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Growing Citizens: Students' Social Emotional Learning via School Gardens

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Abstract

The importance of social and emotional learning in the life of a student is now being recognized as a factor for academic and life success. How a garden can help in the promotion of skills related to social and emotional learning will provide further justification for the implementation of gardens in schools. The purpose of this exploratory, interpretivist qualitative study, with data collected from a purposive sample of educators involved in classroom-based education within schools, was to explore the social and emotional practices of primary grade students (kindergarten through grade five). The sample size consisted of 14 educators who were located across six schools located throughout Southwestern Ontario. Participants included vice principals, special education resource room teachers (SERR), classroom teachers, and early childhood educators (ECE). All participants worked with grades kindergarten through five, respectively, in urban elementary schools. Qualitative data consisted of participant interviews that were recorded and later transcribed, educators' observations and field notes, and my own personal field notes.

Through conclusions drawn from this case study it was, demonstrated that gardening experiences benefitted most students, but in particular, those students who have diverse needs. Further results demonstrated that the social and emotional skills related to collaboration with others and interpersonal conflict resolution between students increased when students were involved in gardens and gardening experiences. Connected to the results of this study are recommendations for an examination of policies related to school gardens for Boards of Education and recommendations to educators to think of

school gardens as being able to provide an opportunity for a variety of learning experiences.

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Chapter 1

1 Introduction

Social emotional learning (SEL) is a concept gaining increased recognition for its potential to affect school students' academic success (Cristóvão, Candeias, & Verdasc, 2017; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011**;** Zins, Bloodworth, Weissberg, & Walberg, 2004b). For educators and educational experts, agreeing upon a pre-eminent or single definition of SEL is difficult, due to how the term is used in a wide variety of fields. For example, there is dispute among researchers as to whether the definitions and aspects of SEL lie mainly in the realms of psychology or education (Bar-On, Tranel, Denburg, & Bechara, 2003; Elias et al., 1997; Goleman, 1998). Nevertheless, there is a degree of consensus on which key capacities SEL are comprised. Thematically, these include: self-awareness and social awareness, the ability to manage oneself, the ability to get along with others, and the ability to make responsible decisions.

These SEL capacities—and one's degree of adeptness in practicing them—are not only important life skills, but they are also linked to successful and improved educational outcomes in school. Zins et al. (2004) stated that "schools are social places, and learning is a social process" (p. 3), because social emotional learning and academic successes are built both upon "an organized system of interactions and transactions among people (children, teachers, parents, and other caregivers), settings (home, school, and child care), and institutions (communities, neighborhoods, and governments)" (Mashburn & Pianta, 2006, p. 151). Keeping the social aspects of learning in mind, it is clear that aspects of SEL practices are, by default and whether consciously acknowledged or not, inherently part of the learning process. The degree to which SEL practices are fostered, or fail to be

fostered, are thus connected in positive or negative ways for school-based learning experiences and educational outcomes.

In addition to the potential impact SEL practices have on student learning, its enhancement also has the potential to be a positive effect on a student, both as a person living on our planet and as a citizen living in society in some way. The research on what SEL can look like when enacted within a classroom with students is provided in many commercially-available, evidence-based programs, such as *Roots of Empathy*, *Positive Action*, and *Second Step*. Commercial programs demonstrate promising results and offer a pre-packaged curriculum and approach to SEL. These programs comprise in-class activities and teacher guidance (Rimm-Kaufman, Fan, Chiu, & You, 2007; Schonert-Reichl & Lawlor, 2010).

In Ontario, there are curriculum requirements related to SEL practices for kindergarten through grade twelve titled, such as *Learning for All* (2013b). In the Ministry of Education in Ontario's (OME) core language curriculum, under the reading strand, the specific expectation 1.8 for grades one to three, students are required to express their personal thoughts and feelings, identify traits they admire in fictional characters, and demonstrate that the speaker has their own point of view (Ontario Ministry of Ontario, 2006). To supplement these provincial curricular documents, many schools and school boards purchase evidence-informed programs to help with the implementation of SEL curricula tasks. On the one hand, some of these commercial programs, such as *Roots of Empathy* and *MindUP,* provide promising results in improving students' SEL skills (Rimm-Kaufman et al., 2007; Santos, Chartier, Whalen, Chateau, & Boyd, 2011; Schonert-Reichl & Lawlor, 2010) but, on the other hand, some

of these programs also require special training, insofar as their certified and formally sanctioned use in schools is permitted. These commercial programs may prove to be too costly, particularly for larger or under-funded schools. The goals of the programs, for some parts of school population, are thought of goals rather than something that can be currently enacted in their school. Therefore, if schools cannot afford to provide professional learning for schoolwide use of SEL programs, or if the interest is simply not there (as was suggested by some educators during my data collection), school and school boards will likely need to seek alternative methods of incorporating SEL-type practices into their curricula.

Integrating costly and intensive SEL-based professional learning programs may indeed reduce or prevent negative or unwanted social emotional behaviours in students (Payton et al., 2008). But while these programs may be well-intentioned, many of these programs, which are currently adopted, are not evidence-based and are designed to be *one-size-fits-all* solutions to programming. Effective and beneficial curriculum interventions often remain costly, difficult to implement, and can be rejected by schools in favour of simpler *just-in-time* programming. Without a cost-effective strategy that can also be tailored to respond to varied student needs, SEL curriculum goals and student learning outcomes will continue to go widely unmet in some schools (Bridgeland, Bruce, & Hariharan, 2013).

Teachers need to be more open in their classroom environments to promote and honour the values, skills, and attitudes related to developing and enacting social and emotional learning. This perspective was suggested by Gordon, Ji, Mulhall, Shaw, and Weissberg (2011), as another way SEL can be promoted with students in the classroom.

Another strategy to promote SEL without the use of a pre-packaged curriculum system, is through the creation of class-related environments where SEL can take place and this presents an ideal opportunity to incorporate school gardens (National Foundation for Educational Research in England; Wales & Dillon, 2005).

The implementation of school gardens, either class- or school-based, may not only address SEL issues, but they also have the potential to present opportunities for both inclusive and experiential learning and provide opportunities for teachers to explore and reflect upon the ways school gardens can shape and change their own teaching practices.

1.1 Purpose of the Study

The purpose of this exploratory, qualitative case study was to determine how well, and to what extent, school gardens support and promote student social emotional learning. This study explored the capacities of SEL: students' self-awareness and social awareness, the ability to manage oneself, the ability to get along with others, and the ability for responsible decision-making. More specifically, this study explored how these SEL qualities were nurtured and promoted in students within their respective school gardens in kindergarten through grade five classrooms.

The research questions posed in this investigation were:

1. In what ways do school gardens strengthen and promote social emotional practices among students in kindergarten through grade five in southwestern Ontario urban schools?

    a. Why do school gardens promote social and emotional learning practices for students?

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b. How can school gardens promote social and emotional learning practices for students?

1.2 Research Design

For this exploratory, qualitative case study, my participants included 14 educators who were located across six schools located throughout Southwestern Ontario. Participants included vice principals, special education resource room teachers (SERR), classroom teachers, and early childhood educators (ECE). All participants worked with grades kindergarten through five, respectively, in urban elementary schools. These participants yielded a wide variety of experiences and observational perspectives for this research study.

Data collection included participant semi-structured interviews (recorded and transcribed), classroom teachers' observations and field notes, and my own field notes, and a reflective journal. Educators who volunteered to be part of the research study noted their observations of the students during the installation of the gardens and recorded students engaging with one another. The 14 participants were asked to observe students' social and emotional responses to gardens and gardening experiences over a period of four to six weeks. Educators paid particular attention to their students' social relationships. To ensure an ability to consistently measure responses elicited via observation and subsequent interviews, educators were asked to focus on the specific qualities of SEL that were provided to them in advance (see Definition of Key Terms). These SEL qualities were recorded in the participants' observations, noting how individual SEL capacities were being demonstrated by students while involved in gardening experiences.

All data sources (i.e., participant field notes and observations; transcribed semi-structured interviews; researcher field notes) were inductively coded and analyzed for themes and commonalities.

1.3 Theoretical Framework

This study is underpinned by the theory of social constructivism (discussed in greater detail in Chapter Two). Social constructivism conceptualizes learning as a social and collaborative activity. It also refers to the notion that a student's knowledge-building occurs best when done in concert with someone more advanced in the topic under study than the student (Fleury & Garrison, 2014; Keaton & Bodie, 2011). Through the lens of social constructivism, the interpretive assumption is that meaning-making takes place within the context of students' relationship to others (Creswell, 2007).

1.4 Significance

This Ontario-based research is intended to demonstrate the many ways school gardens can foster and support positive SEL capacities in students. This, in turn, can provide further justification for the inclusion of school gardening spaces and experiences. In particular, my research contributes to school districts that serve students in need (e.g., socioeconomically) or who would most benefit from enhanced social and emotional learning. Schools that already have gardens—or educators who wish to include gardens and provide gardening experiences for their students—should feel confident in drawing on evidence from this study to shape their promotion of SEL. As administrators may, for a variety of reasons, be hesitant to approve of school gardens, additional evidence-based support is often required by gardening advocates for the inclusion of gardening spaces.

Initially, this study set out to make a modest, but practical and useful, contribution to the research literature. This contribution was in regards to the capacity of school gardens to enhance student achievement (via improved learning experiences and educational outcomes). In particular, the contribution fits with how school gardens can serve various provincially-mandated education goals in Ontario. Ontario's promotion of well-being for kindergarten to grade 12 students is based on the engagement paper, *Well-Being in Our Schools, Strength in Our Society* (2016) and subsequent provincial discussions as part of the vision of excellence by the Ministry of Education. As a result of the demonstrated SEL enhancement and curricula-related benefits, I anticipate this research, once available, will also, more generally, provide ideas and practical suggestions for additional school communities across Ontario to incorporate gardens into their classrooms and outdoor learning environments.

Once this study is published and made available, principals may wish to consult this research as a resource as it demonstrates the positive SEL opportunities occurring in their schools. Educators may wish to access this research to become more aware of, and knowledgeable about, the SEL learning that takes place in garden spaces. This awareness would promote educators to be cognizant of the need to continually assess and foster best SEL practices. The study can also perhaps provide an impetus for discussion at the leadership level about school gardens and gardening experiences.

As someone who works for a local community college, I am well positioned in the community of schools and early learning environments to create change and have conversations about school gardens and matters related to gardening. Having assisted some schools and early learning programs secure funding for their gardens, I am able to

assist not only in implementation of school gardens but in locating funding opportunities. There are local and provincial organizations that can assist schools in some cases with physical implementation and those are services that I have worked with previously that can assist schools seeking to promote school gardens.

School Administrators are heavily burdened by downloading of responsibilities and have a myriad of responsibilities to keep schools running smoothly. Having an outside person such as myself to aid related to research regarding school garden learning and policy direction would assist them schools in moving forward. Furthermore, I am not someone funded by the Board of Education or Ministry of Education, so my interest and insight come from a place of support and belief in the importance of gardening in the lives of students in urban schools. School leaders could utilize the previous research and the research that has come out of this study, to move forward on school gardens with increased confidence in realizing their use.

1.5 Limitations

Yin's (2009) criticism of exploratory case study when conducting research in schools is that events in one school might not reflect events in another. The heterogeneous nature of schools suggests that Yin's criticism is valid for this study, because demographics and schools widely vary. Further, students, principals, and teachers regularly rotate and move between classrooms, grades, and even schools. In an attempt to mitigate this effect on the study, multiple schools were involved. However, as a result of using a variety of schools, a diverse demographic and wide variety of students and teachers participated, which assisted in illustrating a more well-rounded and fully-formed portrait of the cases that emerged.

The data gathered through semi-structured interviews provided evidence that was specifically based on the experiences and perceptions of the educators, which may have presented some inconsistencies as to their own perceptions of reality. Nonetheless, as previously mentioned, participants were asked to record field notes of their experiences and these ultimately facilitated a richer analysis.

In the interests of full disclosure, the reader should be aware I am known, within my own professional learning community, as an advocate of school gardens and outdoor experiences. As a result, reasonable care was taken to bracket my personal bias wherever and whenever possible throughout the research process. It is acknowledged that I view my research and data through my own lens but reflection on my biases, was an ongoing process. Through the use of triangulation of data from multiple sources and the systematic analysis of data, potential bias was reduced or, as indicated above, at least bracketed. One way to ensure the trustworthiness of my interpretations was through member-checks with participants (from their notes and interviews transcripts) to ensure I accurately understood and represented participant perceptions.

1.6 Definitions of Key Terms

The following terms were operationalized for this study:

Administration and Administrators in schools are used interchangeably to refer to principals and vice-principals. Principals and vice-principals within individual schools are, to a certain degree, autonomous. They are representations of bureaucracy, hierarchy, or management within a school in their Board of Education, which is part of the Ministry of Education in Ontario. Administrators, nevertheless, play an important, albeit sometimes indirect, role in the lives of students within their school. Depending on school

size, vice-principals are typically responsible for management matters, including half-day, in-classroom coverage. Principals and vice-principals also have direct daily contact with the students within their schools.

Citizenship Skills is a term intended to encompass student-held qualities and characteristics. For example, students having a sense of responsibility and justice for oneself and others as demonstrated by persons who are contributing members of society. These and other citizenship skills will be increasingly in demand as the 21ˢᵗ century unfolds (Torney-Purta & Lopez, 2006).

School-Based Educator is a term used in this study to mean both early childhood educators and teachers, which both work directly with students in classrooms.

School Gardens are defined as planned spaces, either indoors or outdoors, where potted plants, raised beds, or portable grow towers are located, grown, and cultivated.

Semi Structured Interviews are defined in this study as interviews with study participants using a predetermined set of open-ended questions that serve as prompts to answers. (see Appendix C). Responses were followed up during the interviews to explore the topic further that was discussed with the Participant.

Social Emotional Learning (SEL) is a broad term referring to, but not limited to, the skills, knowledge, values, and attitudes that are widely considered life skills (i.e., "the capacity to recognize and manage emotions, solve problems effectively, and establish positive relationships with others, skills and abilities that clearly are essential for all students" [Zins, Bloodworth, Weissberg, & Walberg, 2004a, p. 1]). SEL for this student

incorporated the five competencies as outlined in the model proposed by Collaborative

for Academic, Social, and Emotional Learning (Appendix D)

Urban Schools refers to schools with diverse student populations—a diversity based on

race, culture, language, and socioeconomic status. Milner, 2012 offers varying levels of

"urban schools" and the idea of urban characteristics is what fits for the schools used in

this study. The challenges that schools in the urban characteristic category have is "an

increase of English language learners to a community. These schools might be located in

rural or even suburban districts but the outside-of-school environments are not as large as

those in the urban intensive or urban emergent schools." (Milner, 2012, p. 351).

1.7 Summary

The purpose of this exploratory, qualitative case study was to determine in what

ways and why school gardens support and promote social and emotional learning in

students. The secondary purpose was to explore how school gardens promote social and

emotional learning for students. This chapter outlined the purpose of the study, the

guiding research questions, the methodology in the research design, my theoretical

framework, the significance, and some limitations.

Chapter Two outlines the literature regarding the meaning of social and emotional

learning. It also addresses the importance of this topic and the context of social and

emotional learning in the Ontario curriculum. Further, the role of school leadership in the

creation of school gardens, and an exploration of leadership approaches, are addressed.

Chapter Three outlines the research methodology, methods of data collection, and the

analysis used. Chapter Four details my findings, including the identification of emerging

themes from participant interviews and observations, followed by a discussion. Chapter

Five interprets the main findings arising from the research and offers a summary on the

interpretations. Chapter Six offers a conclusion and implications for practice with

recommendations and suggestions for future research.

Chapter 2

2 Literature Review

This literature review explores the value and definitions of social and emotional learning (SEL) for students in grade school. It also explores the potential benefits of gardening upon the social and emotional competencies of children identified by Bridgeland et al. (2013) in a report for the *Collaborative for Academic, Social, and Emotional Learning* (CASEL). The authors cited the following skills, abilities, and practices of social and emotional learning as "self-awareness, self-management, social awareness, relationships skills, and responsible decision-making" (p. 4).

Currently, there exists significant enthusiasm for outdoor learning in education in Ontario as expressed by the vast array of workshops and training sessions offered on the topic, particularly when it may provide opportunities to help support students' emotional wellness and social learning. It is a promising sign that outdoor learning may have significant value when it is implemented and supported by teachers, early childhood educators (ECEs), and administrators (American Academy of Pediatrics, 2012; Malone & Waite, 2016). School gardens are a facet of outdoor learning that has proven valuable in meeting the educational, social, and emotional capacities identified by CASEL (Breslau, Breslau, Miller, & Raykov, 2011). The vital role SEL plays in the academic, social, and civic lives of students continues to be at the forefront of current discussions around the matter of "quality education" (Breslau et al., 2011; Graziano, Reavis, Keane, & Calkins, 2007; McCormick, Cappella, O'Connor & McClowryy, 2015).

One theme represented in the literature is the role of the principal in the implementation, or not, of school gardens. If principals, who are school leaders, adopt

transformational leadership stances, they may have the ability to unite the school

community to work toward a common goal. However, when it comes to the opportunities

presented by school gardens, some principals simply pass along such projects to staffers

(Bass & Riggio, 2006), rather than embrace gardening as a learning tool. Rather than

passing school garden creation and learning to staff to handle as they see fit, Leithwood

& Jantzi (2008) suggest that an important aspect of leadership is working with the group

to envision the necessary change together and exploring together how to operationalize

the change.

Over the past thirty years transactional and transformational leadership have

emerged as two of the most frequently studied models of school leadership (Heck &

Hallinger, 1999). Originally from the business sector, what distinguishes these two

approaches are the beliefs around how to improve teaching and learning. Some of the

goals in the realm of instructional leadership are to change instructional practices and

systems to produce improvement (Aistrup, 2010; Egley & Jones, 2005; Sanzo, Sherman

& Clayton, 2011). A change in practice and a reevaluation of systems in place, is a factor

in creating the change necessary for successful implementation of school gardens for the

promotion of social and emotional learning.

Forty years ago, in a comment about business leadership, Burns posited that

"transformational leadership encompasses a change to benefit both the relationship and

the resources of those involved. The result is a change in the level of commitment and the

increased capacity for achieving the mutual purposes" (1978, p. 20). Leithwood, Begley,

and Cousins (1994) defined transformational leadership as implying, "major changes in

the form, nature, function and/or potential of some phenomenon; applied to leadership, it

specifies general ends to be pursued although it is largely mute with respect to means."

(p. 7). Leithwood (2006) believed that former models of transformational leadership,

"neglected to include necessary transactional components which were fundamental to the

stability of the organization," and he added "management dimensions: staffing,

instructional support, monitoring school activities, and community focus." (p. 15).

In considering school leadership and leaders, a facet of it is the environment in

which the school administrator finds themselves in. Although the list of influences and

reasons for creating change or not creating change is exhaustive one point to consider is

offered by Gurman (2012) "Praxis in the systemic dimension includes assessing,

critiquing, and working to transform the system, at the school and district levels, in the

interest of social justice and learning for all children" (p. 203).

"Leadership requires disturbing people – but at a rate they can absorb" (Manders,

2008, p. 15). The term "transform" implies change and it is perhaps one who takes the

stance of transforming at the leadership level who is able to disturb the thinking around

school gardens and the complexity of having one.

2.1 What is Social Emotional Learning?

A better understanding of social emotional learning begins with improved

awareness of what exactly SEL is, along with an increased knowledge of its components.

