lori: getting all those personalities together could be a challenge as well</p> <p>Brian: the only problems that we've had is there's some personality clashes in the group.</p> <p>Khaled: The garden attracts all kinds of people, with all kinds of values and interests. And you get from the very flexible, easy-going, somebody who'd just very social, who wants to spend time, to somebody who's super hard-core. And rigid in their ideas. So, uh, had once person who, that was simply against moving dirt. Or moving soil. And that's a major part of the garden, right? If you want to do a successful gardening, you have to move soil at some point in time. Replacing soil, turning soil. But she'd read a book and, uh, she was convinced that that was not the way to go. Um, it almost got to a point where she was gonna physically prevent me from moving soil. In the garden. So that was conflict. And not very nice, and not very good. How did we resolve that? We didn't. I just waited until she was gone, and then I moved the soil. But the garden's big enough that you can do that kind of stuff, and it just passes.</p> <p>John: The first couple of years there was a lot of people, then one year we had one particular girl that got in. So this is the other thing that happens at community gardens. You get the internal politics that starts to happen. And some of the interaction with people. And this one girl came in and she... we always had a consensus attitude towards things, and she really became a little more dictatorial about what's going to happen. She was laying down the law, she didn't really share with everybody, what was going on. Some things fell off. And she was very... she had a way of pushing people away. And in the community garden thread I've read that a few times, you can get some people in the garden... A community garden is not the place to be hardcore activist. It's the place to be just like, aw, yeah, participation. If you want to be a hardcore activist, go out and do it with people who are not part of the choir. Go out and jump up and down someplace else. And so, taken in consideration that people are coming out and they just want to be in a group effort, we shouldn't be shoving things down their throat.</p> <p>John: some organizations got their little internal politics about where ideas come from</p>
STP	<p>Lori: A lot of times it's 10% of the people do 90% of the work.</p> <p>Questionnaire</p> <ul style="list-style-type: none"> Burnout among key members.

Table 7. Detailed Coding Table for the Major Theme of Space

Analytical Codes	Descriptive Codes
Visibility	<p>John: We think this garden here gets more eyeballs than all the other community gardens in the city combined.</p> <p>Laura: But usually, before, we have lots of foot traffic go by us. It's in a, really quite a neat, uh, spot, that's going to be even more visible now</p> <p>Dave: because it's quite visible off the bike path and it's... part of the mandate is to be a demonstration of what it is possible to do</p>
Accessibility	<p>Sharon: And I wasn't sure if they came down expressly to be a part of this [or were just walking by]</p> <p>Questionnaire</p> <ul style="list-style-type: none"> gardens are far away from each other because the city is very spread out.
Amenities	<p>Sharon: And those that did want a garden, there's no where for their vehicles to stop</p> <p>Questionnaire</p> <ul style="list-style-type: none"> We don't have a community centre to meet i here at Douglasdale
Permanence	<p>Laura: land base is pretty much guaranteed to always be there</p>
Meeting Space	<p>Sharon: So it feels more welcoming. And more inviting. And just come hang out type of a feel.</p> <p>John: It's just a matter of getting those [skilled] people to come out. So creating an environment that's inviting to them</p> <p>Brian: Our plan was always to be more than just a garden. It's a kind of a meeting area.</p> <p>Khaled: So, what I though, one of my ideas that we're going to try to implement is make it necessary for people to come into Cornocopia.</p>
Well-Maintained	<p>Melissa: you can plan all you want but if you don't have the infrastructurewatering the plants (sprinkler heads wycking sytsem) your garden designs will not flourish</p> <p>Dave: it all happens and that it looks good and it doesn't get neglected</p> <p>John: If you build [the garden], they'll come [and learn].</p>
Communal Space	<p>John: Make your community gardens communal.</p> <p>Brian: We had one communal plot where basically people could come sample or take produce from.</p> <p>Laura: basic sort of site maintenance, because I think that gets sort of let go, can get let go in a more communal situation. And it doesn't work as well. So. It would be interesting to see [the] garden if we rented out like, half of it, and then one half was used to grow food for charity, and then the other half... then you'd have a lot more people coming in and I think</p> <p>Laura: between the other gardens, I think the other gardens are renting out plots to so many different people involved, and they might not know each other.</p> <p>John: And then under the context of community, it's a misnomer for most of the Community Gardens of Calgary have plots. [...] So community access, but really it's not a communal experience.</p>

