AGAINST THE ODDS: TOWARDS SUSTAINABLE PUBLIC
SCHOOLING

by

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Abstract

Currently 7 billion humans rely on the Earth’s depleting natural resources, and the Earth’s population is projected to increase to 9 billion by 2045 (UN Population predictions, 2010). We are now a human race that is predominately urban. Our human-centric behaviours and patterns of living are having a major impact on the natural world; in response, educational and environmental researchers have called for a reorganization in education to better reflect our urban age and the changing cultural and environmental mosaic. Educating for sustainability is of increasing importance as we become more aware that we are facing an urgent need to repair our fractured relationship with the earth and with one another. Sustainable models of education are related to place and how our way of life can support human activity. In a sustainable school, the campus and community are extensions of the classroom.

This study is guided by three questions: (a) How does a public school curriculum that extends beyond the classroom foster a deep love and knowledge of place in children’s education and prepare students to meet contemporary challenges? (b) How do teachers enact sustainability education in public education, amid a standards-based curriculum? (c) What enduring and systemic structures enable publicly funded schools to participate in a curricular process that engages students and the community? Data were collected from in-depth, semi-structured interviews with five teachers and two administrators, from three successful, publicly funded schools. Other forms of data included onsite and virtual observations, via website webcams, artifact analysis using schools blogs, Facebook posts, school newsletters, student work and teaching materials; as well, photographs were used to support observations and field notes. This study describes how sustainability education and place-based programs can be successfully developed in the standards-based era. The findings highlight important themes related to curriculum as process, real-world learning, student agency, community partnerships, and collaborative leadership.
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Preface

In an effort to help the reader understand how my experiences lend credibility to the discussion that follows, I explain how I have come to explore place-based and community-based education, and education for sustainability as an urgently needed educational revolution.

Quite simply, my hopes and dreams for my five-year old son have stirred and reignited my interest in educational change. To expound, after nearly two decades working in the fields of social work and education, my professional experiences have deeply influenced what I perceive is so desperately deficient in our mainstream educational culture. In turn, these deficiencies have a profound influence on the health and well being of individuals and communities.

As a child welfare and mental health social worker I supported, counselled, and intervened in some of humanity’s most challenging circumstances. I met people of all ages battling mental, social, and emotional unrest as a result of anger, pain, sadness, loss, homelessness, abuse, trauma, and grief. For the most part, these were people struggling to generate purpose and direction in their lives. Many of the individuals I encountered lacked any meaningful connection to their community, let alone a sense of civic responsibility and responsibility to self. It bothered me and I wanted to understand how so many people in our culture relied on their communities but were without any meaningful relationship or connection to their communities. I couldn’t help but think that there had to be a better way to engage and enable young people to develop a sense of place, and connection to community; to help them to realize and accept social responsibility for contributing to one’s community and making it what one wants it to be. I left social work for education seeking a more “creative” profession. I believed that education held the key because the majority of our childhood and adolescence is spent being shaped as a member of a school community. Unfortunately, in my teacher education program, I did not experience the change I had envisioned. While I met many brilliant and engaging teachers, I quickly encountered an education system that placed greater emphasis on the product than on the process. Whereby the education system itself factored very little in the way of enabling students to develop a sense of self, a sense of place, and to
foster relationships and a sense of community and stewardship beyond the confines of the school.

As an educator I had the privilege of teaching in a Waldorf school, an experience that allowed me to experience and fully appreciate honouring process and making the needs of the developing child a priority. Over the course of ten years I taught Kindergarten, then Grades 1 through 6. Looping, I remained with one group of children for Grades 1 and 2; then another group for Grades 1 to Grade 4, returning after maternity leave for Grade 6; and another from Grade 1 to 2. In those ten years, I had the wonderful opportunity to experience and recognize the value of the multitude of benefits in making positive and sustained relationships a priority for teaching and learning. Additionally, I observed how allowing children the space and the time to discover and inquire (with all of their senses) beyond the confines of the classroom, and to live deeply within a sense of wonder and awe, enabled authentic knowledge and understanding to unfold in meaningful and developmentally appropriate ways. Furthermore, I observed how joy and an emotional connection formed when children encountered repeated and positive hands-on experiences with their natural and built communities. This, coupled with a conscientious attention to the aesthetics of the child’s physical environment, facilitated a curiosity, a joy, and a love of learning. But, this was an independent school and it troubled me that many of the rich and crucial elements of this curriculum and pedagogy, in particular the relational elements and the practical engagement with the world, were not accessible to a greater population.