The history of the term emotional intelligence is a term first coined by Reuven Bar-On it

the 1980's and was later added to by Peter Solvey and John Mayer in 1990. It is Daniel

Goleman who is credited with bringing the term emotional intelligence into the lexicon of

the general community. In the ever-growing and evolving field of psychology and

education, when attempting to ascertain age and developmentally appropriate working

terminology, finding one agreed-upon definition for SEL can present a challenge. The definition of SEL may shift depending upon one's background and, consequently, a school-based educator may define SEL somewhat differently than a psychologist. The necessary interaction of cognition and emotion in all aspects of SEL may sometimes lead professionals inadvertently to privilege knowledge over feelings or vice versa, depending on their backgrounds.

Resiliency is one facet of social and emotional learning. Resiliency is often thought to be fostered by social and emotional learning particularly as it relates to overall social and emotional well-being (Poulou, 2007; Johnson, 2008; Ungar, Mehdi, & Richter, 2013). Unger (2008) defined resiliency as,

> both the capacity of individuals to navigate their way to the psychological,
>
> social, cultural, and physical resources that sustain their well-being, and their
>
> capacity individually and collectively to negotiate for these resources to be
>
> provided and experienced in culturally meaningful ways. (p. 225)

Before the study of resiliency, Bronfenbrenner (1992) offered the notion of development as being related to the environment and the experiences humans have that can shape their ability to cope with events (Berk, 2006). Bronfenbrenner's (1994) conceptual and theoretical framework suggested that, "human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in the immediate environment" (p. 38). Bronfenbrenner's work introduced systems thinking into the study of human development, which has prompted those who work with students to consider information beyond what is immediately in front of them. Swearer and

Espelage (2004) described each of the four levels in Bronfenbrenner's model. The microsystem includes all of the people with whom the individual has interactions. The mesosystem consists of the interactions and relationships between the components of the microsystem that help the individual. The exosystem pertains to the interactions between two settings that are not directly related to the individual's environment. The macrosystem includes the policies, organization, and culture that shape the environment of the individual. To consider Bronfenbrenner's micro, meso, exo, macro, and chrono systems of human development is to acknowledge the importance that events and people that potentially influence us in our lives. (Bronfenbrenner, 1992).

As Goleman (2000) noted, in 1990 Salovey and Mayer defined social and emotional learning as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Goleman, 2000, p. 190). Prior to this, SEL was discussed in 1994 by the Fetzer Group as a conceptual framework to address the mental health needs of children and adolescents, and the fragmentation of a school's response to those needs (Elias, Zins, Weissberg, Frey, Greenberg, Haynes, & Shriver, 1997). Miyamoto, Huerta, Kubacka, Ikesako, and Oliveira (2015), in a report for the Organization for Economic Cooperation and Development (OECD), offered a definition for SEL, which emphasized the "individual capacities that can be (a) manifested in consistent patterns of thoughts, feelings and behaviours, (b) developed through formal and informal learning experiences and (c) important drivers of socio-economic outcomes throughout the individual's life" (p. 13). In 2017, Goleman and Boyatzis asserted that there were 12 elements of emotional intelligence: self-awareness, which refers to emotional self-awareness; self-management,

which comprises emotional self-control, adaptability, achievement orientation, and a positive outlook; social awareness, which relates to empathy and organizational awareness; and relationship management, which includes influence, coaching and mentoring relationships, conflict management, teamwork, and inspirational leadership. Incorporating these definitions into practices or look-fors that are age and developmentally appropriate can facilitate a better understanding of these concepts for those persons involved in students' lives (Miyamoto et al., 2015). The language of SEL practices from CASEL, adopted by many school-based educators in Ontario and used for the purposes of this study, include the terms: "self-awareness, self-management, social awareness, relationships skills, and responsible decision-making" (Bridgeland et al., 2013, p. 4). Self-awareness includes the ability to accurately realize one's own emotions and one's own ability to control those emotions (Bridgeland et al., 2013; Devaney, O'Brien, Resnik, Keister, & Weissberg, 2006; Payton et al., 2000). Self-management incorporates the ability to regulate and take responsibility for one's own emotions and reactions (Bridgeland et al., 2013; Devaney et al., 2006; Payton et al., 2000). Social awareness is demonstrated via empathy and successful interaction with others.

Relationship skills include being conscious of the problems of society or a group, and responsible decision-making refers to one's ability to make judgments about one's own behaviour and consider how it will affect others (Bridgeland et al., 2013; Devaney et al., 2006; Payton et al., 2000). Social emotional learning encompasses the teaching of skills children need to grow into independent and successful citizens in society (Graczyk et. al., 2000). Social emotional learning is a learning approach, which seeks to teach students: (a) how to set positive goals, (b) how to behave in an ethical and responsible

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manner, (c) how to increase motivations, (d) how to reduce or prevent violent disruptions, (e) how to manage challenging situations in an effective and positive manner, and (f) how to establish positive relationships with peers and adults (Cohen, 1999; Desai, Karahalios, Persuad, & Reker, 2014; Zins, Bloodworth, Weissberg, & Walberg, 2004).

When broken down into individual competencies or when attempting to analyze each aspect of the broader category of social and emotional development, SEL is something like an umbrella term encompassing a variety of abilities and capabilities one might consider as a proxy for citizenship skills: In other words, civic capabilities that are important for each citizen to possess in order to fully function in a healthy democratic society. With one of its competencies including enhancing students' responsible decision-making skills, SEL instruction has the additional potential to assist in strategy acquisition for stress and stress-related behaviours and improved organizational skills (Greenberg et al., 2003; Payton et al., 2000). Social emotional learning can come into play in any environment and the outdoors is just one example of such an environment where learning experiences can take place (Fägerstam, 2012; Hoffman, 2009; Maller, 2009). Social emotional learning could be an intervention possibility for all students but particularly for those students who require their SEL needs be addressed both at home and at school (Kimbro & Schachter, 2011).

Twenty years ago, Goleman (1998) contended that emotional intelligence (EI) includes self-awareness, self-management, social awareness, and relationship management. At that time, he associated these abilities with work performance. Goleman argued that these abilities were necessary for high performance in the workplace, and they should be taught in order to maximize the success of the individual and the

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organization. Emotional intelligence has been formerly, and somewhat pejoratively, considered to be *soft skills*, and—while significant in and of itself—Goleman's work also set in motion serious renewed interest in these important abilities.

In 2013, Bellous stated these emotional intelligence abilities, previously labelled soft skills, were considered adaptive behaviours, as well as teachable behaviours, with resiliency being a key feature in the potential success of all students. He stated that "adaptive behaviour in general, which can be defined as the ability to cope with the demands of one's environment, includes self-help strategies, communication and social skills" (p. 18). It is widely agreed upon in the literature that these are teachable skills best served through a proactive approach to behaviour (Kaufman, Grimm, Curby, Nathason, & Brock, 2009; O'Conner, De Feyter, Carr, Luo, & Romm, 2017; Webster-Stratton & Reid, 2004). Teachers who are aware of, understand, and promote self-regulation of emotions have been linked to classroom climates that promote active instructional engagement (Waajid et al., 2013). These teachers encourage students to develop a sense of self-regulation and strong social skills. As a result, these students, rather than act on their emotions, learn to control their behaviour (Elliott & Gresham, 1987). While some students enjoy the added benefit of being taught these skills at home, many do not. Yet these skills are recognized as being crucial to the current and future success of all students.

Shanker (2012b) suggested there was a need for providing earlier proactive responses by educators as opposed to later reactive responses to students' social and emotional needs. Shanker (2012b) stated:

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> Without a compensating emphasis on the importance of the affective interactions that nurture a child's curiosity and interest, her security and self-esteem, desires and attitudes, empathy and moral integrity, her overall happiness, we run the risk of reducing emotion-regulation to behavior management. (p. 134)

Rather than merely waiting to react when an issue arises, by putting systems and a plan in place for students' social and emotional learning offers schools a chance to positively engage a student before a problem has a chance to manifest. Weissberg, Resnik, Payton, and O'Brien (2003) indicated that "social and emotional learning contributes not only to the obvious aspects of a student's life but also builds the foundation for accepting responsibility; managing emotions; appreciating diversity; preventing violence, substance abuse, and related problems; and succeeding academically" (p. 47). The interrelated cognitive and affective aspects of SEL, are those that promote success in school and life, that allow students from various backgrounds and cultures to also receive the benefits of academic success. (Jones & Bouffard, 2012). Putting proactive plans and systems in place therefore would likely be mutually beneficial for teachers and students.

2.2 Social and Emotional Learning in the Ontario School Curriculum

Until recently, because of a primary provincial focus on academic learning, there was no mention of social and emotional learning in Ontario curriculum documents. This omission of SEL in the curriculum is despite its clear importance in childhood as stated in the literature. In 2013, the Ministry of Education in Ontario and Michael Fullan co-authored a report, which put forth a strategy to operationalize a vision for Ontario students. This document, *Great to Excellent: Launching the Next Stage of Ontario's Education Agenda,* specifically identified well-being in both character education and

citizenship as action items for school boards and educators in Ontario. The document, which outlined the next stage of education at that time, stated the *six C's* that formed the agenda for next steps in education. The six C's identified were: citizenship, communication, critical thinking and problem solving, collaboration and teamwork, and creativity and imagination.

Each of the skills outlined in the above document are useful to individuals locally and globally, for example: "Critical thinking is an essential competence required by citizens to participate in a modern, democratic society; critical thinking enables citizens to make their own contribution to society in a critical and aware manner" (Ten Dam & Vollman, 2004, p. 375). The six C's would be advantageous for students to be prepared for the world, not just in academic subjects, but also to prepare students for the world outside of school (i.e., the working world through the institution of schools) (Wagner, 2008; Gonzalez-DeHass, 2016).

Mindess, Chen, and Brenner (2008), in their U.S. report for The National Scientific Council on the Developing Child, indicated that the emotional well-being and social competence of a student provides, "a strong foundation for brain development and emerging cognitive abilities" (p. 56). Establishing well-being and instilling social competence is not only a task for a student's family, but it should also be a responsibility of the school.

Clinton et al. (2013), in their research brief for the Ontario Public Service, *Think, Feel, Act*, stated the importance of relationships as part of social and emotional learning in the lives of students, which must be emphasized. Drawing on contemporary research and experts—not only in the field of early learning but also social and emotional

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learning—the vision for Ontario's Ministry of Education (2013) was laid out. The emphasis on relationships and skills related to social and emotional learning introduced a number of concepts into grade school education that had not been explicitly stated previously. With the document *Think, Feel, Act* (2013), the term *self-regulation* was introduced into the lexicon of education in Ontario. This inclusion of self-regulation was with the intention of furthering the understanding of social and emotional concepts. Clinton et al. explained, "we know now that all areas are interconnected and developing together – emotions, language, thinking – rendering it ineffective to focus on one area without the others" (p. 5).

In 2010 Ontario introduced a draft of its Full-Day Kindergarten (FDK) program. This new curriculum emphasized play-based learning. Embedded throughout the final version of the FDK document (2016) is a commentary on social and emotional learning. In particular, the commentary discussed self-regulation, social competence, and well-being. The mere outlining of these concepts signifies a significant and important shift in government thinking about social and emotional learning skills. Kindergarten educators are now asked to promote skills related to social and emotional learning into their daily routines, environments, and interactions with students (Ontario Ministry of Education, 2016). With the four frames of kindergarten being, *Belonging and Contributing*, *Self-Regulation and Well-Being*, *Problem Solving and Innovating*, and *Demonstrating Literacy and Math Behaviours* (OME, 2016), it is noteworthy that all but one of the frames can be directly tied to social and emotional learning; clearly the province now acknowledges the significance of these skills in the lives of Ontario students.

The shift to include social and emotional learning components in the FDK program did not only occur in the kindergarten program document. Social emotional learning components are also present in a variety of other documents produced by the Ontario Ministry of Education. For example, in the policy document, *Growing success: Assessment, Evaluation, and Reporting in Ontario* (2010), learning skills and work habits are required to be assessed in grades one through 12. In this document, one of the six learning skills and work habits is self-regulation, and it is described as a student who,

> sets [their] own individual goals and monitors progress towards achieving them; seeks clarification or assistance when needed; assesses and reflects critically on own strengths, needs, and interests; identifies learning opportunities, choices, and strategies to meet personal needs and achieve goals; and perseveres and makes an effort when responding to challenges. (p. 11)

Self-regulation in this school-based context is applied to the students in the classroom environment rather than in their interpersonal relationships, but it is nevertheless an integral component of social and emotional learning.

2.3 Why Focus on Social and Emotional Learning?

There is an assumption that students innately possess the social emotional learning skills needed when they arrive at school (Blan, Fogarty, Wierzba, & Yore, 2000; Elksnin & Elksnin, 1998). However, the absence of social and emotional skills has the potential to impact students in a number of ways, such as through bullying. Several studies indicate that students with poor social skills are at risk of being bullied by their peers (Chang, 2003; DeRosier, 2004; Fox & Boulton, 2005) or of becoming bullies themselves.

Social, emotional, and cognitive skills are all important factors to consider in relation to bullying behaviours, including defending and victimization. It is important to understand the specific skills and characteristics that are associated with engaging in bullying, being victimized, or defending victims from bullying. (Jenkins, Demaray & Tennant, 2017). With a greater risk of being bullied or of bullying others, students with poor social skills are also at a higher risk of having academic challenges (Christian, Morrison, & Bryant, 1998; McClelland, Morrison, & Holmes, 2000).

Rodriguez et al. (2005) posited that students who possess the ability to self-regulate—a component of social and emotional learning—are associated with achieving higher social competence, higher academic competence, and lower levels of externalizing and internalizing problems. Strong early social and emotional skills development has been shown to impact areas as diverse as adolescent substance abuse and other risk behaviours (Griffin, 2015; Griffin, Bang, & Botvin, 2010). However, many educational theorists have pursued the idea that emotional intelligence is more important than IQ as far as academic achievement is concerned (Denham, Wyatt, Bassett, Echeverria, & Knox, 2009; Goleman, 1995; Salovey & Mayer, 1990; Shonkoff & Phillips, 2000).

In a meta-analysis of social and emotional programs, Durlak et al. (2011) found that an emphasis on social and emotional learning has an impact on many areas of a student's life. Their study demonstrated results in "enhanced students' behavioural adjustment in the form of increased prosocial behaviours and reduced conduct and internalizing problems, and improved academic performance on achievement tests and grades" (p. 417). The far-reaching effects of social and emotional learning clearly make it exceedingly worthy of consideration as a means of increasing student achievement. A

proactive approach to social and emotional learning seems prudent, as Zins et al. (2004) stated, "social-emotional competence and academic achievement are interwoven and that integrated, coordinated instruction in both areas maximizes students' potential to succeed in school and throughout their lives" (p. 10). However, many educational theorists have pursued the idea that emotional intelligence is more important than IQ as far as academic achievement is concerned (Denham, Wyatt, Bassett, Echeverria, & Knox, 2009; Goleman, 1995; Salovey & Mayer, 1990; Shonkoff & Phillips, 2000). Social and emotional learning is more than relational skills in the same way that school gardens are more than just outdoor experiences.

2.4 School Gardens and Learning

An ever-growing body of research (Berman, Jonides, & Kaplan, 2008; Hartig et al., 2011; Louv, 2008) verifies there are numerous benefits to people of all ages when they connect to nature in one form or another. One of earliest forms of elementary schooling in Fröbel's kindergarten in the 19th century, set time aside for outdoor recess. It was known, even then, that students needed a mental break from the rigors of their school day (Borland, 2011; Palmer, 2002). In fact, decades before the education system became so heavily reliant upon technological innovations, school gardens were not seen as an extra item in a school as they are now but rather an expected and common place item in a school. Often regular school garden reports were made:

> A little garden is a constant source of healthy delight to every child. It was part of
> Fröbel's plan that every child should grow up as much as possible under the
> influences of nature, and learn her lessons from herself; and the original
> Kindergartens were held in summer in an open space of ground shaded by trees.

Each child had a little piece of ground given to him, where he sowed seeds, and

watched the process of their growth, and dug and raked the earth; and gardening

formed a part of the Kindergarten occupations. (Buckland, 1987, p. 77)

Many contemporary educators recognize that time spent in naturalized environments has

the potential to promote mental wellness. This time spent in nature in turn impacts a

student's ability to learn, as well as their ability to get along with others while in school

(Passey, 2014). Dadvand et al. (2012) contended that "children who attended schools

with higher outdoor greenness had a greater increase in working memory and a greater

reduction in inattentiveness than children who attended schools with less surrounding

greenness" (p. 1485). In other words, natural environments have the potential to provide

students with a multitude of benefits.

Assessing the school-based learning that happens in gardens is sometimes

challenging. It is challenging, because many who work in schools with gardens argue

that, by dint of the school merely possessing a garden, positive experiences *are* being

had, and therefore learning is happening naturally without any adult pre-planning. Just

taking students to the garden is missing a learning opportunity as Desmond, Grieshop,

and Subramaniam (2002) stated, "programs, activities, and projects in which the garden

is the foundation for integrated learning, in and across disciplines, through active,

engaging, real-world experiences" (p. 23). Using gardens in an active, thoughtful,

planned, experiential way for learning of all kinds, not just as a school beautification, has

the potential to maximize the learning that can happen in gardening spaces.

The importance of gardens in outdoor school spaces, and the learning that takes

place in them, is a popular topic in education (Beery, Adatia, Segantin, & Skaer, 2014;

Cutter-Mackenzie, 2009; Krywko, 2008; Walter, 2013). School gardens, for example, have been widely recognized for allowing a straightforward connection to the science curriculum for students in kindergarten through grade five in Ontario schools (OME, 2007). Connections to other areas of school curricula can be harder to recognize, but they certainly exist. William and Dixon (2013) suggested that academic outcomes related to school gardens could include life skills, nurturing curiosity, wonder, and language. Additionally, when students are involved in school gardens and their teachers foster a spirit of exploration within them, students are more likely to take pleasure in learning and develop positive attitudes towards gardening (Cannaris, 1995; Habib & Doherty, 2007).

School gardens can provide unique language-learning opportunities related to academic subjects by extending a student's vocabulary associated with gardening. Cutter-Mackenzie (2009) found that school-community gardens provided space "for students to embody their own culture through a study of English (language) and the local environment (gardening)" (p. 129). This often-overlooked benefit of school gardens is important in assisting students with the acquisition of improved language skills, particularly for those students in urban schools, because an outdoor learning experience—the kind which a school garden can uniquely offer—provides many academic benefits. These benefits include an opportunity to introduce a variety of topics related to social learning that are worthy of further exploration (Beery et al., 2014; Cutter-Mackenzie, 2009; Krywko, 2008; Walter, 2013).

Respect for self and for others is a facet of SEL that some students will find enhanced via school gardens (Burdette & Whitaker, 2005). Block et al. (2012) offered evidence to suggest that self-satisfaction and a sense of achievement, which are both

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important aspects of SEL, can be gained when students are involved in the activities associated with some form of school gardening. Dyment and Bell (2008) noted that in the participating schools they studied in Toronto, Ontario there was an overall increase in cooperation between students and that a "noticeable difference in student discipline problems had decreased on the green school ground and an almost identical percentage reported that incidents of aggressive behaviour had decreased" (p. 177). From Dyment and Bell's (2008) conclusions, at least in part, school gardens have the potential to promote skills related to SEL, while also offering students an overall improvement in school climate based on their use.