Table 8. Detailed Coding Table for the Major Theme of Networks

Minor Themes	Analytical Codes	Descriptive Codes
Attributes of Good Networks	Diversity	<p>Brian: I hate to say, the most community gardens and that is a collection of nearly all women.</p> <p>John: Stakeholder engagement. Make sure any group of decision making going on there has citizen engagement, citizen stakeholders in it</p>

		<p>John: Try and get people from all those sectors into a meeting or talking to one another to decide what's going to happen with that space. [...] You're going to have a space that has a lot of people involved. And a lot of people from different areas</p> <p>Dave: I think there's been about four different coordinators over the course of the project and its, everyone a little bit different and have different skills and that kind of thing, so I think it's been pretty good</p> <p>Sharon: And again, it goes back again to me, to it's supposed to be community. It's not supposed to be exclusive of anybody in particular. So sure, if I have the Drop-In clients managing it, and if I have the seniors coming in as the senior gardeners, and if I have a 20-something year old master garden class student, who wants to be the project manager of it, and then a few volunteers from their corporate offices come down and weed, then perfect!</p> <p>John: And reach other to the low-income, poverty sector of your community. There's always an emergency shelter somewhere in a community. Try to get those people involved, like we have with Drop In Center, and work hard with those relationships.</p> <p>Laura: we had some immigrant groups come through and look at different plants</p>
	Coordinator	<p>Lori: it's really good having somebody in charge I guess</p> <p>Khaled: it's important to have that key person</p> <p>Khaled: It's important to note that the way this garden started was all because of one lady, Jo. I don't know if you've heard of her. And I call her the beating heart of the garden</p> <p>Dave: So it is up to the garden coordinator to get that, to get the food in on time and get it harvested and all that. So really, the responsibility lies there</p> <p>Khaled: Every year you end up with a 'garden hero.' You end up with somebody who's spent more time, taken on more responsibilities, done more key things</p> <p>John: If you have a good volunteer coordinator, it's critical I think, to people who have expressed an interest</p> <p>Dave: one of the reasons our garden has been so successful was that we were able to have a paid coordinator that makes sure that it all happens</p> <p>Laura: I think every single community garden in Calgary needs a coordinator though</p> <p>Sharon: But hopefully if we hire somebody, like a student, or whatnot, and they can have their own ideas or knowledge of how to take it further</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • positive leadership • garden leader group willing to communicate • We have had a problem with experienced gardeners who try to be too controlling but this was resolved by not having a lead gardener and encouraging a variety of approaches.
	Well-Connected Individuals	<p>Sharon: And people like John who have the connections and the know-how and then the city [are key players].</p>

		<p>Brian: because Danny is quite connected with the garden community, he had a friend who's the president of [another community garden]</p> <p>Sharon: And at the time, my predecessor, her husband's company got involved, so they had volunteers come out and do some gardening, and do what not</p> <p>Sharon: And so when she left [the volunteers left too]</p>
	Butterflies	<p>Dave: One of the things they started this year, there's a garden a sort of small garlic community in Calgary and um Laura's been growing out different varieties of garlic here and they ended up between our garden and the McClure community garden and one other, there's something like fifty varieties of garlic. So trying to keep those going. So there's this, through the Hort Society, a garlic initiative that started this fall which was giving different varieties to different community gardens to grow out.</p> <p>Khaled: And the way she does that is she goes to different community gardens and plants her garlic in those places.</p> <p>Laura: And then we started this little garlic venture [with the Calgary Horticultural Society], where people, representatives from community gardens, can come get some garlic seed of one variety, take it back, grow it out, and then the next year, come back and trade it with other community gardens</p> <p>Lori: Initially we had a representative come out. It was actually the Calgary Horticultural Center. There was a couple of representatives that came out and really helped shape the garden in the beginning.</p> <p>Khaled: So she's a volunteer that's involved in more than one garden</p> <p>Laura: And that's where Jillian, actually, from the Community Garden Resource network, she would come like a little fairy and, like, go and visit people and tell people about other projects that were happening, and I think having someone like that, who's job it is to go between the gardens and let other people know what neat things are going on, um, I think would be helpful</p> <p>John: [The CGRN] have a good database of who's doing what</p> <p>Questionnaire</p> <ul style="list-style-type: none"> We do have at least one active member who lives in another community and is using experience from our garden to bring to another community.
	Good Connections with Existing Organizations	<p>Laura: And there's the whole [local] volunteer community</p> <p>John: We've tapped a little bit into [a local] database as well</p> <p>Lori: And with the library and the community, there's a lot of schools around and health centers, and there's a seniors home across the street that's had a bed as well. So that's been really good</p> <p>John: At the harvest party we've always had good media turnout because we do it in conjunction with the drop in center and the food bank</p> <p>Lori: the library uses a lot of their methods of advertising and promoting it</p> <p>Brian: Well, a lot of [the people who came with knowledge] are people that frequent the library</p>