My experience, coupled with my interest in community development, social justice, and environmental stewardship fuels my passion for sustainable schooling. The environmental and social challenges our culture faces are complex and interconnected and appear to be growing in severity. Consequently, I believe the need for change in how we educate our children is more critical now than even before. While collecting data for this work, I met with some unbelievably inspiring individuals, teachers, administrators, and school leaders. Observing and listening to their insights on educational change and sustainability education, combined with reading from the works of some extraordinary authors, teachers, and researchers has filled me with hope that change is possible and is happening in remarkable ways in publicly funded, urban and rural school communities. Furthermore, these meetings,
observations and readings have enabled me to expand my thinking and reflect upon and refine my
reasoning about teaching in a more environmentally and socially just curriculum. One that supports a
more fulfilling human presence by fostering meaningful connections to one another, as well as to the
natural and built environments of our communities, and with a positive regard for future generations.
Chapter 1

Learning Without Borders

The worth of education must now be measured against the standards of decency and human survival—the issues now looming so large before us in the 21st century. It is not education, but education of a certain kind, that will save us.

David Orr
Children experience and relate to the earth through their hearts and hands, feelings and actions (Noddings, 2005; Wells, 2000; Wilson, 1997). But we continue to intellectualize their relationship to the earth and push facts over wonder, exploration, creativity, and inquiry (Orr, 2004; Smith, 2002; Sobel, 2013). As a result, we graduate students with little feeling or spiritual connection to the places they live and to the land they inhabit. In turn, we jeopardize their well-being and the health of our communities and the planet (Gruenewald, 2008; Orr, 2004). We need to better appreciate that education is more than an intellectual endeavor. While the goal for testing and objective measures represents an effort to close the achievement gap (Lieberman 1999), we are restricting the focus of teaching and neglecting important habits of mind related to ecological understanding, appreciation of place, creative and critical thinking, and democratic citizenship not fully appreciated in a standards-based curriculum and pedagogy, nor assessed by standardized testing.

Gruenewald (2008) highlighted the need to graduate students with an understanding of what it means to live sustainably and with the skills to transform our culture into a more sustainable one. Orr (2004) also articulated this need:

[The world] needs instead hundreds of thousands of young people equipped with the vision, moral stamina, and intellectual depth necessary to rebuild neighborhoods, towns, and communities around the planet. The kind of education available to them (now) will not help much... (p. 164)

But, we live in a risk-averse age (Louv, 2005). Today’s children spend endless hours shut up inside their homes and classrooms missing out on the limitless possibilities and opportunities to learn through meaningful integration in the community and the outdoors, building valuable relationships with self and other. Clarke (2012) asked, “How do we educate and school ourselves as a species in order to establish the conditions which are conducive to maintaining life on earth?”
(p. 2). Recognizing the overwhelmingly human-centric response to our natural environments and growing ecological illiteracy, Clarke (2012) called for a “radical rediscovery of our educational purpose, a renaissance of the educational enterprise for our urban age” (p. 2). My interest is in exploring sustainability education in publicly funded schools, as a means to reestablish a connection with ecological literacy, and counter the human-centric and industrialization of education.

Schools continue to fulfill an antiquated need based on an industrial system of education (Bobbit, 1918; Tyler, 1949) whose main objective during the industrial era of the nineteenth century was to populate the industrial workforce. Fast-forward a century and most elementary classrooms look the same from one neighbourhood to another, from one city to another, and even from one province to another state. But schools aren’t solely to blame. It is a narrative that drives our capitalist culture. While we have maintained an overwhelmingly industrial model of schooling, there is a growing sense from teachers and parents that this capitalist linear model of education no longer meets our contemporary needs.