Teaching students early in their schooling experiences about nature and offering hands-on experiences with gardens connects them to nature and nurtures their connection to the earth (Schultz, 2000). In addition to academic learning goals, gardening has the potential to provide students with a sense of empathy related to nature that may result in pro-environmental stances later in life. Gardening may also contribute to the attainment of related citizenship skills such as collaboration and communication (Chawla, 2007; Kahn, 2002). These unique benefits should be part of the conversation about the importance of SEL contributions, which school gardens can assist in providing.

In 2007, the Ontario Ministry of Education released the results of a Working Group on Environmental Education entitled *Shaping our Schools, Shaping our Future*. This document was an attempt to pull together a vision for the province and resources that already existed into one document for boards of education and educators to access. The document offered a succinct vision for environmental education in Ontario that involved multiple levels (i.e., administration, provincial agencies, educators), provincial

curriculum documents that could be developed, and an overview of practices that were

suited for environmental education (see Figure 1).

Figure 1. Shaping Our Schools, Shaping Our Future (2007, p. 10).

A provincial response to the recommendations in *Shaping our Schools, Shaping*

Our Future designed to support environmental education and practices in boards, schools

and communities, was *Ready, Set, Green*! (2007). The *Ready, Set, Green!* document

offered teaching practices, environmental projects, and ready-made resources already

developed and offered throughout the province of Ontario. Within the document, several

gardening projects were featured, which ranged from creating a perennial gardening

space to a gardening space that highlighted the teachings of First Nations and gardening.

In 2010, the Toronto District School Board (TDSB) set forth a mandate entitled

Go Green; Climate Change Action Plan. In this action plan, the TDSB outlined its

environmental commitment in addition to the policies to support them. The TDSB

identified three focus categories: planning for the long- term, quick-starts, and

organizational changes. These categories were touchstone points in moving the action plan forward. The Waterloo Region in Ontario also had a vision for school and community gardens with the participation of both the public and separate (Catholic) boards of education. The resulting document, *Gardens for Healthy Schools* (2016), is a scan of school gardens in the Waterloo region, which noted that, "schools are increasingly being recognized as important sites for health promotion, and this recognition has led many school systems to broaden their focus to include a more holistic vision for student development" (p. 8). Best practices associated with school gardens, along with support from Ontario Ministry of Education documents, are recommended within this document for schools wanting to or planning to have gardens.

The Chatham-Kent Public Health Unit established formal partnerships with community gardens and schools in 2016. Their policy acknowledged that gardens are "a valuable recreation activity that can contribute to food production, enhancing food skills, community development, environmental awareness, positive social interaction, and community education" (Municipality of Chatham-Kent Health and Family Services Public Health Unit, 2016, p. 5). The Chatham-Kent Public Health Unit, in partnership with local elementary and secondary schools, set out a vision to grow gardens within schools with a goal of two gardens per year in two different schools. The Thunder Bay Catholic District School (TBCDSB) Board also has policies and a Board statement on the importance of school gardens and space greening. The Board identified that increasing school gardens often plays a part in increasing healthy food choices for children and their families. The TBSDSB stated that a "school food garden can play a role in increasing the options of healthy food for the students and their families by providing space for the

production of food through school gardens" (Thunder Bay Catholic District School Board, 2013, p. 1). The Ontario Ministry of Education (2014) also identified school gardens as being an important means of promoting healthy eating, as providing an opportunity for active learning to occur, and a medium which "will engage students in creating and sustaining a healthy school environment" (p. 10).

The Peel Region School Boards in Ontario use a guide entitled *Digging It: A Guide for Greening School Grounds in Peel Region*. This document also outlines a process for greening outdoor spaces and has a great deal of information about establishing school gardens. The guide establishes curriculum connections in addition to practical considerations, like fundraising and plant selection. There are policies within both boards, the Peel District School Board and Dufferin Peel Catholic District School Board, which exist within the maintenance departments, and the guide offers suggestions on how individual schools can work with their respective departments (Toronto and Region Conservation for the living city, 2016). The resulting document, *Gardens for Healthy Schools: A Scan of School Gardens in the Waterloo Region* (2016), stated that "schools are increasingly being recognized as important sites for health promotion, and this recognition has led many school systems to broaden their focus to include a more holistic vision for student development" (p. 8).

School gardens offer potential behaviour interventions and work as promotional tools for social and emotional learning. The benefits of this three-pronged approach have the potential to demonstrate itself in nearly all students throughout the school. The garden, as a tool for effecting intervention, has the ability, as Payton et al. (2008) asserted, to assist students "with and without presenting problems...they were also

successful across the K-8 grade range, for schools in urban, suburban, and rural areas, and for racially and ethnically diverse student bodies" (p. 7).

2.5 School Leadership

School leaders must wear many hats so to speak in their roles and responsibilities. These leaders must focus, not only on the school as an entity unto itself with its own unique identity, but they must also focus on the educational team working within its walls and the students filling its halls. Thus, quality of leadership is usually a key determinant in the achievement of an ideal learning environment. Effective leaders facilitate a positive climate that welcomes change and encourages others to look at challenges and goals from many points of views. Fullan (2014) found that "it has become increasingly clear that leadership at all levels of the system is the key lever for reform, especially leaders who focus on capacity building and develop other leaders who can carry on" (p. 21).

While attitudes and approaches of school leaders are important at all levels, a school principal is directly responsible for leading and creating change. Cotton (2003) noted that "in particular, several decades of research on the topic has resulted in a body of knowledge that details the positive relationships between the practice of school principals and student academic achievement" (p. 729). In their comprehensive research overview of the literature of successful school leadership, Leithwood, Harris, and Hopkins (2008) claimed that "school leadership is second only to classroom teaching as influence on pupil learning" (p. 29).

The connection between principal leadership and achievement is certainly not the only effect principals can have on their schools, but it is one that can exert hugely positive or enormously negative results (as well as all types of results between those

extremes), and so is well worth noting. A principals' relationships with their school staff, as a result of their actions and behaviours, has the potential to affect the work environment and the satisfaction that educators feel in their work environment. Educator job satisfaction seems to have an impact on student success. (Griffith, 2004; Hoy, Tarter & Hoy, 2006).

The leadership style of a school's principal is invariably going to affect not only how the school performs on a daily basis, but also the direction that school is headed. The principal's impact is indeed far-reaching. However, a principal's style needs to adjust for how much staff is willing to embrace change and innovation. As Korkmaz (2007) explained, "it is his or her leadership that shapes the school's learning climate, the level of the relationship between staff, and the teacher morale" (p 26). This ability to create change is part of a great responsibility, not only to manage the day-to-day operations of a school and all those within it, but also to work effectively in a collegial and collaborative manner in order to envision, model, and create a positive present and future for the school in partnership with the community.

2.6 Transactional Leadership

The development of clear expectations and goals for operation in conjunction with the implementation of organizational processes and procedures to maintain a positive learning environment are focal points of the transactional leadership style (Bass, Avolio, Jung, & Berson, 2003). Sergiovanni (2007) describes transactional leadership in education as leadership in which the principal maintains a tightly structured organizational operation. Transactional leadership, which has its genesis in business literature, is a style of leadership often witnessed in schools. It is managerial in nature

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and revolves around the notion of compliance by a leader's followers to that leader's wishes (Judge & Piccolo, 2004). Odumeru and Ogbonna (2013) found that "transactional leadership, also known as managerial leadership, focuses on the role of supervision, organisation, and group performance; transactional leadership is a style of leadership in which the leader promotes compliance of their followers through both rewards and punishments" (p. 358).

Transactional leaders operate as "approaching followers with an eye toward exchanging" (Burns, 1978, p. 4). In a school where the principal is a transactional leader, some teachers might not be interested in trying anything new, perhaps because the "exchange" being offered is not appealing to them, and the challenges posed by inevitably butting heads with a naysayer is not worth it. Transactional leadership theories are all founded on the idea that leader-follower relations are based on a series of exchanges or implicit bargains between leaders and followers (Den Hartog, Van Muijen and Koopman, 1997).

In reference to transactional leadership, Bass, Avolio, Jung, and Berson (2003) stated: "This style of leadership implies closely monitoring for deviances, mistakes, and errors and then taking corrective action as quickly as possible when they occur" (p. 208). As Aydin, Sarier, and Uysal (2013) stated, "transactional leaders identify primarily tasks of the followers, establish the structure, emphasis on planned and scheduled work" (p. 808). Proposing something different to a Principal who has a transactional leadership style, might be met with resistance simply because it deviates from the plan and might require a Principal to challenge the status quo of the Board of Education. If one of the facets of transactional leadership is "contingent reward" and the leader believes that

actions receive a reward, challenging a policy might not be viewed favorably by a transactional leader/Principal. (Judge and Piccolo, 2004)

In the case of school gardens, transactional leadership style may prove challenging for a school principal, because "Transactional leaders are concerned with processes rather than forward-thinking ideas." (Odumeru & Ogbonna, 2013). Especially in a climate where school gardens are often seen by the uninformed as an extra item and not necessarily a learning tool. But, as Silins perceptively noted, there are increasing demands being placed on schools, not only as places of academic learning but also as community hubs and as a result of this shift in thinking and role of the school within the lives of students "a corresponding shift in perception of the role of the principal from manager to leader has occurred." (p. 272).

2.7 Collaborative Leadership

Within every school the principal is not only the formal leader in that setting, they are the representation of the Board of Education. The principal sets the tone and is the face of that particular school. Today's school leaders are caught between current expectations of improving test results and expectations of the past in which the principal's job was to see that the school ran smoothly and the principal was responsive to students, parents, and other stakeholders (Fullan, 2007). It is immediately evident when a principal has adopted a collaborative leadership stance, because that principal is seen seeking to create connections among all school stakeholders in order to share expertise; principals involved in collaborative leadership will seek out give-and-take relationships, rather than implementing follow-my-orders relationships.

As the leader of the school team, a principal oversees those who work in the school. James, Mann, and Creasy (2007) found that, "leaders need to learn how to provide a psychologically safe space necessary to bring about change in their organization and to do so they require an experience of this in their own development" (p. 90). Heck and Hallinger (2010) defined collaborative leadership as that which "focuses on strategic schoolwide actions, directed towards improvement in student learning, that are shared among teachers, administrators, and others" (p. 228). The collaborative leadership stance is one that more aptly facilitates, even welcomes, changes and empowers the staff as well as the students. Collaborative leadership necessitates a caring principal—one confident enough to already have thought about and developed their own leadership style, in addition to having a clear vision of school activities. It is also usually the reflective principal who embraces his or her own ethical leadership style. While the collaborative leadership style is a lot more work, this kind of principal will reap the rewards a collaborative style will deliver.

Collaborative leadership encourages a school climate where "teachers have opportunities to engage in professional discourse, they can build upon their unique content, pedagogical, and experiential knowledge to improve instruction" (Goddard, Goddard, & Moran, 2007, p. 881). Collaborative leadership offers a new way to solve old problems and take advantage of untapped opportunities. It mobilizes collective" know-how," clarifying problems, resolving conflicts and building consensus to act.

A principal who adopts a collaborative leadership style has the potential to create a schoolwide vision of gardening that could benefit everyone involved. Collaborative

leaders, along with interested Educators can create learning environments that support

school gardens at individual schools but also Board of Education wide.

2.8 Transformational Leadership

In Southwestern Ontario schools, the school gardening movement has not taken

hold as it has in other areas of the province. There are many Educators within

Southwestern Ontario schools and communities who want gardens and gardening

experiences for their students. Many Educators who decide to proceed in setting up a

school garden or gardening experience without going through the tedious and often

confusing process to obtain Board of Education approval, find themselves in the position

of having to ask for forgiveness rather than permission from Board of Education

superiors.

To create gardening experiences in schools requires a principal who is willing to

minimize the hierarchy of power, which exists within a school, in order to share power

and expertise. Leithwood et al., (2008) listed leadership qualities common to school

leaders who have created successful school environments. Among these qualities, the

authors have noted the importance of "building vision and setting directions;

understanding and developing people; redesigning the organisation; and managing the

teaching and learning programme" (p. 29). As Goleman, Boyatsis, and McKee (2002)

stated,

> leaders have always played a primordial emotional role...Throughout history and
>
> in cultures everywhere, the leader in any human group has been the one to whom
>
> others look for assurance and clarity when facing uncertainty or threat, or when
>
> there's a job to be done. The leader acts as the group's emotional guide. (p. 18)

Many cultures express leadership in different ways and through different structures, different terms etc. but in the current school system that exists in southern Ontario the Principal is considered the leader and as such has the greatest potential for creating change. This does not mean they are the only ones capable of creating change in a school but they are the focus of this research.

In 2004, Sernak focused on three female African-American school principals—all transformational leaders. The idea of community was very important to all of these educators: "Family, extended family and community family held high priority for these women" (p. 80). One of these principals stated it had never been her desire to become the principal of a school:

> Her aim was to extend her talents as a teacher to create a school community that had more empathy for the parents, lower socioeconomic African Americans, in the neighborhood. That meant treating all people related to her school with dignity, caring, and concern, both professionally and personally. It meant maintaining her own individuality, thus, allowing faculty, staff, and students to know her as a person. (Sernak, 2004, p. 84)

She led her school community by example through expert SEL skills: setting and achieving goals, empathy for others, maintaining positive relationships with others, and engaging in productive problem-solving and decision-making. Sağnak (2010) in his study of transformational leadership in which he used the Principal Leadership Style Inventory developed by Leithwood and Jantzi (1991) in Turkey with 50 elementary school leaders, was used for determining principals' transformational leadership style offered that leaders

who have adopted the transformational leadership stance, had demonstrated a connection to those around them and were able to show that they cared about those around them.

Goleman et al. (2002), citing Druskat and Wolff, elucidated how the transformational leader, who exhibits an ethic of care and high level of SEL competency, is what is required for successful, productive, and constructive group dynamics that lead to innovation and change:

> Collective emotional intelligence is what sets top-performing teams apart from average teams...Group emotional intelligence...determines a team's ability to manage its emotions in a way that cultivates 'trust, group identity, and group efficacy'…and so maximizes cooperation, collaboration, and effectiveness. In short, emotional intelligence results in a positive—and powerful—emotional reality. (Goleman et al., 2002, p. 177)

Transformational leadership has many facets depending upon the literature, but at the core of this leadership style is someone who above all cares and exhibits empathy. As Goleman (2002) stated, "empathy is the sine qua non of all social effectiveness in working life" (p. 50)—meaning empathy is the thing without which nothing else can be achieved. As well, Darling-Hammond (1996) argued it was essential for teachers to possess a capacity for empathy. Given the general resistance, currently, to the gardening movement by most Ontario Boards of Education, a principal who exhibits caring, empathy, and embraces a transformational change mentality, will likely be required to move any garden-in-schools agenda forward locally on their own.

With respect to transformational leadership in an educational setting, Elias, O'Brien, and Weissberg (2006) found leadership that is willing to take chances and

establish relationships amongst staff is needed. It is a shared-control model in which the principal seeks to unite his school staff to share a collective vision and to understand, rather than sit atop the management pile issuing edicts. Aydin et al. (2013) found that transformational leaders, work as a coach to coordinator team efforts and line up desires and needs of those members to help the team achieve goals and their desires. One goal of any principal, when assuming the helm, should be the empowerment and promotion of internal expertise and interests. Bass and Steidlmeier (1999), posed the idea that through authentic transformational leadership a leader can align goals and visions in a participatory manner.

This transformational leadership stance would result in far greater benefits for the school, the teachers, the students, and the principal's own reputation—far greater than most principals could ever begin to imagine. Valentine and Lucas (2002) argued that transformational leaders inspire followers to move beyond their own needs and ambitions, to work towards higher level goals and work together to develop school-based goals and solutions. Transformational leaders typically seek to empower those around them to carry out a vision. In the case of school gardens, it is a vision of the unique benefits school gardens could affect in their schools, in their teaching, in their classroom practice, and ultimately in their communities. These qualities and characteristics are crucial to have in the leader of any school intent on taking a step toward school gardens as a standard practice in education rather than as a mere novelty.

The nature of effective school leaders and the structure of schools along with outcomes (see Figure 2) was outlined by the Australian Council for Educational Research

(ACER) and Mulford in 2008 and illustrated the factors that are mutually-dependent upon each other.
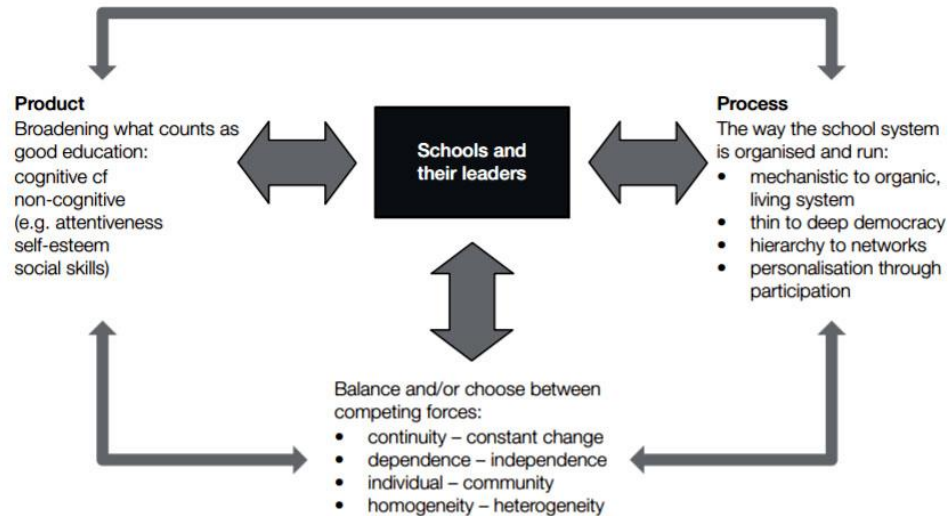
Figure 2. Outcomes of the contextual forces for school and their leaders (ACER & Mulford, 2008).

Figure 2 presents an *interdependence and dependence* of school leaders on major aspects of a school. Applying this presupposition and having a school with a principal who possesses, for example, a transformational leadership lens, has the potential to create a positive environment. This environment is ripe for discussion, change, and openness to new concepts, such as integrating gardens into the school. Ideally in such a scenario, the key beneficiaries of principals and teachers working more closely together would be the students and their academic and social and emotional learning. Although, ultimately, an entire community could benefit from just one school deciding, via its principal, to be an innovator. The Australian Council for Educational Research and Mulford (2008) and Geijsel, Sleegers, Leithwood, and Jantzi (2003) indicated that a transformational leader, who facilitates the creation of a shared vision improves the quality of the educational experience for school-based educators and students.

Leithwood, Seashore-Louis, Anderson, and Wahlstrom (2004) offered their view that when examining educational leadership, sometimes what a leader is called is not as important as what they do while in the position of leadership. Labels do help to create a common language, but "it is a power 'to' and 'over' process through creating boundaries that include and exclude" (Gunter, 2004, p. 22) that is important. Silins (1994) suggested that although principals are not the only "leaders" in the school, they certainly can operationalize change within a school and coordinate efforts of those within the school.