		<p>John: That's another thing that Jillian does a really good job on. Is through the CGRN, is sharing those skills</p> <p>Brian: And the library can, in nice weather, tie some of their programs in and be out there, around the garden</p> <p>Brian: We kind of promoted some of the groups in the area too. To keep the involvement</p> <p>John: So if you are a community garden by a community association, don't be afraid to go around and knock on some doors</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • We mostly gain knowledge from our relationship with the Community Garden Resource Network.
	Local Network of Community Gardens	<p>Sharon: And the idea of the project last year was to actually work towards finding the connection of gardens in downtown</p> <p>John: And try to connect within your community garden environment so you can share skills. Create a network where skill sharing can happen.</p>
	Regular Meetings	<p>Khaled: Yeah, on the work nights. Weekends. Everybody's off work and they don't have nowhere to go so they go to the garden Saturday morning and hang out there. Those are the times.</p> <p>Laura: And most volunteers'll say so-and-so came Thursday mornings, it didn't matter, like, time-wise, like between 10 and 12, it was mostly am or pm. And they would just come back every week so they just worked it into their schedule like that.</p> <p>Sharon: and I had thought, what if we set up volunteer days. You come and tend every Monday, Tuesday, Wednesday, whatever days</p> <p>John: And then during the summer we try to get together once a week to come down and to do something, usually during noon-hour</p> <p>Brian: generally people were there in the evenings and there are certain people you can count on to just be there about every evening</p> <p>Questionnaires</p> <ul style="list-style-type: none"> • People not attending meetings or are unwilling to attend social events as they are just looking for a garden plot nothing more
	Larger Events	<p>John: We have a planting party. We have two parties at the beginning of the year. One is a clean up party. And a planting party. Sometimes those are combined. And then we have a harvest party at the end of the year</p> <p>Khaled: We'll have, for example, a harvest dinner. So you get stuff from the garden and cook it together. And talk and eat.</p> <p>Brian: Over the summer we were trying to have a monthly meeting in the room here</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • planned activities where members came gage with each other • Scheduled seed exchanges and planting parties bring

		<p>everyone together in the garden at the same time</p> <ul style="list-style-type: none"> • Social Events and regular monthly meetings allow us to share skills and knowledge • Work bees that enable us to get together and share knowledge while working to improve our community garden • Gatherings, tours • Social events - spring clean up, planting day, harvest supper, etc.. • Fairs, City-wide information sessions • People not attending meetings or are unwilling to attend social events as they are just looking for a garden plot nothing more • There could be some learning activities over winter.
Communication	Same Time at the Garden	<p>Questionnaire</p> <ul style="list-style-type: none"> • When the gardeners are there at the same time, there is opportunity for sharing experiences and knowledge • and by meeting at the garden to share our knowledge with others as to what worked and what didn't work well • It would be great to be there when others are there but we each have our schedule and no one goes when I go. • Non-meshing schedules
	Communication in General	<p>John: And so the problems from that perspective are easily mitigated by communication. Communicate, communicate, communicate</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • Interaction between community gardens only occurs at the board. • We need to have a way to communicate with each other. We haven't made this a priority I guess.... • Communication being open • Isolation from others • sporadic contact
	Marketing	<p>John: In our case we used a lot of social media Laura: I think as far as city-wide goes, [the CGRN] have really increased the profile of community gardens in general. And got people interested in starting more Sharon: So starting in the backyard, through community centers newsletters would be the first stop. John: So we go downtown and set up on a warm day, at noon, we set up tables on Stephen Avenue, and talk about the community garden Lori: There were posters around the community John: At the harvest party we've always had good media turnout because we do it in conjunction with the drop in center and the food bank Lori: the library uses a lot of their methods of advertising and promoting it</p>
	Word of Mouth	<p>Melissa: the community sees my yard and beautifies their own yard and then word of mouth gets out about what we're doing Lori: But it was pretty much word of mouth. There were</p>