A great deal of the curriculum and instructional methods in schools today is driven by the standards-based fraternity where students are under pressure to proceed from one standard to the next, demonstrating mastery with skilled accuracy, although not necessarily with any depth of understanding. Knowledge is seen as a product; typically isolated and reduced to compartmentalized fragments and habitually void of community connectedness, reflective thinking, and artistic or musical creativity. Steven Wolk (2007), in his poignant article, *Why go to school?* calculated that on average, students (from Grade 1 on) are completing 400 worksheets a year and by Grade 5 reading about 2,500 textbook pages a year. That’s upwards of 30,000 textbook pages by the time a student leaves high school, “It is a never-ending barrage of facts,
most of which we know are forgotten by the time the student flips on his or her TV or iPod after school” (p. 649). One need not pause for too long to answer whether or not this approach to teaching and learning inspires creativity and lifelong learning, or creative and critical thinkers.

Richard Louv (2005) also raised concerns about the segmented and superficial learning and instruction that takes place in most schools today. He made reference to an education system that merely skims the surface and fails to help students to see connections among topics, and furthermore, that the topics themselves lack authenticity in students’ lives. He furthered his critique adding that the lack of depth in learning fails to capture student’s attention or light a spark in their souls. Wendell Berry (2000) wrote about the absence of inquiry and creative and critical thinking in students as a result of the reductionism in school and the overwhelming objectifying language of the current curriculum and instructional approaches, once again making reference to learning subjects in an isolated manner and with minimal periods of time given to a particular subject. Nearly a century ago, Dewey (1938) questioned the benefit of learning prescribed amounts of isolated facts and information if “in the process the individual loses his own soul” (p. 49) and I would add, fails to help students to have reverence for it in the first place. Maurice Holt (2005) wrote, “In today’s school climate…Parents are encouraged to focus on achievement, not self realization” (p. 57). He continued, calling on the reader to consider the “price exacted for believing that education is about assessed performance” and the difficulty that arises when we apply technical standards on moral development, reminding us that, “School is a place where students develop their minds. You can’t put a number on that” (p. 57). And that number is more than just a score, a grade, and a rank; it is also an economic indicator. Sadly, our school system remains one that largely prepares children to be passive workers to feed the economic machine. As Noddings (2003) observed:
It is as though our society has simply decided that the purpose of schooling is economic—to improve the financial condition of individuals and to advance the prosperity of the nation. Hence students should do well on standardized tests, get into good colleges, obtain well-paying jobs, and buy lots of things. Surely there must be more to education than this? (p. 4)

While our schools are blessed with many creative and engaging teachers, our school system largely encourages passive compliance to the standards-based fraternity; limiting, through its controlled efforts, students’ potential to know and act on what it means to be human. Wolks (2007) elaborated on the case of passive schooling, asserting, “passive schooling creates passive people” (p. 650), adding:

If we want people to think, learn, and care about the many dimensions of life, if we want neighbours who accept the responsibility of tending to the world and working to make it a better place, then we need schools and curricula that are actually about life and the world. (p. 650)

In Educating Citizens for Global Awareness, Noddings (2005) suggested that Western education “deprives young people of the knowledge they need to care for and appreciate the places in which they grow up” (p. 57). She advocated acquiring knowledge through meaningful experiences and exploration in the natural world. Others have recognized this need too (Broda, 2007; Clarke, 2012; Orr, 1994, 2012; Sobel, 2013; Stone, 2009; and Waite, 2011). Over the past decade, a greater number of place-based and community-based education initiatives have evolved to create new opportunities in teaching and learning; as well as, opportunities to support teachers in discovering the natural and human resources within their local community and region and integrate these resources with existing curriculum standards and expectations. Some of these include: A Forest For Every Classroom; PLACE; CO-SEED; REAL Community Gardens; and Boston Schoolyard Initiative. Within the last decade as well, the Sustainable Schools Project (SSP) and Center for Sustainable Systems (CSS) have offered programming, professional
development and curriculum support, and resources with a specific focus on sustainability education.

By recognizing and appreciating the value of learning opportunities that exist in the local community, schools reflect the places they inhabit, be they seasonal, cultural, geographical, political or historical. Schools can unite what children experience outside of the school walls with what they are learning inside.

The three publicly funded schools featured in this phenomenological study leave me feeling optimistic that an authentic and meaningful education, integrated with real world happenings beyond the classroom, can be a reality for our children and our communities in this standards-based education culture. Change is a manageable prospect and a curriculum of change is one that teachers, school leaders and parents are standing behind in increasing numbers.