Empirical research finds that successful school leadership creates conditions that support effective teaching and learning and builds capacity for professional learning and change (Fullan 2001; Hallinger, Bickman, and Davis 1996; Hallinger and Heck 1996; Heck, Larson, and Marcoulides 1990; Leithwood et al. in press; Marks and Printy 2003; Mulford and Silins 2009; Robinson, Lloyd, and Rowe 2008; Wiley 2001). Perhaps it is wise to consider the principal as being a part of an interlocking system, rather than a top-down hierarchy, a system that has many components including students, teachers, parents, and principals (Souter, 2001). The exercise of transformational leadership has within it the seeds to create this space—a space open for gardens to be installed and used as yet another teaching tool by school-based educators

2.9 Theoretical Framework

As an early childhood educator, the lens I use to approach learning is through social constructivism. Social constructivism has its roots in many philosophers of early learning, but, in particular, the work of Russian psychologist Lev Vygotsky and his introduction of the concept of the zone of proximal development. Vygotsky (1978) defined this concept as "the distance between the actual developmental level as

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determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). In Figure 3, I illustrate Vygotsky's social constructivist theory as it demonstrates social interactions, connections, and shared experiences with school gardens as the nexus.
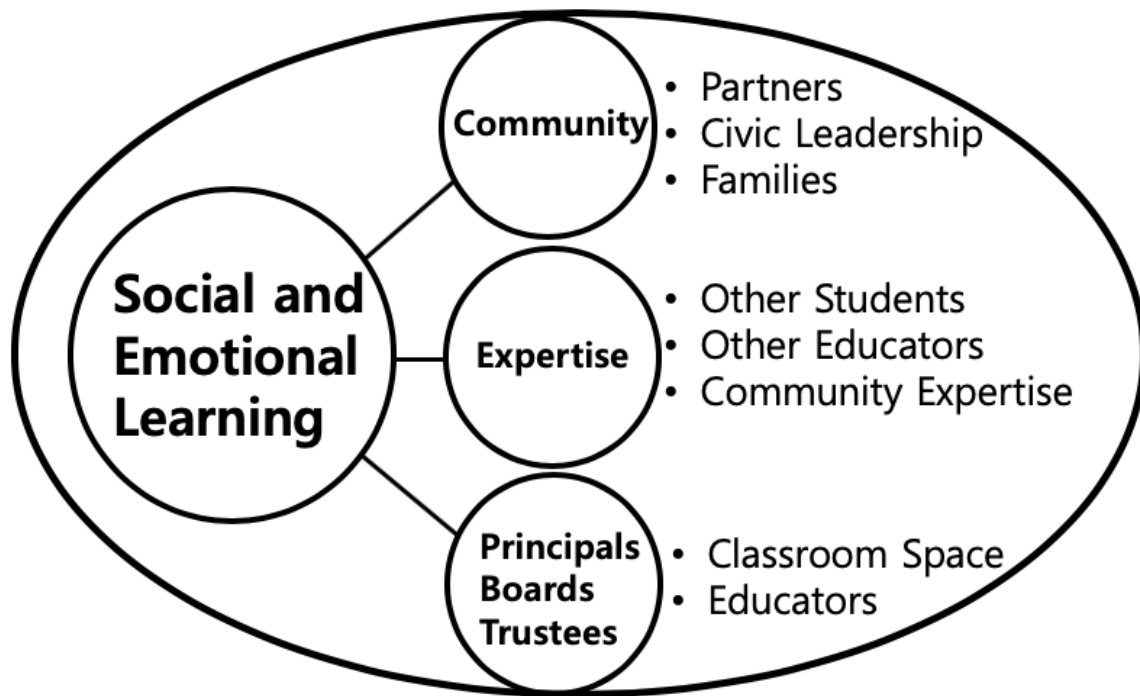
Figure 3. Vygotsky's social constructivist theory with social and emotional learning as the nexus.

Gauvain and Cole (2004) stated that cognition happens, not in a vacuum, but rather in relationship to those who surround learners socially; specifically, those who are more knowledgeable than the learner. Theorists of constructivism also postulate that cooperative learning assists in establishing a more meaningful learning experience for those involved (Powell & Kalina, 2009), as Gergen (1985) stated: "Social constructionist inquiry is principally concerned with explicating the process by which people come to

describe, explain or otherwise account for the world (including themselves) in which they live" (p. 266). Thinking through a social constructivist lens provided me with direction in my research. Social constructivism aided in understanding my research paradigm and provided a blueprint for the questioning techniques that were used in this study.

My task as a researcher was to honour and respect the expertise that each of my participants brought to the research process. Charmaz (2006) stated that within a research study, constructivists, "enter the phenomenon, gain multiple views of it, and locate it in its web of connections and constraints" (p. 187). I also wanted to appreciate my participants' unique understanding of what social emotional learning looked like for students in kindergarten through grade five. Using a social constructivist and interpretivist lens in this research meant that the participants and I were willing to engage in cooperative learning experiences, which have the potential to internalize the new information and insight gained.

Constructivism and interpretivism are approaches that assert social phenomenon, and those within the phenomenon, are in a constant state of construction and revision (Bryman, 2008). This means that each person brings his or her own beliefs and histories to each experience and that those beliefs and histories also form part of the outcome. As the research study progressed, each interaction with my participants and my subsequent reflection on the data resulted in a process of cyclical revisiting of the framework (Brown, Collins, & Duguid, 1989). Part of my task was to provide an opportunity for each person to tell their story and share their values—experienced by them prior to, during, and after the study. Essentially, within this paradigm, reality is constructed in the mind of the individual, rather than it being an externally-imposed, singular entity

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(Hansen, 2014).

What is central to this theoretical framework is the interaction between the investigator and the object under investigation. McQueen (2002) suggested that "interpretivist researchers seek methods that enable them to understand in depth the relationship of human beings to their environment and the part those people play in creating the social fabric of which they are a part" (p. 55). It is no coincidence that the circular nature of McQueen's description matches the cyclical nature of the process itself.

In their review of literature related to the impact of non-cognitive skills, Gutman and Schoon (2013) identified aspects of social and emotional learning that correlate with "positive outcomes in the future such as academic attainment, improved finances in adulthood, and reduced crime" (p. 2). Jones (2017) more directly stated, "there has emerged a consensus among those who study child development, education, and health that social and emotional skills matter for many areas of development, including learning, health, and general wellbeing" (p. 8). The importance of social and emotional learning (SEL) in the lives of students, and also in the lives of those who are part of the lives of students, was a touchstone for me within the research process. My research into SEL and school gardens has not been previously investigated in Ontario. Therefore, this study has potential to add valuable information to the existing literature.

3.0 Summary

This chapter provided an overview of social and emotional learning, the importance of social and emotional learning, the learning that can happen in school gardens, and school leadership. Through the literature, I reviewed social and emotional learning along with school gardens as they currently exist in Ontario and I have laid the

foundation for the gap in the literature connecting social and emotional learning and school gardens, which my study seeks to address. The next chapter will detail the specific methodology used for this study.

Chapter 3

3 Methodology

      This research is a qualitative exploratory case study (Patton, 2002). Patton (2015) explains that qualitative inquiry "typically focuses in depth on relatively small samples, even single cases, selected for a quite specific purpose" (p. 264). Qualitative research allows themes and categories to emerge from the data collected. "The value of qualitative research lies in the particular description and themes developed in context of a specific site" (Cresswell, 2014, p. 203-4).

      Qualitative research is concerned with seeking to build an understanding of social phenomena. Rather than relying on a set of finite questions to elicit categorized, forced-choice responses with little room for open-ended replies to questions as quantitative research does, the qualitative researcher relies on the participants to offer in-depth responses to questions about how they have constructed or understood their experience. Case study research deeply examines one person, a single classroom, an individual school, or a distinct program. The case is "a phenomenon of some sort occurring in a bounded context. The case is the unit of analysis" (Miles & Huberman, 1994, p. 25). The researcher's emphasis is placed on the description and exploration of the case, then on making inferences about the case in that specific context (Gilgun, 1994; Stake, 1995). Case studies are analyses that give a multi-view perspective. In a case study, the researcher studies not just the perspective of the participants, but the interaction between the participants as well. This is one feature characteristic that this case study holds. The multiple sources of data allow for a rich description of the phenomena in the classrooms in the research setting.

The case study also allows for "close collaboration between the researcher and the participant, while enabling participants to tell their story" (Baxter & Jack, 2008, p. 545). Yin (2014) suggests case study allows the researcher to focus on a ''case' and retain holistic and real-world perspective" (p. 4), in this case the experiences of Principals, Vice Principals, Teachers, Special Education Teachers and Early Childhood Educators observing students in school gardens. Gathering data through interviews is common when conducting case studies (Tobin,2009; Yin, 2014). "Rigorous qualitative case studies afford researchers opportunities to explore or describe a phenomenon in context using a variety of sources" (Baxter & Jack, 2008, p. 544). Baxter and Jack (2008) emphasize the need to use multiple lenses to ensure that multiple aspects of the phenomenon are explored (p. 544). "Case studies are a design of inquiry found in many fields, especially evaluation, in which the researcher develops an in-depth analysis of a case, often a program, event, activity, process, of one or more individuals" (Cresswell, 2014, p.14).

An exploratory case study is a type of case study used to explore those situations in which the situation being evaluated has no clear, single set of outcomes (Yin, 2003). This case is identified as being exploratory (Arthur et al., 2012) as I was unable to identify earlier research that considers both the influence of school gardens and the focus social and emotional learning that occurs within them. The case is "a phenomenon of some sort occurring in a bounded context. The case is the unit of analysis" (Miles & Huberman, 1994, p. 25). The unit of analysis is school gardens and the units of observations are the participants experiences and their own observations of social and emotional learning.

The researcher has been an early childhood educator/educator for over twenty-five years within the community that the research took place and has taught education at the post-secondary level. In the invitation email and verbally, participants were informed that no information that was shared during data collection, including the names of participants, would be shared with anyone. Transparency in the research process during this study was also maintained by logging in the researcher's journal the researcher's experiences, thoughts, and values.

3.1 Research Design

As previously indicated, an exploratory case study was chosen as the qualitative research method, because this approach, "investigates a contemporary phenomenon in-depth and within the real-life context especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2009, p. 18). The boundaries between school gardens and the SEL of students in urban schools are not immediately clear, which is a situation that lends itself ideally to the methods of exploratory case study research.

Patton (2015) explained that qualitative inquiry, is often done for a reason and is more focused than perhaps other types of research. Qualitative research allows themes and categories to emerge from the data collected (Creswell, 2014). Specifically, the case study approach selected for this study reflected an inquiry into a specific contemporary event (i.e., school gardening during 2017) and the direct observations of participants. Case study research allows a researcher to explore a topic. (Gay, Mills, & Airasian, 2012) Zanal (2007) argued, "case studies, in their true essence, explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited

number of events or conditions, and their relationships" (p. 2), and the exploration and investigation of the relationship between social and emotional learning and gardens was the essence of this study.

3.2 Data collection.

Data collection occurred through in-depth, semi-structured interviews with participants. Any potential identifying information regarding participants was omitted to ensure confidentiality and pseudonyms were used. Participants were provided with a private personal journal in which to record their observations and thoughts they wanted to share, at their discretion, and as they saw fit, during the interviews. Participants came to the interview with their own notes and observations made during the course of their workdays (i.e., before, during, or after the garden-based learning experiences). Participants were given minimal instruction for the use of the journals in order to minimize constraints and encourage open-ended observations. In the end, however, informal prompt questions were used as participants found they required more direction (McCracken, 1988). The participants were then asked to consider sharing their observations and field notes with me if they felt comfortable doing so. All participants were amenable to complying with this request and all submitted their journals for further analysis. I also kept a reflective research journal during the data collection process. All data collected were presented in an accurate and detailed manner, which protected the identities of individuals participating in the study. Additionally, all interviews and participants adhered to the same protocols to ensure consistency and protection of the participants' rights.

3.2.1 Participants.

As indicated earlier, the initial calls for expressions of interest in the research study were sent throughout a board of education via the superintendent in charge of research. I also used the aforementioned email invitation (Appendix A). Participants contacted me directly if they were interested in the study, thereby maximizing anonymity. Potential participants who were interested contacted me via email and identified their preferred means of communication. Once initial contact was made and potential participants identified how they desired to be contacted throughout the study (i.e., in person or by telephone), further information and greater details about their involvement was provided. This included a tentative date for an initial meeting. Participants were reminded they were agreeing to meet and to be interviewed as part of the data collection process. Participants were then provided with an outline of what to look for related to social and emotional learning (Appendix B).

What to Look For (Appendix B) is an adaptation of the Devereux student strengths assessment (DESSA) comprehensive system and the early development instrument (EDI). Both of these instruments are frequently used when working with children in schools to explore social and emotional learning. The DESSA is a "standardized, norm-referenced behaviour rating scale that assesses the social-emotional competencies that serve as protective factors for students in kindergarten through the eighth grade" (Naglieri, LeBuffe, & Ross, 2013, p. 243). The EDI is a questionnaire, which "measures five core areas of early child development that are known to be good predictors of adult health, education, and social outcomes" (Offord & Janus, 2008). Both of these instruments are used in Ontario and were familiar to participants. It was

important to avoid having participants feel I was acting as an expert or was the teacher, but rather that I was trusting the participants themselves to be experts in their fields in their own right. By providing guidelines on *What to Look For*, my aim was to empower the participants by helping them recognize that what they were being asked to look for as a participant, they were, in many cases, already doing.

I met with participants for a face-to-face interview that lasted approximately 60 to 90 minutes. I asked them to bring their personal field notes with them from their journals. I ensured I was familiar with the interview questions to limit any distractions to the participants by repeatedly referring to written material during the interview. This also allowed for an even flow during the interview, as Smith, Flowers, and Larkin (2009) stated, "a well-prepared researcher is more likely to be engaged, listen attentively and respond appropriately in the interview" (p. 120). As a result, I had the questions available for reference but did not follow the identical sequence of questions in each interview. What resulted was more organic than a series of questions and answers, which had something akin to the flow of in-depth conversations. The interviews were comprehension-focused with the main task to accurately and thoroughly understand the meaning of what the interviewees said (Kvale, 1996).

Open-ended questions that could be investigated further through follow-up questions relating to SEL and school gardens were asked of the participants (Appendix 3) (Creswell, 2013). Participants agreed to respect the requirements of confidentiality and privacy by avoiding the use of names and with the intention of *do no harm* as a guiding principle. The interview plan allowed for ample flexibility for a deeper exploration of topics or for new topics of inquiry to arise (Creswell, 2013). It was important to build

trust and establish rapport during the interviews, because a participant—in order to give you the best data possible—needs to be comfortable enough to answer honestly. A position of equality and mutual respect is central to the relationship between the researcher and participant (Holloway & Wheeler, 2010). Although this is challenge to achieve in a researcher participant situation where each party has just met one another, every effort was made by the researcher to not appear to be an "expert" but rather one who was genuinely interested in hearing the answers and stories offered by participants.

Mills and Gay (2016) suggested that it is most important to utilize participants who are well-versed in the nature of the phenomenon under study. With this in mind, the sources of data for this study were interviews with teachers, early childhood educators (ECEs), special education teachers and vice principals. Also included were participant notes and observations of students' actions and words in a variety of urban schools within Southwestern Ontario.

The focus for the participants in the study was the core practices that make up social and emotional learning, which are demonstrated by kindergarten to grade five students within school gardens. Participants from six school sites were used. Through the use of multiple sites, I was able to "strengthen the precision, validity, stability and trustworthiness of the findings" (Miles, Huberman, & Saldaña, 2014, p. 33).

The urban schools involved in this study catered to a highly diverse student population in terms of abilities, ethnicity, culture, and socio-economic status. Participants in the study were those teachers, ECEs, and administrators who work in these schools. As indicated, there were six schools in this study and participants were all full-time school-based educators (not daily occasional teachers or supply ECEs, as those school-based

educators would not be able to guarantee their continued participation over any length of time). Participants were informed that no release time or remuneration would be provided for their voluntary involvement in this study.

Those participating in the study were asked to observe students in their classes and to note student skills, knowledge, and attitudes during any time spent in a gardening experience or in the school garden while also maintaining respect for students' rights of privacy and anonymity (Appendix 2). Participant observations took place for approximately four to six weeks. The timing of the study allowed for the spring planting of the school gardens, which is typically an exciting time in the process of gardening. It provided participants a varied overview of gardening in schools, as students were involved in the creation of gardens, selection of plants, and promotion of plant growth. Some of the schools started plants indoors and transferred them to the outdoors and some had completely indoor gardening systems from which to draw their experiences.

As indicated earlier, those who participated in the study were either a school administrator, teacher, special education resource room teacher (SERR), or early childhood educator (ECE) within six different urban schools. Each school included kindergarten through grade five classes (see Figure 4). Participant perspectives were consequently distinct, but there was also overlap in terms of similarity of experiences and themes. All of those involved in the study had some form of gardening experience with students in the past, ranging from planting seeds in a cup to a full outdoor school garden. However, each participant stated they had not considered gardening through the social and emotional learning lens, but rather, through a math or science lens and in relationship to existing curriculum expectations only.

Table 1

School	Participants
School A	1 Kindergarten teacher (T1) 1 Early childhood educator (ECEA)
School B	1 Kindergarten teacher (T2) 1 Kindergarten teacher (T3) 1 Early childhood educator (ECEB) 1 Vice Principal (VP1) 1 Special education resource room teacher (SR1)
School C	1 Grade 2 teacher (T4) 1 Special education resource room teacher (SR2)
School D	1 Kindergarten teacher (T5) 1 Early childhood educator (ECEC)
School E	1 Vice principal (VP2)
School F	1 Early childhood educator (ECED) 1 Grade 4 teacher (T6)

Figure 4. Participants.

3.2.2 Interviews.

Semi-structured interviews were chosen to allow for a wide possibility of answers from participants. Semi-structured interviews create "a space through which you might explore with participants the contextual influences evident in the narratives but not always narrated as such" (Galletta, 2013, p. 9). Semi-structured interviews can

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accommodate open-ended answers while still keeping the focus on the research

questions. This technique also holds the potential to gather a large amount of varied data

from the predetermined questions, which together created a picture of the participants'

experiences that might not be possible using another method of collecting data (Schmidt,

2004). Using an exploratory, qualitative case study approach was applicable for this

research study, because, as Yin (2014) suggested, it is the preferred strategy when *how*

and *why* research questions are posed. The semi-structured questions asked of the

fourteen participants followed such a format (Appendix C). Semi-structured interviews

are a flexible approach that allow the researcher to refer to a list of key themes, issues,

and questions (David & Sutton, 2004). They also allow a researcher to follow a plan, but

with flexibility, which was important in my study due to the varied types of school-based

educator participants (teachers, early childhood educators, vice principals, and special

education teachers) that took part in the study; each of whom brought their own unique

perspectives.

3.3 Credibility

To increase the credibility of this research study, I used multiple perspectives

from multiple participants and their observations of similar experiences in a classroom

engaged in garden-based learning. Specifically, in a garden in the kindergarten

classroom, both a teacher and the ECE are present. Having these two educators in the

same room viewing the same experiences with the same students is a situation which

lends itself to increased credibility: Those participating in the study were reporting on the

same grade and from similar urban school experiences. Thus, the research study has the

potential to produce similar or complementary results with respect to participants' observations of students in school gardens.

Administrators were also invited to participate and were drawn from the same schools as the participating teachers. The administrators were able to provide further insight into events occurring in the classroom during the gardening experiences. Throughout these varied sources of data and perspectives, the goal of consistency was achieved.

In quantitative research, the issue of validity is one that can be defined easily as "the degree to which something measures what it purports to measure" (Gay et al., 2012, p. 123). Validity can become more of a challenge when dealing with qualitative research as it is often considered to be too subjective in its interpretations. One method I employed to assist with validity was purposive sampling of schools with gardens. Participants were recruited on that basis and not chosen with regard to any other criteria.