		posters around the community
	Web-Based Communication	<p>Khaled: To set up a website – our website’s open and we have pictures.</p> <p>John: In our case we used a lot of social media</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • Facebook or webpages • E-mail/internet • In the development phase - email, facebook, blog. • Blogs - as long as links reach all gardeners (not just the board members) • contact information that is easily found ie. websites, email addresses
Barriers to Networking	Can’t Find Information	<p>Sharon: a lot of times, people are just intimidated by not understanding how gardening works</p> <p>Laura: we’d often send people [to the CGRN] who had questions about availability and, you know, how it worked</p> <p>John: [The CGRN] have a good database of who’s doing what</p> <p>Khaled: So, unfortunately, I think when people come they think it’s a great idea, they’re challenged with how they’re implemented, they’re a little bit overwhelmed, and then they just resort to the simple model</p> <p>Laura: maybe there was a lack of guidance, if there was... you know, if the communication or the demonstration wasn’t adequate enough for someone to understand what they needed to do</p> <p>Lori: And I think for us, that was a struggle. To know where to go</p> <p>Sharon: But it was like, “Where do you go to join or learn how to grow better tomatoes?”</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • We don't know where the community gardens are or how to contact them. So there is not much of this happening. Is it a secret where the gardens are? • Don't know where to go to share information • We need to have a list of community gardens, addresses and contact numbers. • Above is the first time I have seen a comprehensive list of gardens in this city. I am amazed at the number. This is a shame that community gardens have no access to such a list because this pretty much makes any effective communication impossible. Need a website that has an interactive map with click on each garden and all the info you need.
	Don’t See the Value of It	<p>Khaled: I think [the CGRN] just a formality, I haven’t seen anything transferred from one garden to the next. I think it’s just all theoretical good intention, but practical, nothing really</p> <p>Laura: I mean, it’s important to have communication between the other gardens, but it’s also just icing on the cake, really.</p> <p>Laura: because we weren’t a plotted thing, we were quite a different community garden, we didn’t need [the CGRN’s]</p>

		<p>assistance in that way so much</p> <p>Dave: I'm not sure if we're formally a member [of the CGRN]. Again, because we're a little bit different</p> <p>Sharon: And when we talked about moving it into more food education, we sort of had to say, well, food education doesn't come to bringing vitality to downtown Calgary because we've got all these restaurants who can do that, and we can support them in their quest to do that</p> <p>Questionnaire</p> <ul style="list-style-type: none"> We haven't found a great need for communicating with other gardens. To date mostly we have been passing on info. from our garden.
	New Garden	<p>Melissa: well because were a new garden we don't have a lot of networks</p> <p>Lori: I do believe [getting in touch with other gardens or organizations is] an area to develop and kind of grow with the first year, because we were so new and it was just about the build</p> <p>Brian: when we were planning what we were going to plant, we hadn't really built all the relationships that we've built over the summer with the people</p> <p>Questionnaire</p> <ul style="list-style-type: none"> lack of knowledge and will take time to establish connections and relationships.
	Individualist Approach	<p>Questionnaire 4</p> <ul style="list-style-type: none"> People not attending meetings or are unwilling to attend social events as they are just looking for a garden plot nothing more people desiring to garden their 'own' plot on their own time Gardeners are very busy in the summer. They water/tend the garden and leave, sometimes without speaking, even oblivious to others in the garden.
	Not making an effort	<p>Questionnaire 2</p> <ul style="list-style-type: none"> not reaching out to other gardens Members of other gardens not connecting or communicating upon request.