Also, member checks were used to provide trustworthiness of data. Lincoln and Guba (1985) listed member checks as, "the most crucial technique for establishing credibility" (p. 314) in a study. Participants were shown the themes I identified that emerged after all data had been transcribed and analyzed. Participants were offered the opportunity to offer input in the process. In effect, the process, as explained by Creswell and Miller (2000) meant, "the researchers ask participants if the themes or categories make sense, whether they are developed with sufficient evidence, and whether the overall account is realistic and accurate" (p. 127). Member checks resulted in increased accuracy of reporting and interpretation; further adding to the credibility of the study.

Data triangulation, which is "the process of using multiple methods, data collection strategies, and data sources to obtain a more complete picture" (Gay et al., 2012, p. 345) was achieved through the use of participants' field notes, interview transcriptions, and my own researcher notes, which, as Yin (2009) stated, is done in order that the "construct validity also can be addressed because the multiple sources of evidence essentially provide multiple measures of the same phenomenon" (p. 22). Cross checking of data through the data sources of participant interview transcripts, participants field notes, researcher field notes and reflective journal allowed for the date to be reviewed through multiple perspectives.

3.4 Researcher Reflexivity

To ensure the authenticity and accuracy of the participants' meanings, I needed to ensure that participant questions did not inadvertently lead or guide the responder to a predetermined response as well as recognize reflexivity. Reflexivity is defined by Horsburgh (2003) as "active acknowledgement by the researcher that her/his own actions and decisions will inevitably impact upon the meaning and context of the experience under investigation" (p. 308).

Using a reflective journal throughout the process by the researcher to examine thoughts, biases or attitudes that might have been unwittingly added to the data gathering process was done. A topic such as examining the demographics of the participants and myself to determine if there was a power differentiation was an example of one topic of the journal entries.

Another example of topic that was kept in my research journal was that of emergent findings. Emergent findings were documented in the journal and then later

considered as having significance based on what was seen in all the data not just initial thoughts and observations of the researcher. Journal entries in addition to other techniques like member checking and triangulation, were part of the reflective process in the research.

As a researcher, in order to strengthen data, it is imperative to try to see everything that happens in a setting, and not just look for what suits the researcher's bias or purpose in doing the research. There were efforts to strengthen the data through researcher through journaling and memos and field notes.

3.5 Transferability

A garden is an organic learning tool nearly any school can create or accommodate. Transferability of these study results is possible for other schools if the study's design elements are similarly maintained. To facilitate transferability, I employed the "provision of background data to establish context of study and detailed description of phenomenon in question to allow comparisons to be made" (Shenton, 2004, p. 73). In other words, the study results may be applicable to other educational settings involving kindergarten through fifth grade classrooms, particularly in urban schools, which have, or wish to have, gardens or gardening experiences. The SEL qualities that were used in the research study were those that have been noted in an evidence-based manner and were developmentally appropriate for students in kindergarten through grade five. This study allows educators to consider new ways the findings may be applicable to other settings, such as in other school boards or school-based settings (Creswell & Miller, 2000).

3.6 Data Analysis

The purpose behind triangulation of data was so I could put together a robust

story from the data. Jacob and Furgerson (2012) suggested that "researchers may use many different techniques, but at the heart of qualitative research is the desire to expose the human part of a story" (p. 1). For example, I sought to tell the story of those involved in this study along with their observations of SEL in action. As Gay et al. (2012) noted, the strength of triangulation is in "collecting information in many ways, rather than relying solely on one, and often two or more methods can be used in such a way that the strength of one compensates for the weakness of the other" (p. 345). The categories emerged from the data inductively and refinement occurred through the process of constant comparison (Coe, Waring, Hedges, & Arthur, 2017), where I consistently engaged in a cycle of review of new data in comparison with previous data.

In trying to make sense of the information, the data were coded, "because one of the coder's primary goals is to find these repetitive patterns of action and consistencies in human affairs" (Saldaña, 2015, p. 4). Coding of data occurred through many methods, but initially through in vivo coding, which attempts to honour the participants' words and voices in the process rather than the researcher's own interpretation (Miles et al., 2014). The data were ultimately analyzed the themes of the data and create what Yin (2013) referred to as "converging lines of inquiry" (p. 116).

Saldaña (2015) explained coding as "a heuristic (from the Greek, meaning 'to discover')—an exploratory problem-solving technique without specific formulas to follow" (p. 8). Coding revealed several recurring words and synonyms related to social and emotional learning from multiple rounds of review, not only from transcriptions and participant field notes, but from my research journal. The inductive approach is demonstrated, according to Creswell and Clark (2007), by an inquirer who works from

"the 'bottom' up, using the participants' views to build broader themes and generate theory interconnecting the themes" (p. 23). The participants' notes and interviews were used to create broad categories and then narrowed to very specific categories. Next, these data were referred back to the social and emotional categories that were outlined in the SEL *Look-Fors* provided to participants. The themes that emerged could be seen as applying to more than one area of social and emotional learning and were clearly related. The process of identifying the themes and grouping them is demonstrated in Chapter Four.

3.7 Ethical Considerations

Having assisted schools with garden installations and renewals in the past, at the district level in the Board of Education, I am a known proponent of school gardens. None of the schools that participated in the study, however, were schools I had worked with previously. I am a member of some of the Board of Education committees, but committed to participants verbally and in writing that their participation in the study would not be a matter of public record or shared with anyone at the Board. As part of the interview process, I ensured participants were aware of my involvement with the Board, as well as my bias before any research began. Creswell and Miller (2000) stated, "it is particularly important for researchers to acknowledge and describe their entering beliefs and biases early in the research process to allow readers to understand their positions" (p. 127). Thus, all participants gave informed consent. As Gay et al. (2012) explained, "researchers obtain informed consent by making sure that research participants enter the research of their free will and with understanding of the nature of the study and any possible dangers that may arise as a result of participation" (p. 21). Both tiers of ethics approval were

provided by Western University and the School Board.

3.8 Summary

      This chapter discussed this study's theoretical framework, research design, data collection, and participants. It concluded with a discussion of researcher reflexivity, credibility, transferability, and ethical considerations. Chapter Four contains information regarding prominent themes and sub-themes arising from the semi-structured interviews, along with the voices of the participants to support the findings.

Chapter 4

4 Findings

The purposes of this chapter are to discuss the results of analysis of the data collected to describe Principals, Vice Principals. Teachers, Special Education Teachers and Early Childhood Educators in school board in Southern Ontario perceptions of social and emotional learning that occurred in a school garden or during gardening experiences. This chapter highlights the prominent themes and sub-themes uncovered from the qualitative interviews in relationship to literature about the topics. An analysis and the findings of the responses to the semi-structured interview questions from the fourteen participants is provided. Their voices provide insight on both what are the benefits to having a school garden and the experiences of students within school gardens and gardening experiences.

Bogdan and Biklen (1982) defined qualitative data analysis as, "working with data, organizing it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others" (1982, p. 145). This process of data analysis was an ongoing touchstone during my own analysis, particularly the notion of what to share with others.

The process of determining themes from the data was ongoing and inductive. By continually immersing myself in the data, I was able to generate, themes and subthemes. The names of the themes were informed by the "study's purpose, the investigator's orientation and knowledge, and the meanings made explicit by the participants themselves" (Merriam, 2009, p. 184). The moment the first pieces of data were collected, I began mentally processing the data for themes, and I recorded those ideas in my field journal during that initial process of data analysis.

During the semi-structured interviews, participants referenced their field notes and observations while answering questions asked of them. The participants field notes and observations were later provided for my review. As themes began to emerge, each of the major themes were referred to during the interviews in order to capture the fullest meaning of the participants' experiences and observations. Although not all data fit into themes and subthemes that emerged. Certainly, there were observations or notes that did not "fit" into the established themes or subthemes, if they did not fit it was in some case specifically member checked and asked for clarification.

Obviously given the sample size and research focus, each participant brought with them their own life and teaching experiences, and their own knowledge and experiences of what social and emotional learning means to them. When refining data, participants' previous experiences with school gardens seemed to affect their ability to see the social and emotional learning that took place in the school garden. During the semi-structured interviews, participants who had never gardened with students often expressed their logistical challenges, such as difficulties in accessing the space to build a garden or getting gardening tools (e.g., shovels, hand trowels). These challenges were discussed before the participants were able to focus on the questions of the semi-structured interview.

Each participant's interview and field notes were analyzed through several lenses. One lens was an analysis of the recorded content—what was actually said without adding on the layer of why or what that participant's attitude was toward the topic might be-simply reading the words and thinking in terms of how they were said and what was said before or after. Analysis of all the written texts occurred again (i.e., transcribed

interviews, participant field notes, and researcher field notes) through the lens of attempting to determine the participants' attitudes toward the topic of school gardening and social and emotional learning. All the participants had a positive gardening experience during the time participants were asked to keep field notes, so that aspect was considered in analysis as well.

These lenses are in keeping with the theoretical framework of the research study, namely social constructivism. As outlined in Chapter Two, the data were revisited using the theoretical framework of social constructivism based on the work of many researchers, but primarily that of Vygotsky. His framework was present during data analysis, as participants' responses (including their observations and field notes) were filtered through the lenses of their relationships, not only to their students, but also to the school gardens, the school itself, and the community.

The participants were all situated within six urban schools, respectively. Thus, their experiences were necessarily experienced in relation to the various ethnic, cultural, and socio-economic backgrounds of the students in their classes. The experiences of their students and their own backgrounds were sometimes revealed in the data. This dimension was also thoughtfully considered and was part of the process of determining what the participants, through the data, were saying and revealing. Selective coding took place and categories were created and organized into the framework of a story.

Following an initial sorting of the data, the numerous themes (bold type) and their subthemes (regular type) that emerged from the data were as depicted in Figure 5. The depiction does not indicate any particular order or importance. Figure 6 demonstrates the connection in the themes and the overlap that could be seen.

Social and Emotional Learning	
Relationship Skills	Mixed age grouping
	Collaboration
	Parents
	Citizenship skills
	Community
	Partnerships
Self-management	Regrouping
	Choices
	Alone time
	Calming
Social Awareness	Language skills
	Peer conflict resolution
Decision Making Skills	Empowerment
	Focus
	Technical problem solving
Self-Awareness	Persistence
	Success
	Ownership
	Safe risk taking

Figure 5. Data themes from initial sorting.
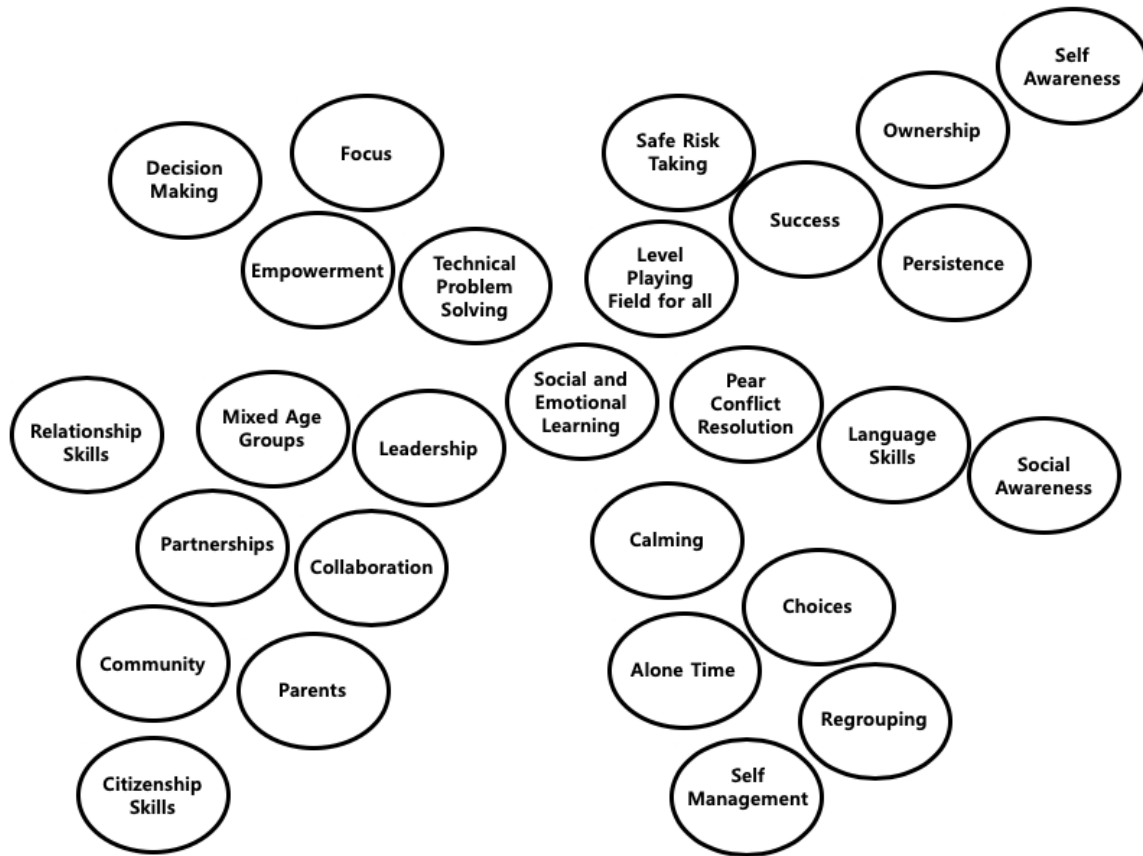
Figure 6. Data themes connections and overlaps from initial sorting.

This expansive list of themes clearly required further refinement and distillation. LeCompte (2000) suggested that, once patterns are identified, the work is then to see if the patterns are linked and how they relate back to the original questions being asked. The first level of analysis was via pre-set codes that were based on the five core competencies of social and emotional learning, which are: self-awareness, social awareness, relationship skills, self-management, and decision-making. This is what Miles et al., (2014) referred to as "deductive coding" (p. 81). These preset codes, although helpful, did not capture all of the data and required a refinement of the preset codes in order also to capture the emergent codes, a process of "inductive coding" (p. 81).

The refinement of the codes came through another set of analyses and examination to reveal the patterns. Throughout this, and through all levels of analysis,

analytic notes were taken to track my thinking behind the analysis. This was advised by Miles et al. (2014) who stated: "Think of a jotting…as an 'analytic sticky note'" (p. 93). All the notes were kept in my research journal, which I had begun prior to data collection and contains all the ways in which information was tracked for the study. Several different systems of coding for emerging themes and ideas were attempted—such as colour-coding and assigning numerical values. The research journal documented the refinement journey, as well as my thinking process behind each of analytic decision.

Adjustments were made as well as various attempts to organize and reorganize the information. This was often based on the research questions themselves, which were:

1.   In what ways, do school gardens strengthen and promote social emotional practices among students in kindergarten through grade five in southwestern Ontario urban schools?

a. Why do school gardens promote social and emotional learning practices for students.?

b. How can school gardens promote social and emotional learning practices for students?

The first two themes are related to the first research question. Those themes are:

a) Collaboration of students with others (e.g., students; educators present).

   i.   Interpersonal conflict resolution

b) Calming influence of gardens on students.

The final themes developed answered the second part to the research question, which are:

c) Student ownership of space by providing students with a chance to *own* the space where the garden or plants were located.

d) Experiencing the natural consequences of being responsible for a living thing.

4.1 Collaboration with Others

It is commonplace in education for students to be asked to work together to perform a task. However, in order for working collaboratively and cooperatively to be successful, this life skill needs to be developed in childhood. As such, these skills often need to be actively worked on throughout one's life. Collaboration is a "coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem" (Roschelle & Teasley, 1995, p. 70). The ability to work well with others—to collaborate—is a skill that not only has an impact on relationships, but it also has been shown to have an impact on a student's cognitive development (Sills, Rowse, & Emerson, 2016).

All participants in this study mentioned *student collaboration* as something they saw occurring in their school gardens in some form or another. Often the collaboration happened around a challenge or problem that the students had to work together to solve. A kindergarten team of a teacher (Teacher A) and early childhood educator (ECE 1) told the story of dirt being delivered for the new garden expansion at their school when they had not expected it. They had not foreseen there would be a need for wheelbarrows and shovels to move the dirt to where the raised bed gardens were located. The students were anxious to plant and wanted to move the dirt that very day, but the educators knew there were not enough hand trowels or shovels for everyone. One student's solution was to look around the room for anything that could carry the dirt in, and the result was a class of 30 kindergarten students moving a pile of dirt using yogurt and margarine containers in one afternoon. It was a success. As the ECE involved noted, "at first it was chaotic as the students realized there weren't enough shovels but I asked them how we could solve

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the problem and once one student mentioned the containers in the room, they all joined in." (ECE 1).

For some of the classes involved, the opportunities to collaborate presented themselves as a result of sharing gardens with other classes (i.e., there was a communal school garden rather than a garden used by just one class). Several schools deliberately paired older grade students (e.g., grade seven or eight) with a kindergarten class to provide greater supervision when an activity, like planting, was done. During one planting episode, Teacher Four (T4) noted:

> The kindergarteners were putting—you know, six seeds into a small pot and the
>
> grade sixes kept asking are you sure you want to do that? It was so great to see
>
> them working with those younger ones rather than just telling them what to do.

The older students' ability to ask questions rather than to solve the problem for the kindergarten students is an example of successful learning together, rather than in isolation. The fact the grade sixes did not force their advanced knowledge on the younger ones, but rather asked them if they were sure they wanted to do that, also demonstrated the grade sixes had learned or were learning successful collaborative practices.

Collaboration does not have to be teacher-directed in order for it to occur. A dilemma for one class in this research was that a garden was not big enough for each student to have their own individual plant in the garden. This was a very common concern, i.e. not enough space for the size of the class, when school-based educators think about planting a garden with an entire class. In a grade two class, the teacher worried that not all the children would have their own plant, as their room only had one raised garden bed for the entire class. She was surprised when a few of the students came

up with their own solution to this problem and shared it with her the day before they were to plant outside. Teacher 4 stated, "their idea was that one child would dig the hole, another one would plant it a little bit, and then another child would come along and plant it deeper." Teacher 4 noted that the students' solution allowed three children to claim the plant as their own and solved the problem of ownership in the garden that she was worried about. And while this solution was not teacher-directed per se, it was teacher-facilitated; the young students were proud to have been able to help solve something their teacher was worried about. This was an empowering episode for the students and an experience in collaborative leadership for the teacher.

At School E, where the garden was shared, there was a great deal of confusion when plants started to sprout, and they did not appear to be what was planted. The students in grade five were upset about this and looked online to see what the seeds they planted were supposed to look like when they starting to grow. Their Vice Principal (VP2) explained that a core group of students printed out the pictures of the plants and during recess matched the correct ones to the seeds, creating a map of the garden. The VP2 shared the map the students created as they asked for a picture to be taken so it could be printed out and placed where everyone could see it at the doors exiting the school.

In another class, the indoor growing system required regular monitoring with respect to adjusting shelves and grow-light levels. As special education resource teacher (SR1) explained:

> One student was trying to do it herself and it really is a two-person job. It took her awhile but eventually she asked one of her classmates to help her to raise the lights and lower the shelf. That is big for her to ask a peer for help rather than me.

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Gardens present students with a very clear and simple form of logical cause and effect with respect to their actions and the consequences arising therefrom. Many of the participants shared challenges with students overwatering, particularly in the younger grades, and the resulting impact on the plants. In one class, despite a schedule being created, overwatering was occurring. One of the students in the special education resource room teacher's (SR2) classes became quite upset at so many of the plants dying or not sprouting, because of the overwatering issue. A discussion and exploration resulted where experiments were performed regarding the determination of what the right amount of water is to give a seed that is trying to grow. As SR2 remarked: "This student was really upset about the plants dying but she and her classmates talked about how they could figure out what was the right amount." The result was a tally sheet being created of how much watering was occurring each day.

4.2 Interpersonal Conflict Resolution

Conflict is inevitable. Especially when two or more people are together and they need skills to resolve the conflict in a successful manner. This is so all parties involved are satisfied. Conflict resolution is an important life skill (Jones, 2004; Shanker, 2010). Gardens can provide an opportunity for a demonstration of these skills, but can also create conflict as one participant, early childhood educator B (ECEB) observed, "the garden was so popular that being close to it or being the one who was doing the watering, for some of the children it became a trigger for arguments." In some cases, intervention was needed and an educator needed to facilitate problem solving. This issue of conflict was not something that was anticipated with having the garden, but could present a real dilemma for those thinking about incorporating a school garden. The participant (ECEB)

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suggested that perhaps conflict arose because it was not only new, but also something most students in her class had never experienced before. This lack of experience was due to the socio-economic status of the area. However, as the teacher observed, the students clearly saw the value of the garden. These conflicts, arising from these experiences, could provide discussions about community gardens, which some urban areas have adopted when it is not possible to garden at home.

In one class, there were some mislabeling of seedlings that had occurred. As the plants got bigger it was evident they were not all the same plant and not what each student had thought they were growing. On one particular day, SR2 observed some of the students thinking that it was one student in particular that had mislabeled the pots, and so it was apparent to others that it was these students fault the mislabeling had occurred. SR2 said she had to really stop herself from telling them to stop it and instead, she stated: "I asked only *why* questions and it was amazing to see them work through this HUGE problem that was taking over our room and was so emotional for all of them."

Almost all the participants shared their observations that students came together around the garden particularly around planting. The tasks perceived as mundane— watering and weeding—were less popular with all the students, but frequent conflict arose around watering. In one kindergarten class (School B), the watering became an issue, so the school-based educators created a schedule. However, conflict still arose, mainly around who accomplished the watering best or worst. The educators in the room sat down with all the students and said they noticed this was a problem and asked the students what they could do to solve the problem. The students collectively came up with the solution of marking the watering can so that the same amount of water would go on

the plants each time.

Jensen-Campbell and Graziano (2001) offered interesting insight into the importance of conflict, because "conflicts...are not exclusively negative events. Many researchers see conflict as important to social development" (p. 324). Many of the participants agreed with this theory of conflict as the garden and gardening activities provided opportunities for problem solving in a safe space. In T4's class, a participant noted issues were arising regarding whose turn it was to do things related to the indoor grow racks that were used to start the seeds. The participant quickly noticed students saying things like: "First my turn, then your turn, then hers, then mine, then yours again, then hers." One of the special education resource room teachers (SR2) expressed hope that what she was seeing with regards to problem-solving behaviours between students in her room with the garden were also being observed when that students went back into their regular classroom. She stated: "It gives me hope that they can take care of something and nurture it and express themselves about their plants and that it will transfer over."

Participant ECEB wondered if some problems created when students thought of something in the garden as theirs. After she reflected on this, she suggested that it provided an opportunity to talk about ownership in a collective space rather than thinking of the plants as something to fight over. She noticed that for some students this helped with their ability to solve problems in the kindergarten classroom, beyond just the caring of plants.

At School F, Teacher 6's grade four students helped kindergarten students in their garden. Teacher six noticed when the kindergarten students would argue, the grade four

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students would step in and help them to resolve their conflicts. T6 shared:

> I was really impressed at the modeling of language happening by my students to
> the kindergarten kids. I also noticed that it really decreased some of the clique
> stuff that had been happening because they had to work in the kindergarten
> groups not their own.

Many of the participants noted that there were not enough shovels or trowels for students to each have their own. Many times, the school-based educators anticipated this problem and had strategies to work around this very practical and real problem when funding is an issue. One participant (T5) stated:

> It was such a busy time that we didn't even think of the idea that there was not
> space enough for all 28 of them and certainly not enough shovels for all of them.
> The ones that really, really wanted to, just sort of worked it out and said things
> like I get it next or I'll watch but then it is my turn. It was really surprising
> honestly.

4.3 Calming Influence

Ontario government publications, such as *With Our Best Future in Mind: Implementing Early Learning in Ontario* (2009), *Growing Success* (2010), *Every Child Every Opportunity* (2010), and *Think, Feel, Act* (2013) have all brought the topic of self-regulation into most conversations regarding the education of children in early learning and school settings. Self-regulation is an important part of social and emotional learning and it is a frequently misunderstood topic. Stuart Shanker (2012)—considered a leader in the field of self-regulation—offered a powerful statement on the importance of students being calmly focused as part of self-regulation:

> When children are calmly focused and alert, they are best able to modulate their

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emotions; pay attention; ignore distractions; inhibit their impulses; assess the

consequences of an action; understand what others are thinking and feeling, and

the effects of their own behaviours; or feel empathy for others. (p. 25)

In School B, the educators decided to put the hydroponic grow racks in the

library, so that all the students could have access to this exciting part of the gardening

cycle. Vice Principal 1 (VP1) noticed a change in the students when they came into the

library during her supervision. She noted that when students used to come into the library

from their classes, there was a bit of rowdiness as students shifted into the room to see

what was on display or other displays in the library. However, when the students entered

the library with the plants, she observed the students differently: "There is just a lot of

quietness around the energies and the volume when students are around the plants."

At School B, the special education resource room teacher (SR1) noticed different

student activity in her room. With the plants present, she noticed, "something that is

100% spontaneous is that when we have independent reading, I see them cozying up to

the garden rather than going on iPads." As we talked about why she thought that was, she

indicated she asked one of the students why they chose to go next to the plants and the

student replied, "it's nice to sit in a green area because it feels quieter."

At School D, T5 portrayed his students in the garden in the same manner, as being

calmer. He described the following: "There is more freedom in that space and along with

the natural elements seemed to relax the students. They did not need to sit still to be

engaged." One participant (VP2) described a particularly powerful situation involving a

student who had behavioural concerns that often required his assistance. One day, this

student was struggling with a transition in the day and was on the edge of becoming

violent. The classroom teacher called the VP2 to assist. The VP2 recounted the incident and said, "I offered to take him outside as a choice he could make and we had a good talk about being calm and he said the garden calmed him down." The VP2 suggested to the student this was a strategy that could became part of the choices the student could make when he could feel himself ready to explode. This new choice seemed to work for the student and his classroom teacher.

Teacher 6 (T6) noted in their observations that their class—being in the green space—allowed some students to participate in something they never would otherwise experience. She said that in her school district, there were many housing units and so there were no spaces for gardens. The participant (T6) mentioned that she thought the students seemed, "so calm in the space, because it was different for them and so they think of it as special."

A participant at another school (School A) echoed a similar statement—of students not having access to gardening spaces in their homes—and that perhaps that was what contributed to the positive impact of the garden. Participant ECEA stated, "many of the students talked about visiting other family members' gardens, but that they did not have one at their homes." Both the ECEA and T1 in the same kindergarten room shared the notion that students seemed to think of the garden as a special place and that discussions often happened in the garden. Further, their students never seemed to get rowdy, because, as one student pointed out, "if we run around and act all crazy, someone is going to step on the plants and kill them."

At another school (School D), one of the participants (T5) proposed that because the garden allowed students a sustained and ongoing opportunity to work and interact

with living plants, "it teaches students to care for and nurture plants, which are the skills I want to see them demonstrating with each other, and I saw that increasing since we started gardening."

At School B, some of the planting was done with grade seven students assisting the kindergarten students with planting and maintenance in their garden. Participant ECEB relayed this observation as they took note of the students' remarks: "We are basically bringing something to life and taking care of it until it is full-grown. I hope a big watermelon grows on this plant." Participant ECED offered the observation that in their kindergarten classroom, "students often chose the tranquility provided by the garden as it allowed them to experience some respite from the often fast-paced environment of the classroom."

At School A, T1 related that a discussion about plants had turned into a discussion with a group of students about body language. Teacher one said that a few of her students were noticing the plants they were growing in their classroom to be moved outside were "hunched over and the leaves were mushed." The teacher (T1) asked the students what they thought it meant and what the plants needed. One of the students said that when she was tired she walked like that and modeled walking all hunched over. The T1 said, "a light bulb went off for me that we could talk about body language and how our bodies can tell others how we are feeling and thinking. I was so excited to tell my team teacher about that realization for them and me."

Many of the participants in the study articulated that they did not understand all the facets of social and emotional learning that were provided to them. Several educators, particularly in Kindergarten, remarked they only considered SEL in relationship to self-

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regulation. One participant suggested that SEL was "Not really something I learned about in school and in my career, there have been lots of conversations about bullying but self-regulation was a new one" (T1). Another participant said that "SEL as was explained in the Look Fors" was not what I thought it was going to be and I sure didn't think it would be seen while the kids were gardening" (SR2).

4.4 Student Ownership of Green Space

There are many definitions of student ownership that exist in education, most consider student ownership as having control over content or learning in the learning space (Rainer & Matthews, 2002). For this study, a more suitable definition is "students' ownership is based in their abilities to use intentional action to modify and/or give significance to their world" (O'Neill, 2010, p. 9). When we examine education, how many opportunities are presented to students that allow them this sense of ownership, particularly in grades kindergarten to grade five? Many of the participants in this study discovered that often a school garden provided that missing or needed sense of ownership to their students. At School D, where a teacher and early childhood educator in a kindergarten class who participated in the study from the same room, offered they noticed their students would often tell visitors "These are our plants in our room".

At School B, many of the participants noted there was an increase in school pride as a result of the indoor growing system and outdoor gardens. The school often experienced the vandalism of other projects left outside over the weekend, but no vandalism was noted while the various classrooms were involved in gardening. As T3 remarked, "I think that students are going home and telling their families and friends about the school gardens and so it is connected to them so others think differently about

vandalizing the garden or school." Those participants' observations were not isolated; T2 noted, "they are invested in it—they want to see the plants do well because it feels important to them." Another participant (T3) at the same school suggested, "many of these kids have so little, that a garden feels like a lot to them. They feel like it's something special they get to do." Both special education resource teachers (SR1 and SR2), despite being at different schools, had very similar experiences with the students in their classes when it came to a demonstration of a sense of space. They suggested that involving students in the gardens in their rooms gave them a chance to be in charge of something, and they were trusted to take care of the plants that would be planted or used by the rest of the classes.

In one school, the water was not in their room, so to water the plants the students had to go down the hall and fill water bottles (to fit under the taps) and bring them back repeatedly (due to the number of plants). Participant SR1 kept waiting for them to lose interest, and when she asked them why they liked the indoor grow towers one of her students answered, "Miss, we have to keep the plants alive for the whole school." This was a point she had not really considered. At School C, the participant (SR2) explained,

> most of these kids rarely get leadership opportunities, to be able to be in charge of
> something that they put together (they had a hydroponic grow tower); they
> plant—they keep alive to give to another class to cook with, it just doesn't
> happen."

In one school, where the students had to dig up an area of the playground to create the outdoor garden, allowing the students the opportunity and control to intentionally change their space was very powerful. At School F, the effort to turn the dirt over and prepare the

soil was one that the teacher approached cautiously, as many other school-based educators had told him that it would not go as he envisioned and that someone would get hurt. Even the principal at the school questioned the wisdom of giving students shovels, hoes, and rakes. The teacher (T6) had asked the students for input into the sizing of the gardens and they had marked it out. He gave a demonstration about how to use all the things he had brought in and hoped for the best. The participant (T6) described the construction of the garden as follows: "I was so worried for them to start because so many were against this idea but the kids worked together so well, it was shocking." He also stated, "It is only the good kids or the good grades that get to do special things, I wanted all the kids in my class to have a chance not just some."

Participant (T5) made note of the following exchange with a student, who had transferred schools mid-year and had not developed the relationships they hoped she would. The student said to T5, "my plant is growing baby leaves and I forget what it will be. If you smell it, it smells like a tree. Like the trees at this school and at my old school, I think they are the same kind." One of the nearby students asked her about her old school's trees and a weeklong investigation ensued about trees and where do schools have the same kind of trees planted.

A teacher (T4) at another school had an insight into the success of the school garden in her school (School C). She stated: "Some kids need an outlet that isn't sports and isn't academics and is something that no one is an expert in because they are all learning." A similar theme was noted by VP2 at his school. "I think that a garden levels the playing field, they aren't being tested on it and they aren't being marked so it is all on them to take care of it or not."

Killeen, Evans and Danko, 2003 offered on engagement that "to increase engagement, students must have a personal stake and belief that what they are doing is worthwhile" (p. 251). seems to have been supported by participants' experiences in the school gardens. Some of the schools, which had gardens or gardening projects, were growing things for an additional purpose, such as bringing plants to a nursing home or the produce grown to be used for a pasta day. At School B, many of the plants were being grown for a school luncheon. One participant (SR1) said her students often referred back to the school luncheon as a reason to take care of the plants and monitor their growth. She said, "the growing of plants was where their relationships were positive and they could focus better. I think part of it was there was no risk to doing anything with the plants—no one was the smartest."

Participant ECEA noted that her students were always excited about the garden, but even more so when they realized they were using the planted herbs for an event that was going to take place in the classroom (a make your own pizza day). She noted: "There is a core group of boys, four of them, that are so invested and are very engaged. Every single day they are monitoring and telling anyone who comes to our class about them."

In one of the kindergarten classes (School B), many of the students decided that they needed to make books about their plants and the garden. A group of students decided that everyone in the school should read the books, so when they saw their garden outside, they would know about the plants and the names of the plants, but, most importantly, who planted what in the garden. A plan was devised to put these student-created books in the school library so that everyone could read them. The school librarian reported to the teachers that she could not believe how many students in other classes would repeatedly

look at the books created by the kindergarten students. One of the vice-principals, while providing classroom coverage said:

> I loved coming into the rooms when they were gardening. To hear their questions, to see kids really excited about something—even the grade eights. When you work with kids who have a tough time at home, you want to see those moments for them at school. But more than that to see some of the teachers really running with what the kids were saying was the most exciting.

4.5 Experiencing Natural Consequences

Natural consequences are outcomes that occur as a result of behaviour that are not planned or controlled (Pryor & Tollerud, 1999). Natural consequences can be a part of social and emotional learning. For example, if you physically assault someone you should not be surprised if they do not want to associate with you. A consequence is a result of actions or choices, and in the case of school gardens, there were many opportunities for consequences for the participants and the students in their classes. As T6 noted:

> Seeing that some of the plants have grown in and some haven't. Yeah
>
> like some of ours are like the whole shoots just dying and you're
>
> thinking so now it's like what happened? I just let the students figure it
>
> out and their ideas and answers were so not what I expected.

The educator allowed the students to see the results of what was or was not happening, and allowed the discussion to occur where the students could hypothesize why the plants had died or were not thriving.

The student in schools who had gardens outside noticed what happened in the space over long weekends, such as naturally occurring events, like not enough water for

the plants, or too much rain over time, or the growth of weeds. After a long weekend, one

of the classes in School A went to the garden only to see that most of the plants had

wilted or appeared to be dead. The early childhood educator (ECE1) shared that "some of

the children were actually crying because the plants looked dead." The teacher–early

childhood educator team allowed the students the opportunity to examine the plants and

the dirt. Some students wanted to water the plants, while others wanted to pull them all

out. A small group of students seemed the most invested, so the educators allowed them

to try out a few of their ideas, which prompted the educator to note, "some of the plants

were dead; some came back; some half died it's an ongoing exploration I think" (ECE1).

It was important for students to experience natural consequences. SR2 shared:

> We had talked to them about not throwing the seeds all in one little hole
>
> and then we've got you know the seedlings coming out. Yeah so there
>
> was lots of talk about that and what it should look like in the pot and
>
> there was three, four or one in a corner of the container and some said
>
> they wanted to see what would happen. We let that happen and for some
>
> they saw the seedlings couldn't survive because some of the plants died.

Seeing the results or implications of one's choices and action, can be considered part of

the bigger picture of social and emotional learning. As Shanker (2012) identified:

> When children are calmly focused and alert, they are best able to
>
> modulate their emotions; pay attention; ignore distractions; inhibit their
>
> impulses; assess the consequences of an action; understand what others
>
> are thinking and feeling, and the effects of their own behaviours; or feel
>
> empathy for others. (p.3)

4.6 Summary

      This chapter described the findings from data collection, which included participant interviews and observations. These data were highlighted in order to give voice to the participants' experiences and observations during their experiences with school gardens.

Chapter 5

5 Discussion

This chapter outlines the summary of the findings and interpretation of the results in the context of other relevant studies and research. As well this chapter reviews findings from the analysis of the data collected to answer the research questions and draws conclusions in light of the purposes of the study.

In this interpretivist exploratory case study, the analysis of the research demonstrated that school gardens and gardening experiences have the potential to strengthen and promote certain knowledge, attitudes, and skills of social and emotional learning for students. In a broad sense, schools gardens and gardening experiences contribute to building students' skills in relationships, self-awareness, social awareness, decision-making, and self-management.

5.1 Summary of Findings

The promotion and strengthening of social emotional knowledge, attitudes, and skills occurred in school gardens not only in the planting and creation of a school garden, but also in the maintenance of the growing space. Specifically, it was shown that students in school gardens are more likely to collaborate with others (and practice interpersonal conflict resolution), experience a calming influence of the garden space, and experience a sense of ownership of the green space in the school.

The participants of the study were those who worked within a local school board in Southwestern Ontario, consisting of educators who were classroom teachers, early childhood educators, special education resource teachers, and school administrators, such as vice principals and principals. Data collection came from multiple sources including

participant interviews, participant field notes and observations, and my own observations and field notes.

The most significant source of data came from the participants who were able to observe students within the school garden settings over a period of four to six weeks, respectively, after being provided with a schedule of social and emotional learning (SEL) *look fors*. After the data were gathered, it was coded, and analyzed. The resulting information from transcribed interviews (including member checks), participant field notes, and my researcher's field notes, created a triangulation or convergence of sources (Creswell, 1998). This triangulation and coming together of multiple sources provided a scaffold for data analysis.

The data analysis revealed that school gardens are able to strengthen and promote some social and emotional knowledge, attitudes, and skills by providing opportunities for students to collaborate with others. The opportunity for collaboration offered a chance for interpersonal conflict resolution between some students and the likelihood of experiencing natural consequences presented itself, in some cases, due to the collaboration that occurred. School gardens allowed students to gain a sense of calm while involved in gardening and gardening activities.

According to the results of this study, how a school garden and gardening experiences are able to promote social and emotional learning was by allowing students the freedom to take ownership of the gardening space. The ownership of the space represented itself through student care and maintenance of plants along in the growing space. When the educators, involved in the study, allowed students the space and time to experience natural consequences of their actions while gardening, students experienced

the full effect of their actions and were allowed to experience the consequences of their subsequent actions.

The results of this study can be used to promote the inclusion of gardens within schools and can provide direction for implementing school gardens to be leveraged the social and emotional learning for children.

5.2 Interpretation of Findings

Important themes emerged from the analysis of the qualitative data. In many ways, the research and analysis confirmed my assumptions regarding the importance of outdoor experiences—specifically gardening—for children. Having conducted this research, I believe in the value of outdoor learning at all levels of learning for students and that outdoor learning is an untapped resource within most boards of education.