Table 9. Detailed Coding Table for the Major Theme of Personal Satisfaction

Analytical Codes	Descriptive Codes
Rewarding/ Passionate	<p>Melissa: Somebodies gotta love something to make it work</p> <p>Lori: I felt a great reward and satisfaction in to be able to say, yeah I am part of a community garden, and yeah, I built a garden last year</p> <p>Laura: I think they look like they were enjoying it and I think they learned</p> <p>Sharon: And again, that falls back on me. Because that's not where my passion is</p> <p>Brian: But I think the enthusiasm was quite high, so people were here quite often</p>
Ownership	<p>Laura: So that was a really important thing: to just step back and let people have their own thing. Even if they're making what I would think was a mistake, I mean, not a critical mistake, but, you know, in that way, and I think – you know, we had some people working in the garden over the years and they have various barriers to employment or mental health issues, and that was not the point, about the end result, or</p>

	<p>even the quality of the work</p> <p>Lori: I think, [in regards to transmission of knowledge and skills], it's about respecting what everyone has – the knowledge that people bring</p> <p>Khaled: how do you get more people involved? And have more ownership, and take more ownership? You have to implement their ideas, respect their ideas, let them do what they want to and let them act in a way that leads them to believe they have ownership.</p> <p>Khaled: So, um, a positive experience, I'd say, would just be collaboration, helping, the sharing, uh, sharing new ideas, or having an idea, putting an idea forward and having it adopted and accepted, and seeing it all the way through. And everybody appreciating that. That's, uh, seeing the impact of that idea.</p> <p>John: some organizations got their little internal politics about where ideas come from</p> <p>Questionnaires</p> <ul style="list-style-type: none"> • It is important that all people are treated equal and their knowledge is valued on an equal, impartial basis with respect. • asking for a lot of input as to the questions/issues/interest the gardeners have. • Another barrier is having people with altruistic ideas trying to impose their ideas on gardeners. • We have had a problem with experienced gardeners who try to be too controlling but this was resolved by not having a lead gardener and encouraging a variety of approaches.
Food	<p>John: And share some of that food.</p> <p>Sharon: And so then, I thought, is no one looking after the garden because it doesn't grow any food</p> <p>Brian: But we were also really happy because we did pull a lot of produce out of it.</p> <p>Laura: So often people will go home with a little bundle of, you know, fresh something that we have tons of, or too much of.</p> <p>Khaled: We'll have, for example, a harvest dinner. So you get stuff from the garden and cook it together. And talk and eat</p> <p>Questionnaires</p> <ul style="list-style-type: none"> • desire by members to grow and eat home grown food
Interest/ Willingness	<p>Khaled: it becomes a really good learning experience because you are learning from somebody who is interested, good at it, and you're helping them</p> <p>Laura: I do recall there being a few participants that, there was somewhat a lack of interest in the project</p> <p>John: And a lot of it was will.</p> <p>Melissa: Its all connections and networking because I'm interested I use my own time</p> <p>Questionnaires</p> <ul style="list-style-type: none"> • Just an open and willing environment to learn • Finding the ambition to contribute is sometimes problematic • Generally, the will of the garden committee to ensure they're pro-actively pursuing it. After that, the will of members to want to be more involved with the project beyond the tending of their garden plots
Busy	<p>Lori: Our lives are busy. That's a lot of work</p> <p>John: we have busy lives</p> <p>Laura: going to other gardens was important, but it certainly wasn't on my agenda because I had enough on my plate</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • We are more than busy enough with our own garden. • people are generally busy with work, family and volunteer commitments
Time	<p>Lori: We put two weekends of good 30-hour weekends in. I was long days and long</p>

	<p>nights.</p> <p>Laura: she took hundreds of hours to develop skills. So it was this really slow process, but really successful.</p> <p>Dave: people, slowly over the season develop the comfort level within the garden</p> <p>Brian: [We didn't grow more complex things] because of our build time, we started late</p> <p>T: I would say probably lack of time [is the biggest barrier to communicating skills and knowledge]</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • time investment from members • will take time to establish connections and relationships • People tend to place any spare time or attention they may have after working at their jobs into their families, their romantic partners, their friends, their personal interests, and their neighbourhood. • Time. When we set educational sessions only 1/3 have time to come.
Momentum	<p>Dave: but by and large it's been the sort of core, once you get hooked, they tend to stick around</p> <p>John: So the quicker, the shorter the distance that timeline between people expressing an interest and people getting their fingers in the dirt, that's critical. That's where you capture people.</p> <p>Sharon: They're not going to be an overnight success. But you want things can take on their own momentum, and they can care for it.</p> <p>Lori: The commitment and keeping people involved and stuff could be a hindrance</p> <p>John: Because when people come to the table with some energy, it's imperative, and it's incumbent on us, as organizers, to take advantage of that initial energy and excitement. You gotta capture that and go with it. It's sort of the train leaving the station attitude. The train getting up to speed. It takes so long for the train to get up to speed sometimes, that you've got to keep it up there.</p>
Instant Gratification	<p>Sharon: I'm used to instant gratification</p> <p>T: some people want that instant gratification</p> <p>Melissa: Gardens take time and patience and alot of people think instant beauty</p> <p>Laura: it's such a slow motion process, right?</p>