The potential of outdoor experiences to be intentional learning experiences is well-known amongst many Ontario educators and administration. But the potential for a wider range of learning, such as social and emotional learning that can be supported with experiences in the outdoors, was explored in a deeper manner through the eyes of the educators in this study.

Gardening is, at its heart, a simple process, which involves basic elements of dirt, water, sun, and seeds. However, it has become a complicated act in schools, and for those who participated in this study, they were offered an opportunity to experience this process with their students who, for the most part, did not have previous experience gardening in their out-of-school lives.

Although gardening offers many benefits to students and adults, the social and emotional learning that was demonstrated via this study, had different benefits than had

been anticipated by the participants in the study. One of the benefits of the study that was not anticipated by participants was the broader learning opportunities provided by school gardens and gardening experiences for students. As one participant (SR2) offered during the semi-structured interview:

> When I first got the email about your study I thought there would be activities provided for us to do or something. When I read it more, I thought she is crazy if we don't set up an activity for social and emotional learning during gardening, it isn't there. And as I watched, it did happen. I never would have expected that.

Some of the schools that participated did not have any specifically quarantined gardening space, so the experiences truly began from the very idea of a garden through the planning and implementation of a garden. Even something as basic as putting dirt into a pot had learning potential for those who were willing to allow students the time and space to do it. The act of allowing students to select and plant seeds or seedlings prompted discussions, not only about the plant, but about living things, and, for some educators, they directed these discussions back to the care of others and care of oneself. Although the parallels seem obvious between caring for a plant and caring for oneself, it was not one that was anticipated by the participants: considering the elements needed to care for a plant as equal to caring for all living things and systems. When water, for example, was provided in abundance or scarcely to the plants, students saw the direct results of this action on the plants in the garden. In some cases, educators were able, to relate this idea to when a living organism, such as a human, is given too little water. What

are the effects of that on a human? These applications to personal care were powerful for both the children and the educators.

What I found surprising was the participants' preconceived notions about the characteristics of social and emotional learning that were not related specifically to compliance, but rather a broader range of skills and abilities. This idea of social and emotional learning being something more than following the rules was a topic that both the participants and I were able to discuss and explore in a deeper more thoughtful manner. Self-regulation is generally defined as, "the ability to control or direct attention, thoughts, emotions, and actions to situational demands in order to reach important personal goals" (Slot, Mulder, Verhagen, & Leseman, 2017, p. 2). Due to many of the participants believing this was about controlling actions (i.e., not acting out), exploring the bigger topic of SEL in their thinking and practice resulted in some deeper lines of discussion.

Although five prominent themes emerged from the analysis, there were many subthemes that also emerged. The main five main themes were: relationship skills, decision-making skills, self-awareness, social awareness, and self-management. Using Russel and Ryan's (2003) *key words in context* technique, the researcher identify key words from data and then systematically searched through a text to find all instances of the word or phrase. By adopting this technique, it illustrated that peer conflict resolution, alone time, focus, and language skills could also be related to any of the five themes. These subthemes emerged as part of the larger topic of social and emotional learning.

The most complex theme that emerged was that of relationship skills. Taking apart the element of what skills and abilities a student needs to demonstrate relationship

skills proved challenging, as the discussion with participants complicated the understanding and exploration of what they considered relationship skills. The working definition for social and emotional learning puts forth by the Collaborative for Academic, Social, and Emotional Learning (CASEL) (2018) is defined as,

> the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions. (p. 18)

As recently as March, 2017, however, in the *Oxford Research Encyclopedia of Education*, Sokal and Katz (2017), citing Hoffman, asserted that "there is no universally accepted definition of social emotional learning" (p. 67). The working definitions for SEL have both cognitive and emotional components and the two seem to compete for prominence depending on what area one is exploring. That overlap comprises agreement that SEL is an acquisition of abilities and knowledge involved with self-regulation of emotions, setting and achieving goals, feeling empathy for others, maintaining positive relationships with others, and engaging in productive problem-solving and decision-making.

The in-depth analysis of this pull between cognition and emotion has led to the re-examination of Bronfenbrenner's (1979) work, specifically in that he argued children's development could not be considered independently from the multi-leveled social, material, and cultural context in which the development took place (Bronfenbrenner, 1979; Kyttä, 2003).
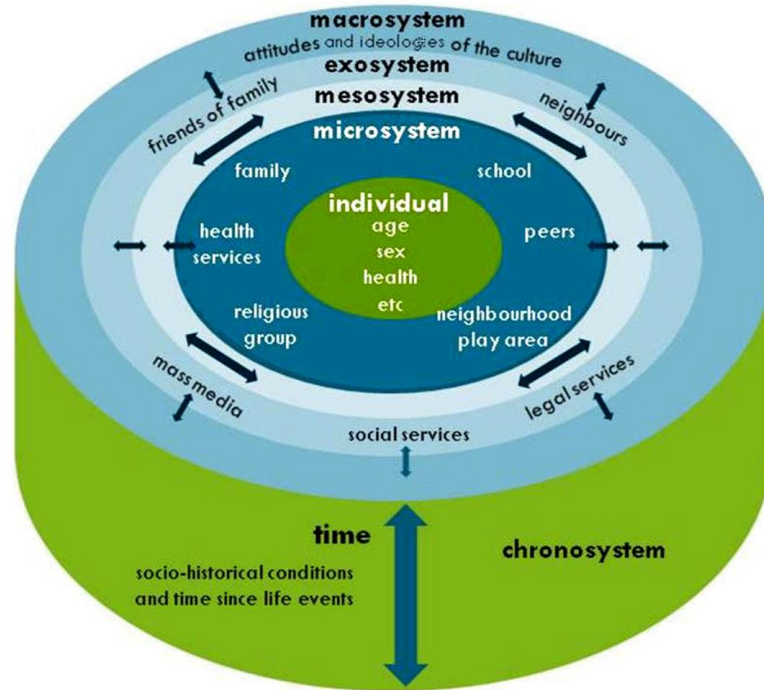
Figure 7. Bronfenbrenner's social-ecological model of child development (Sallis & Owen, 2006).

The Sallis (2006) model of Bronfenbrenner's socio-ecological model of child development incorporates broad categories of intrapersonal and interpersonal variables, including an individual's perception of environmental factors, such as safety and convenience, along with objective characteristics of a behaviour setting (Sallis et al., 2006). In my research study, the idea of school gardens fits in with Bronfenbrenner's model of understanding with respect to how a school garden potentially fits into the life of a student.

Bronfenbrenner's ecological approach to the importance of an individual's interactions with the world within the socio-cultural environment, fits into and is considered by many within educational psychology, to be an extension of Vgotsky's sociocultural theory (Annan, 2005; McCaslin & Hickey, 2001; Stetsenko, 2011).

Vgotsky's sociocultural theory was the theoretical and conceptual framework for this study, and it not only guided the research design, but also the practices of the researcher as well. Vgotsky and Bronfenbrenner both offered that development is the result of a dynamic set of reciprocal interactions, rather than a linear process. Annan (2005) stated their theories thusly: "Support for a developing person depends on the existence and nature of social connections between settings and the experience of the situation by significant others" (p. 138).

There were many examples offered by the participants that demonstrated how the learning of the students often needed the adults in the room at the time (i.e., educators or administrators) to ask questions to promote the social connections through their facilitation of learning rather than letting these chances slip by.

5.2.1 Social and emotional learning.

The results of this study were broadly consistently with themes in the literature as it relates to team-building and greater social connections for students within schools that have gardens (Block et al., 2012; Dyment & Bell, 2008; Laaksoharju, Rappe, & Kaivola, 2012; Miller, 2007; Passey, 2014). The gardens used in my study demonstrated that in a school garden, collaboration takes place between students who might not otherwise ever interact with students in other grades. Specifically, this was observed when school-based educators consciously paired higher and lower grade level students together. As one participant (T1) offered, "after the grade sevens helped the kindergartens in their garden, they would come over and talk to each other when they were outside. The grade seven students were also the ones who wanted to be lunch buddies." The work associated with a garden—that of preparing the soil, planting, and maintaining the garden—can be a

solitary activity, but when it is facilitated in a manner that encourages connections, such as inviting other groups into the class, it promotes a sense of community and collaboration. This was demonstrated to be the case in some of participating schools. By exposing students to people who are different from themselves, and providing opportunities for them to engage with others and to think about those people's needs and behaviour, students may develop both an increased empathy and a greater ability to regulate their own behaviour and emotions (Femia, Zarit, Blair, Jarrott, & Bruno, 2008).

Creating safe spaces for students to model their problem-solving skills was demonstrated in the school gardens that were involved in the study. Specifically, using the natural consequences that arose from some of the experiences of the schools in this study promoted problem-solving. Situations such as a school sharing a garden between classrooms or having to share tools between children in a class all presented opportunities for successful problem-solving between peers. Yu, Fan, and Lin (2014) suggested that when students have opportunities to practice problem-solving in a real-life context, the ability to solve problems will carry over into other areas of their life, creating what they refer to as "flexible problem-solving abilities" (p. 1378).

The SEL skills, knowledge, and attitudes that were demonstrated in the school gardens in this study offer a glimpse into the unique learning opportunities that have a much larger scope than most people imagine. What is initially presented as "improving students' social and emotional competence" according to Ragozzino, Resnik, Utne-O'Brien, & Weissberg (2003), "advances the academic mission of schools, while also ensuring that they meet their broader mission of producing caring, responsible, and knowledgeable students" (p. 170).

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Dewey (1916) suggested that one of the aims of school education should be to support the development of the skills and knowledge amongst students, which are needed for responsible and caring participation in a democracy. Cohen (2006) characterized essential skills needed for student participation in a democracy, and some of these skills were demonstrated in this study, specifically the "ability to be flexible problem-solvers and decision makers, including the ability to resolve conflict in creative, nonviolent ways" and "collaborative capacities, e.g., learning to compromise and work together toward a common goal" (p. 204). These are no small things. Both of these themes presented themselves in this research study and are noteworthy because they are skills important in relationships with others and society.

The idea that collaboration does not have to be teacher-directed in order for it to occur was witnessed in school gardens and gardening experiences during the study. Collaboration has several components such as working towards a common goal; joint work and voluntary participation, although this is not an exhaustive list or a technical definition, it does offer some of the traits that were reported by study participants.

5.2.2 School gardens.

One of the themes that presented itself in the study was the notion of gardens being a place of calm or a retreat for students. This topic of calmness is usually referred to in the literature in broader terms, such as occurring in natural areas (Chawla, Keena, Pevec, & Stanley, 2014; Cleaver, 2007; Korpela, Hartig, Kaiser, & Fuhrer, 2010; Lohr & Pearson-Mims, 2005; Louv, 2008; Taylor & Kuo, 2009). While there is scant research available that specifically examines school gardens as a place of calm for students (Moore, 1996; Taylor, Kuo, & Sullivan, 2001), the results of this study demonstrated that

students tend to gravitate to gardens, consciously or unconsciously, because they made them feel calmer. Students who were able to articulate this experience fits in with a larger discussion related to self-regulation. As Shanker (2010) stated: "In the simplest terms, self-regulation can be defined as the ability to stay calmly focused and alert, which often involves – but cannot be reduced to – self-control" (p. 15). Some of the participants indicated that their students said it was the *greenness* that attracted them to the garden, and others offered it was because it was quiet.

Much of the research on people preferring green spaces to other spaces is related to adults, and specifically, how it improves cognitive functions (Akpinar, 2016; Tennessen & Cimprich, 1995; Wells, 2000;). In this study, exposure to natural settings reduced stress in students as reported by Participants (SR1, ECE1 and T4), and the reduction of stress when students are exposed to nature is supported by a variety of studies (Swank & Swank, 2013; McCurdy, Winterbottom, Mehta, & Roberts, 2010). Research related to school gardens and students who were struggling (e.g., in a juvenile detention center; students at-risk) is a gap in the literature on this topic and is one this study contributed to in a modest fashion.

The participants in this study observed ownership of space, or the sense of ownership of space, in the school garden as something that happened particularly for children who had teacher-identified special needs. Both Educators who were involved with children in Special Education Resource Rooms at different schools, where students often had behaviour plans or learning disabilities, suggested that school gardens gave students with needs something that does not often present in the "regular" classroom, and that is that the plants and gardening spaces was "theirs" to care for and not anyone else's.

Killeen et al. (2003) stated that a "sense of ownership is hypothesized to play an important role in learning engagement and ultimately may enhance a student's higher order thinking skills, specifically, creative problem solving" (p. 252). Development of that sense of ownership of space is a behaviour that was demonstrated in the school gardening experiences within this study.

Students who teachers identified as having higher identified needs were often observed as experiencing the calming influence of the garden on their mental state, a topic under-represented in the literature. Students who had higher needs (attention deficit hyperactivity disorder (ADHD)—learning disabilities being more prevalent) (SR1, 2018) often found school gardens and school gardening experiences to be places that supported social and emotional learning. It was with students who had higher identified needs that a sense of ownership of space and opportunities for safe risk-taking were consistently demonstrated, as reported by their educators. Being in charge of the growing and caring for plants in gardens seems to be a particularly powerful experience for children who have higher needs, as reported by research participants. Ohly et al., (2016) supported this participant observation:

> School gardens appear to have particular benefits for children who have complex needs (behavioural, emotional, or educational) and do not thrive in an academic environment. The evidence suggests that these children may be able to express themselves better in the garden, leading to feelings of calmness, self-esteem and success. (p. 34)

The sense of responsibility to care for the plants seemed to translate with many of the students as an opportunity to express an interest into caring for other living things: "I

think gives me hope because if they can take care of something and nurture it hopefully eventually that will transfer over into their interactions with other humans not just plants or animals" (SR1). This ability to care for another living thing is a skill often associated with empathy, where empathy is another way of knowing others and being able to know others' feelings is an important task associated with social and emotional learning (Lieberman, 2007). This skill fits into the larger picture of social and emotional learning which item is articulated in Ontario Ministry of Education publications (e.g., *Learning for All*, 2013b; *Achieving Excellence: A Renewed Vision for Education in Ontario*, 2014*; 21st Century Competencies*, 2016).

In addition to outlining assessment and instruction strategies and approaches, *Learning for All* (2013b), also stated supporting students in the classroom is important to understanding their social and emotional needs. A competency set out in the province of Ontario's document *21st Century Competencies* (2016) is the notion of skills related to social and emotional learning, what some still refer to as *soft skills* that are valued by employers and educators alike.

As Robinson and Zajicek (2005) asserted, "gardens are a place where students can work together, make decisions, manage problems and gain a sense of responsibility" (p. 456). Decision-making, collaboration, and a sense of responsibility were all echoed in this research study as themes that emerged and fit into the larger context of citizenship skills as well as the current body of research.

A topic that emerged that was not related to social and emotional learning, was the challenges of obtaining permission of any kind of outdoor learning space. In addition to the challenges of obtaining permission was finding the resources and funding, other

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than from parents. One participant seemed to state, succinctly, what others articulated:

"Our parents can barely meet their kids' basic needs, they don't have money to help build

any kind of outdoor garden" (SR2).

5.3 Summary

This study asked participating educators, through semi-structured interviews

using their own journals and observations about their experiences with school gardens as

viewed through the lens of social and emotional learning. This research study set out to

explore how school gardens promoted specific social and emotional learning skills in

students, and may be of interest to superintendents in boards of education in Ontario as

they seek to incorporate social and emotional learning into the programming of their

schools. Social and emotional learning is currently a valued topic within Ontario Ministry

of Education publications, therefore, considering unique and alternative ways of

incorporating and promoting social and emotional learning is being considered. The

implementation of school gardens is proven, through this study, to be a beneficial way to

promote SEL opportunities for students.

It is my hope that this research will begin a conversation with local and provincial

school boards regarding the importance of school gardens and the need for their

consideration into school planning. Some school boards are well ahead in their

development of policies and direction for school gardens. Sharing that information is an

important piece missing in the provincial conversation on school gardens. In the ever-

dwindling resources allocated to education, the sharing of resources becomes even more

cost-effective and responsible.

Chapter 6

6 Conclusion

      This exploratory, qualitative case study set out to investigate the concept of social and emotional learning, which took place in school gardens implemented in kindergarten through grade five. Social and emotional learning (SEL) was broadly defined as the skills, knowledge, and attitudes that are widely considered life skills. The participants in this study, teachers, early childhood educators, special education teachers, and school administrators, worked with and observed students on a consistent basis while they were involved in school gardens or gardening experiences.

This study sought to answer the following questions:

1. In what ways, and why, do school gardens strengthen and promote social emotional practices among students in kindergarten through grade five in southern Ontario urban schools?

    a. Why do school gardens promote social and emotional learning practices for students?

    b. How can school gardens promote social and emotional learning practices for students?

Using these questions as a guide, the inductive analysis was based on data from researcher field notes, participant observations and field notes, and participant interviews. Triangulation of the data sources was used to ensure the quality and cogency of the research. The process of connecting the qualitative data to align with the literature study and theoretical framework of social-constructivism contributed to the recommendations and implications of the study.

      It is through the data analysis process that five themes were revealed to determine

if and how school gardens contributed to social and emotional learning. These themes were: relationship skills, decision-making skills, self-awareness, social awareness, and self-management, with subthemes being peer conflict resolution, alone time, focus, and language skills. Gaps in the current literature are present with regard to some of the themes of the study. One of these is the aforementioned gap in research related to school gardens with students who were not struggling. Additionally, for many persons employed in schools, there is a visioning gap; that is to say, many see a garden as a place to plant and harvest without ever considering the broader potential of gardening spaces to provide a host of richer learning experiences. Another topic under-represented in the literature is the frequent identification by students with higher identified needs regarding the calming influence of the garden on their mental state.

Teachers, Special Education Teachers and Early Childhood Educators who want to implement school gardens or gardening experiences, could use the evidence from this study to outline their arguments and rationale for gardening experiences to be the norm rather than the exception within schools. The study results could also draw attention to SEL attributes that were revealed in this study in order that educators may maximize the gardening experience for students.

The importance of gardens in the lives of students is part of the researcher's bigger philosophical belief in the importance of students being outside and the learning that can come from those hands-on experiences in nature. Karsten (2005) suggested that a student's primary play experience is no longer synonymous with outdoor play in the neighbourhood; in fact, some students now spend the vast majority of their leisure time either playing indoors or in the backseat of a car while being driven to activities taking

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place outside the home. As someone who grew up in a rural town in Southern Ontario with rich agrarian roots, the notion of the outdoors being complicated or not a preference for schools or educators was a perplexing one that required reflection on the part of the researcher throughout the study to ensure data was not steered in a particular direction.

Social constructivism, the study's theoretical framework, offers that knowledge is co-constructed and that individuals learn from one another. The experiential learning offered by school gardens, has the potential to support education on multiple levels and allow for individuals to share their expertise with others and build upon prior knowledge.

6.1 Limitations

As with all forms of research, the study was not without limitations. The sample size (n=14) was arrived at based on those who responded to an initial call for participation. Participants needed to be willing to commit to the process of observing students and recording field notes over a period of four to six weeks. They also needed to commit engaging in a semi-structured interview. Perhaps if the time commitment were not as extensive, there would have been a greater number of participants.

The study required a list and definition of social and emotional skills for the participants and may have added confusion as to the exact definition of these terms. While there is some consensus among researchers as to what skills contribute to social and emotional learning, when the Ontario Ministry of Education introduced the concept of self-regulation in the kindergarten program in 2010, the discussion began in earnest within boards of education to determine what the term meant and how it would be operationalized in a classroom. Thus the skills articulated for this study—namely, relationship skills, self-awareness, social awareness, decision-making, and self-

management—might have been used in too broad a fashion, as overarching umbrella terms, without sufficiently qualifying specific abilities that would fall under each umbrella term; for example, the skill labelled "self-management" comprises abilities in the areas of emotional self-control, adaptability, achievement orientation, and positive outlook (Goleman & Boyatzis, 2017). In an effort not to guide participant answers, as well as not make SEL capacities look like a checklist of behaviours students must exhibit, it is possible that participants may have benefited from more detail as to what kinds of capacities might be found under which umbrella terms but as an exploratory case study this breadth was reasonable. Consequently, there may have been misunderstandings of terms used in the study and definitions of the terms used for SEL skills, knowledge, and attitudes might have been ambiguous for the participants.

6.2 Recommendations for Future Research

There is a need for future research into school gardens as a place to promote the skills associated with social and emotional learning, specifically creating spaces for children to go to so they may experience calm. Some classes go out into garden spaces to be *mindful*, but recognizing that a garden, in its care and maintenance, also creates spaces of calm and focus may be one fruitful avenue of future research.

Future studies may utilize larger number of participants to investigate the phenomenon of social and emotional learning that does occurs or could occur with greater frequency in school gardens. This might give better insight into the topics explored in this study and perhaps provide more credence for same.

Part of the impetus for this study was the existing resistance by administrators to school gardens due to concerns about funding for school gardening projects. Although

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this study did not explore those issues, I aim to begin a dialogue about how those that work within school and school boards could see the many SEL benefits resulting from their support. Many of the participants (approximately half of the 14) had never gardened with students and now that they have had a positive experience with gardening, the hope is, they will continue to garden with their students and be open to exploring the topic of school gardens further.

There were a few groups of educators left out of the potential participant pool, namely those who were occasional teachers, as they were not guaranteed to have long-term access to students. It would be interesting to ask occasional teachers, who potentially have access to so many students across so many schools, to offer their thoughts and impressions on school gardens as they would view school gardens and the experiences that occur in them, through the eyes of someone who has seen it work well or perhaps not work well in other schools.

As this was a qualitative case study, it required participants who were willing to engage in the processes involved in this style of research. Participants had to be willing to take field notes and participate in semi-structured interviews on their own time. It is possible the time required may have eliminated potential participants. Had the style of data collection been less time-consuming, more educators may have participated and might be something to consider in future research.

This study revealed that a group of students who seemed to benefit the most from school gardens were those with teacher-identified higher needs. A future direction for research would be to further explore how students with higher needs, specifically, benefit from gardening.

Future study into aspects of SEL that participants were less familiar with would also be worth pursuing. Working with educators to increase their understanding of skills, knowledge, and attitudes related to social and emotional learning is a potentially rich topic of learning and research.

This study offers evidence that suggests the need for further study into how educators are using school gardens locally and provincially. In light of curriculum revisions and additions in Ontario Ministry of Education documents, there exists expertise that is an untapped resource in education within local boards of education. Many of the educators involved in the study were incorporating gardens into their classrooms and teaching practices in unique ways that would be of great interest and value to other educators.

There are also some methodological considerations for future research. In particular longitudinal investigations are needed due to the potential influence of time as a significant factor or variable. A fact to which anyone that has grown up in a rural area can attest, available garden time expands or contracts depending on the vagaries of weather. Available planning time and garden time can also be affected by unduly Byzantine bureaucratic systems. Additionally, with respect to sample size, this study was smaller than the researcher had initially hoped. Larger and more representative samples of educators could lead to more generalizable or differential findings in future studies.

One important recommendation that arose from these findings is a demonstrated need for future research into school gardens as a vehicle for the promotion of skills associated with social and emotional learning, specifically creating spaces where students are encouraged to be—and experience—aspects of self-management, specifically a sense

of calm. The recognition that gardens—through the care and maintenance necessitated by their very existence—also created oases of calm and focus in otherwise activity-filled settings is another important implication of this study and a potential avenue for future deeper research. The recommendation of being mindful of space for students is supported by a variety of research, specifically in O'Conner, Feyter, Carr, Luo, and Romm (2017) in their review of literature related to SEL suggested that "teachers may experiment with making small modifications to structured spaces and materials to encourage positive social play and reduce conflict for their students" (p. 4).

Exploring the topic of creating spaces of calm, as was suggested in the study, is part of providing some students a place for emotional regulation and perhaps a means of integrating this information into curriculum or guidelines. These organizational guidelines should be mindful of steering clear of prescribed *one size fits all* models and, rather, should offer proactive suggestions instead of benchmarks to be assessed which is essentially reactive to the very notion of SEL and SEL situations. Evidence suggests that, without early intervention, emotional, social, and behavioural problems in young children are key risk factors or *red flags* that mark the beginning of escalating academic problems, grade retention, and antisocial behaviour (Rimm-Kaufman, Pianta, & Cox, 2000; Ponitz, McClelland, Matthews, & Morrison, 2009; Tremblay, Mass, Pagani, &Vitaro, 1996). Further research into school gardens and gardening experiences as a place and means for nurturing and enhancing social and emotional skills, knowledge, and attitude development and promotion is worthy of exploration.

One of the challenges that emerged in the study for participants were the policies and myriad Byzantine interpretations of same that exist within school hierarchies.

Clarifying the vision of what gardens look like for schools, and connecting schools and educators to one another locally and provincially, is an important step in the school gardening movement.

A kind of garden located indoors, such as vertical gardening (one that could provide a longer growing season given the climate in Southern Ontario), is worth exploring in terms of further research and the benefits of it for all students. Vertical gardens have become popular in urban areas in the United States as the vertical systems allow for hands on learning for students who might not have access to gardens in their home environments due to space limitations or socio-economic issues. It would be worth exploring how vertical gardens could be implemented.

The qualitative data in this study yielded a surprising result of promoting social awareness, specifically with peer conflict resolution. Not all the schools and participants' experiences presented an opportunity for conflict resolution. It seems that where peer conflict resolution came through in the data was in environments with educators who were willing to facilitate this aspect of SEL. Returning to these participants who observed this in their school gardens and asking them to re-examine how peer conflict resolution was able to take place would be a starting point for future research, acknowledging that "learning is a social process, that individuals can take up new ideas through participation in public activities, transform those ideas in the context of their own practice, and demonstrate their learning through public talk or action" (Gallucci, 2008, p. 567).

Trusting students to solve technical problems that arise in the garden and allowing students the time and space to make decisions independently was a connection revealed in the study. Setting aside for a moment all the technical and manual labour issues

involved in starting a garden in a school, there were common challenges related to watering, weeding, harvesting, and the life and death of plants and seeds. Investigating the attitudes and characteristics that educators possess, which allowed the time and space for decision-making to occur, would be an interesting topic to pursue. Furthermore, once the characteristics and attitudes of educators, who were capable of allowing student decision-making to occur, and devising a method or lesson to teach pre-service educators how they can develop these skills would be rewarding. As someone who has access to pre-service educators (both early childhood educators and faculty of education students) in my career, it is a realistic plan to embed student decision-teaching practices with curriculum to promote SEL and school gardens.

The learning trajectory of the garden is a natural cycle as each season passes, but many educators can only see the value in planting and harvesting. The gap between what a garden could be used for, and what it is only currently used for, is also worthy of future exploration and discussion to enhance the school experience for educators and students alike. Uncovered in the literature review, there were some established curriculum guides for planning, planting, maintenance, and harvesting in school gardens. These documents could be refined and offer a more practical application to schools in Southwestern Ontario to create richer learning and provide a broader context for those who want to start school gardens. There is expertise that exists in Southwestern Ontario and within school boards that are underutilized and should be promoted locally and provincially and not merely to those who know how to access this information.

When considering the leadership within schools related to school gardens, perhaps thinking about leadership in a way that recognizes that "at the core of most

definitions of leadership are two functions: providing direction and exercising influence"
(Leithwood & Riehl, 2003, p. 6). Direction related to school gardens by school leaders,
could not only help in the increase in the installation of gardens, but perhaps in the
teaching pedagogy surrounding them. The school leader need not be in a formal
designated role, as informal leaders could be just as effective if not more effective in
bringing the agenda forward. Examining the support that is currently offered and that
could be offered for leaders who want to provide direction related to school gardens at all
levels is recommended.

Schools and boards of education polices are developed and operationalized on
different levels: "Policies mandate or prohibit behaviour; reward, sanction, legitimize,
and provide inducements for particular behaviours; transfer resources to enable particular
types of activities; and define or transfer authority" (Osher & Mary, 2003, p. 52). Board
policies related to school gardens send a message about how important gardens are and
how they are valued (or not) by administrators. When the policies related to the process
for getting permission to install a garden are cumbersome and complicated, this can slow
down and test the conviction of educators who want school gardens. When educators
committed to school gardens correctly or incorrectly perceive bureaucratic obstructions to
school gardens as intentional, this may have a negative effect—when not dissuading them
entirely from the project—rather of fostering a culture of *better to ask for forgiveness*
than beg for permission.

If the belief and commitment of staff are strong enough—and where
administration has not come right out and said, "No school gardens!" a collaborative
group of like-minded educators, in the absence of or in addition to a transformational

leader principal, may be able to make all the difference in whether or not school gardens are created. This is an ideal outcome as educators of school children would be acting in good faith in working toward school gardens and would not want their proactive efforts in effectuating same to be misrepresented as an attempt to conceal unethical behaviour via hazarding the forgiveness rather than permission route.

If educators come up against what they believe is a choice of either asking for forgiveness or permission, that is a time when their commitment is tested and when they may ask themselves and each other how they can make the school garden a reality within existing frameworks. Those who push through this seemingly binary choice of forgiveness or permission and instead work collaboratively to find an innovative solution incorporating existing policies, curricula, and supplies may discover that what administration was looking for all along was not merely to have a school garden but to have staff champions of school gardens and staff willing to demonstrate the courage of their convictions to make the idea a reality.

School board trustees are elected officials who are responsible for policy direction and there is the potential to explore policies related to school gardens. Community experts, those who have had experiences with school gardens and school board trustees could work together to establish policy related to school gardens and gardening experiences.

It would be more effective if school administration did more than simply refuse to outright ban school gardens and instead actively welcomed them. If school administration understood that school gardens and gardening experiences presented numerous benefits for students and teachers alike, and that there was every reason for them to be a regular

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part of school learning experiences this may create a more garden possible environment. All the intervening effort spent by staff on creating a plan and worry about the consequences, could instead have been spent on the actual creation of a school garden and the actual teaching in and working with students in the school garden. Examining or re-examining school garden policy not only at a board of education level but also on a provincial level is clearly an area worthy of further serious exploration and discussion.

This research represents one school board in Southwestern Ontario and the experiences of Teachers, Principals, Vice Principals, Special Education Teachers and Early Childhood Educators within it. Experience reflected in this study is unlikely to be identical across the province or Canada, but further study provincially or nationally could unearth those similarities and/or differences. Further research into how Teachers, Principals, Vice Principals, Special Education Teachers and Early Childhood Educators and school administrators in other areas of the province work successfully together towards common goals, such as school gardens, are worth exploring further.

6.3 Implications

This study posits that an action plan is needed for the implementation of school gardens and gardening experiences so that social and emotional learning does happen in and through them, and offered that school administrators have an important role to play. The leadership styles explored in this study, that can be adopted or enacted to promote school gardens and social and emotional learning, should be explored.

This study contributes to an existing body of research on school gardens and on SEL. Specifically this study provides a snapshot of social and emotional learning that can occur in school gardens. Examining the importance of social and emotional learning as

presented in the literature in comparison to the findings of this study demonstrates that this study identified areas for further exploration to better understand this connection and issue. The importance of social and emotional learning and opportunities to practice it as a proactive strategy warrants further exploration to ensure that this important facet of education is not left to chance. Furthermore, the opportunity for students in compensatory schools to experience the rich learning that school gardens and gardening experiences offer should be something that boards of education recognize and support (and that the study results highlighted).

As well, the study results add insight into the value that school gardens add to the lives of students and will hopefully motivate further inquiry into school gardens and the social and emotional learning opportunities presented in gardens for all students. An area that was brought up in this study is that many Educators are unsure around what exactly SEL can look like in a classroom and outside of it, although this may only be a local phenomenon, teacher preparation programs should consider this as facet to be explored or in some cases, revisited. Observations by previous researchers highlights the importance of SEL for students. As shown in this study school gardens provide other avenues for SEL skills, knowledge, and attitudes to be promoted and should be seen as the norm for all schools not a novelty for the few.

Many boards of education make the installation of school gardens and providing gardening experiences to students unnecessarily cumbersome through policy and regulations, (a complaint offered repeatedly by participants). A more comprehensive holistic approach to gardens at an organizational level, one that encourages schools to think about gardens beyond the lens of math and science curriculum, would broaden the

use of the space dedicated to gardens. The dichotomous thinking around school gardens as places of math and science learning or mindfulness learning spaces needs to be amended locally and provincially to maximize garden spaces in schools. Further action is required locally and provincially to devise a workable approach to the implementation of school gardens that reflects each community's needs and abilities.

6.4 Final Comments

Putting a seed into the ground, seeing it grow, and tending to it is one of life's simple joys that should be enjoyed and taught to our youngest citizens in all schools, not an activity to be enjoyed by the select few. Students' Social and Emotional Learning capacities can be promoted in school gardens and it is the researcher's hope that the work of this dissertation will inspire others to explore this movement in schools.

This chapter discussed the findings from the analysis of the results, the link to existing literature, implications for practice, and limitations to the study as well as suggestions for future research. This study highlighted the importance of school gardens and gardening experiences in the promotion of certain aspects of social and emotional learning. More importantly, it demonstrated that for Principals, Vice Principals, Teachers, Special Education Teachers and Early Childhood Educators incorporating social emotional skills school gardens and gardening experiences are dependent upon a number of variables and cannot be accomplished merely by happenstance.

To create change in school boards and schools, specifically related to school gardens those who work within schools would be wise to consider Tomasella & Platz (2012) words of advice "One of the most remarkable capacities of human beings is their capacity to work together to solve problems or to create things that no individual could have

solved or created on its own." (p. 9).

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Email Script for Recruitment

<u>**Subject Line: Invitation to participate in research**</u>

You are being invited to participate in a study that we, Dr. Pam Bishop and Kathryn Markham-Petro are conducting. Briefly, the study involves:

• keeping notes on observations related to social emotional learning demonstrated by students in your class while involved in gardening experiences; keeping notes on your own teaching practices related to school gardens

• agreeing to meet with me to discuss your notes as part of an interview process at a mutually agreed upon location in Windsor-Essex County, Ontario.

• participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect on your future employment status and no repercussions. If you chose to withdraw from the study, you have the right to request removal of your data unless it is not feasible to do so such as after is has been anonymized

• Your participation is expected to take approximately three to six months

Your participation is entirely voluntary and your information will remain confidential between you (the participant), the field researcher, and the Principal Investigator. Your information and participation will not be shared with your employer the Greater Essex County District School Board.

Representatives of the University of Western Ontario Non-Medical Human Research

Ethics Board may require access to study-related records to monitor the conduct of the

research.

If you would like to participate in this study please click on the link below to access the

letter of information.

Thank you,

Kathryn Markham-Petro

**Social and Emotional Learning
What to Look For**

In the journal that was provided to you, please note any of the following Social and Emotional Learning (SEL) Competencies that you witness. Please do not indicate the child's name or any identifying information to ensure confidentiality. Providing dates of the SEL observations is requested.

Self-awareness includes the ability to accurately realize one's own emotions and one's own ability to control those emotions. Social awareness is to be conscious of the problems of society or a group. Self-management incorporates the ability to regulate and take responsibility for one's own emotions and reactions. Responsible decision-making is one's ability to make judgement about their own behaviour and consider how it will affect others (Collaborative for Academic, Social, and Emotional Learning, 2013). Some suggested example behaviours and actions as adapted from *The Devereux Student Strengths Assessment (DESSA) Comprehensive System, Early Development Instrument* and CASEL *Social and Emotional Learning in Schools From Programs to Strategies include:*

Self-awareness:

Self-Awareness is a children's realistic understanding of their strengths and limitations when working independently and in-group situations. Self-awareness can also be thought of as self-efficacy and can affect how a child approaches tasks and challenges.

Social awareness

A child demonstrates social awareness through their ability to play and work cooperatively with other children at the level appropriate for his/her age with a variety of children. In a play or work situation, a child should be able to understand and respond to the needs of others.

Self-management

Self-management is a child's success in controlling his/ her emotions and behaviours, especially in new and challenging situations. Self-management is not only about controlling emotions but about a child expressing their emotions and labelling feelings in an accurate manner.

Relationship skills

A child's skill at promoting and maintaining positive connections with others shows their relationship skills. Children, who can negotiate within a group and successfully resolve conflicts with minimal support, in an age appropriate manner, are demonstrating relationship skills

Decision-making:

A child who can analyze social situations, identify problems, set prosocial goals, and determine effective ways to solve differences that arise within a group are effective at decision making.

Please remember that participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no ramifications. All data collected will remain confidential and accessible only to the investigators of this study.

The Devereux Student Strengths Assessment (DESSA) Comprehensive System

Early Development Instrument

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Appendix C

Semi-Structured Interview Questions

1. Please tell me about your gardening experiences with the students.

2. How did you witness any of the social emotional learning skills and abilities (as provided in the handout titled What to Look For) being demonstrated by the students?

3. Could you please describe some of the things you saw students doing together when they were interacting in the garden?

4. Can you think of a time when the students were engaged in the garden and please describe some of the things you saw them doing?

5. What, if any, are the factors that contribute to social emotional skills and abilities being demonstrated in the garden by the students?

6. Did you notice your own teaching practices differing in the garden rather than in the more structured classroom? How? Why?

7. How do you think that the school garden impacted the relationships between students?

8. How do you think the school garden affected a student's ability to perform in the classroom?

9. What did students like best about the school garden? What did they like the least about the school garden?

10. What was the difference between how boys and girls interacted in the school garden?

11. How does school gardens compare to other outdoor experiences for students in your class?

Appendix D

The Collaborative for Academic, Social, and Emotional Learning (CASEL)

Core SEL Competencies

Nonidentifiable pictures of some of the growing activities that occurred during the study within the participating schools. Pictures property of Kathryn Markham-Petro.

Class cooperative spring clean-up

Many of the classes had these
Grow racks in their room
for gardening inside.

One of the schools decided to grow as
many items in their garden for end of the year
Pizza party for their school mates.

Many students wanted to be sure that others knew it was their garden. The student decorated log indicates "kindergarten"

A low tech option for setting up a hydroponic growing system, that was in every available window in the participating classroom.

<div align="center">**Curriculum Vitae**</div>

Name: Kathryn Markham-Petro

Post-secondary
Education and Degrees: St. Clair College
                                                      Windsor, Ontario
                                                      1988-1990

                                                      Royal Roads University
                                                      Victoria, British Columbia
                                                      2003-2005

Related Work Experience: Early Childhood Educator
                                                      1990-2001

                                                      Professor, Early Childhood Education
                                                      2005-Present

Publications:
Markham-Petro, K. (2005). *The Opportunity of Field Placement*. (Master's thesis). Royal
Roads University, Victoria, British Columbia.