Table 10. Detailed Coding Table for the Major Theme of Practical Learning Approaches

Analytical Codes	Descriptive Codes
Occurs organically	<p>Sharon: it has to be organic and raw, and come together itself.</p> <p>John: A good meeting is one that who cares what time it starts at. But people meet and exchange ideas, and maybe you're out of your comfort zone.</p> <p>Laura: but I tried to keep it open enough, and I would have some people who would just show up and that would be great.</p> <p>Brian: I don't think we formally said we were weeding Wednesday evening or anything like that.</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • Friendships in my case. I am not part of anything formalized to share knowledge and skills • Our garden has tried to institute twice weekly "drop-in" gardening times to bring more people together but this has been unsuccessful. • I have found the best way is to see people at the garden and informally chat about information.
Reflexive Learning	<p>Melissa: I am a life learner which allows me to offer, discover new things as well</p> <p>John: For organizations to get better, they must be committed to be learning</p>

	<p>organizations. They must be wanting to get better. And so your community garden organization has to want to get better.</p> <p>Laura: and I'd talk with the organizers, and say how was this, like really trying to get feedback to just see if it's useful for the women, was important for me, and again it was a bit of a process, still is I think with the project, finding again the right fit.</p>
Organisation/ Structure	<p>Laura: I think for some people volunteering there, they were like, 'Oh, it's gardening, da da da, I can show up whenever I want,' so I think some volunteers that we had initially, or that had been initially interested, um, we may have scared them away in some ways. Like, that, whoever wasn't interested in that kind of structure, obviously, we didn't retain them as a volunteer.</p> <p>Khaled: Some people in our group have tried to mandate that you have to volunteer in Rainbow if you want to rent over there. Forcing, I don't think is the best way to go about getting volunteers.</p> <p>Khaled: Although the formal, um, method of recruiting volunteers does happen, but it's not a very successful. You know, you try to recruit 40, you may have 2 or 3 show up.</p> <p>Dave: And we have a process here at the [garden], where you go through a bit of a volunteer interview process. Um, and meet the volunteer coordinator who shows you, who introduces you to the gardener. And that kind of thing, and then depending, it's really depending on needs and expectations, that that happens.</p> <p>Laura: Also in terms of coordinating the garden itself, being prepared was important</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • Planning ahead with schedules for different events, a good communication system • I find that by having our big garden map, it helps us to see/plan where everything is. Also having every row marked off and keeping record of what worked and didn't worked, what gardeners want and don't want really work well to assist us in the next planting season. • Similar to above, but I imagine early communication and scheduling (working together and planning during off months) would enable a better offering between different gardens and allow for a reduction in repetition of certain topics, which would allow for increased numbers of over all topics between gardens. • not having some type of post event handout/resource so that those who could not make an even can still receive the information and summary of the event.
Hands on/Face-to-face	<p>Melissa: I have a k and e program which means knowledge and employability. Lots of practical and hands on.</p> <p>Khaled: And it's hands-on training</p> <p>Questionnaires</p> <ul style="list-style-type: none"> • Face to face contact • Lack of face-to-face time.
Observation	<p>Laura: she had these really amazing observation skills from the first day, and this helped her develop her other skills tremendously.</p> <p>Khaled: you can just learn on your own in the garden.</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • Seeing the people gardening
Helping	<p>Khaled: I learned so much about asparagus from helping her with it</p> <p>Laura: She would talk with people, you know, if you were working side by side, or across the bed from someone [to share what she had learnt].</p> <p>Lori: They came out and helped with the build days so that was a great experience as well.</p> <p>Dave: so they came in and rotated through a couple different tasks that was geared</p>

	<p>towards, a) getting the garden up and running and b) also providing that information piece. But we don't do formal workshops.</p> <p>Brian: Because they're community-involved-type people they came and assisted us with the build and so we have communication with them.</p>
Learn from other's past experiences	<p>Khaled: I know that volunteers in Calgary, when they organize, you can get 10 volunteers together you can go to the city and they'll give you land to do a garden. Part of that experience is they have to come to our garden, see how we do it, learn it from that, and go do theirs</p> <p>Melissa: Students and I worked on a community school garden where we researched dug the plants in and they "said" they had a watering plan in place for the summer and then it fell through. I was able to learn from that and apply it to this community garden</p> <p>Lori: There was a couple of representatives that came out and really helped shape the garden in the beginning. You know, answer some questions, because they had gone through this process before.</p> <p>Brian: The Calgary Horticultural Society, or whatever. They had been sending, to our early meetings, observers. And he's connected with them. So they asked if he would come, just kind of to lend a little expertise</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • experienced gardeners • people willing teach • Some members feel they don't have anything to share, some keep their gardening secrets to themselves
Workshops	<p>John: And so some instructional workshops and stuff like that.</p> <p>Lori: there was a member of our committee, Danny and Elizabeth are very skilled in gardening, so there was an opportunity to demonstrate or do a little education-type night on different ways, methods, to plant a garden</p> <p>Brian: we're looking to do more idea sharing, and maybe even planning a couple of events together</p> <p>John: [The CGRN] do have workshops.</p> <p>Laura: I think there's a lot of room there for interpretive work</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • Classes • Facilitated learning sessions • This year we are introducing guest speakers to help enhance out knowledge
Informational Material	<p>Questionnaire</p> <ul style="list-style-type: none"> • information sheets ie growing garlic info • handouts • Electronic and print media • Educational movies ie Food Inc (keeping in mind the cost can be a deterrent) • info left for gardeners is not often noticed or read
Sharing Materials	<p>T: They lent us tools and stuff, so we do have that kind of interaction, anyways.</p> <p>W: I could only see [transferring from one garden to the next] happening if one garden had something that another garden needed.</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • sharing plants & advice on growing them
Participation	<p>consistent participation</p> <p>lack of participation</p>
Subjectivity	<p>E: sometimes the subjective nature of the task made things difficult</p> <p>T: so a lot of the core skills transmission happens would be the basics of what a garden... the structure of a garden, and not to walk on the beds, sort of watering the plants. Um, and that kind of thing. More of a, which is, I guess, more of an ethos than an actual skill. But it's very important to the success of the garden.</p>

Withholding Information	<p>Questionnaire</p> <ul style="list-style-type: none"> • withholding useful info. • unwillingness of other gardeners from other community gardens 'not' to share (don't come across this too often) • People being closed off because you are not a member of their garden. • Some members feel they don't have anything to share, some keep their gardening secrets to themselves
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Table 11. Detailed Coding Table for the Major Theme of Resources

Analytical Codes	Descriptive Codes
Monetary and in-kind	<p>Sharon: So that's the only place where people are the key players are just our organization, because we fund it.</p> <p>Laura: fortunately, at the [garden], we had access to sending it off to a lab. So we did that, um. So that kind of in depth knowledge, I mean there's professionals out there, so certainly.</p> <p>Lori: [A company] was a huge sponsor so that really helped</p> <p>Dave: I think it's not so much research as resources</p> <p>Melissa: budget is the biggest issues. Finding ways to do things with limited funds</p> <p>Brian: we probably got our material for around half price.</p> <p>John: We have all kinds of sponsorship, all these businesses around here all get involved.</p> <p>John: [The CGRN] are sponsored by the Calgary Foundation which gives them a lot of money to function, so they can do these types of things. [...]</p> <p>Questionnaire</p> <ul style="list-style-type: none"> • The fact that most community gardens are just pr stunts for corporations and not actually functioning gardens. • However, more than a \$5 charge is more than I can afford and becomes a deterrent [for workshops]
Human	<p>Laura: we've had a steady guy who comes back year after year, he's been there the whole time. Which is pretty cool. So he's paid, part-time work, he used to be there full-time</p> <p>Dave: I hire as part of the site maintenance we have a summer student</p> <p>Lori: they're not getting paid for it</p>