Accordingly, the research examines how teaching beyond the classroom facilitates a depth of inquiry and understanding often perceived as an impossible task in standards-based education; and furthermore the potential to enhance children’s connection to their local built and natural communities in rich and lasting ways.

**Purpose**

The purpose of this phenomenological study is to explore and describe what teaching and learning looks like, feels like and acts like, when the walls of the classroom become permeable and the natural and built environments of our schoolyards and the local community become the textbook, the laboratory, and even the classroom. This study explores and describes how teachers use the above as integrating contexts for teaching the traditional subjects while recognizing the existing district, state and core standards and expectations. The presentation of three successful publicly funded schools, where curriculum and instruction is conceived through the lens of
sustainability and students are practically engaged with their local community, demonstrates how similar programs can be conceived.

This study is guided by one overarching question and two guiding questions:

How does a public school curriculum that extends beyond the classroom foster a deep love and knowledge of place in children’s education and prepare students to meet contemporary challenges? And,

a. How do teachers enact sustainability education in public education, amid a standards-based curriculum?

b. What enduring and systemic structures enable publicly funded schools to participate in a curricular process that engages students and the community?

Rationale

According to the United Nations recent population statistics, currently 7 billion humans rely on the Earth’s depleting natural resources, and the earth’s population is projected to increase to 9 billion by 2045 (UN Population predictions 2010). We are now a human race that is predominately urban. There is no denying that our human-centric behaviours and patterns of living are having a major impact on the natural world and our supply of fresh drinking water, as well as healthy and sustainable soil for food production. Our ecological footprint consumption continues to overshoot our biocapacity, or available ecological resources. Ewing et al. (2009) offered this staggering statistic:

North America overshoots its biocapacity by more than any other region in the world. Its Ecological Footprint of production is 1,080 gha [global hectares per person] greater than available capacity. The contrast between Canada and the United States of America is sharp. The former has an ecological remainder of 119 million gha, the third highest in the world. The latter exhibits the second highest total overshoot of any country in the world, with
Footprint of production exceeding biocapacity by nearly 1,120 million gha (p. 70).

We are facing an urgent need to repair our fractured relationship with the earth and with one another. For these reasons, I am convinced that the primary goal for education must be education for sustainability.

Sustainable models of education are related to place and how our way of life can support human activity. Integrating place consciousness, and learning from the local natural and built environments with public school curriculum and pedagogy contributes to a sustainable model of education. Educating for sustainability is of increasing importance as we become more aware of the detrimental effects of our consumer driven lifestyle on quality of life and on the health of the planet. In a sustainable school, the campus and community are extensions of the classroom. Every aspect of school and community life—the way decisions are made, the way energy is used, the origins of the food served in the cafeteria, and collaboration and accountability among teachers, students and staff—is an opportunity to teach and learn. Students are challenged to apply what they learn by improving the well-being of their own school and community.

United Nations declared 2005–2014 the decade of education for sustainable development, defining Education for Sustainable Development as:

...an approach to teaching and learning based on the ideals and principles that underlie sustainability - human rights, poverty reduction, sustainable livelihoods, peace, environmental protection, democracy, health, biological and landscape diversity, climate change, gender equality, and protection of indigenous cultures. (Retrieved from, http://unesco.ca/en/home-accueil/esd-edd)

There exists extraordinary potential for schoolyards and the natural and built resources that exist within walking distance of the school to be utilized as meaningful places for teaching and integration of the formal curriculum. Valuing our communities and teaching from local,
natural and built settings fosters a sense of place and a meaningful connection to the natural environment and local community (Rivkin, 2000; Wilson, 1997); promotes opportunities for active, joyful, inspired exploration (Louv, 2008; Upitis, 2010); blurs the boundaries between creative play and formal learning through hands-on, inquiry-based learning (Ballantyne & Packer, 2008; Moore, 1997; Orr, 2004); and ultimately fosters a lifelong connection to ecological values and environmental stewardship (Louv, 2008; Sobel, 2008; Tooth & Renshaw, 2009).

Teaching from the schoolyard and local, natural and built environments offers countless opportunities and benefits for students and teachers alike, and represents a new social ecology in education. By increasing students’ awareness, knowledge and appreciation for what their local communities need and have to offer, and through practical, hands on engagement with the world, they learn to appreciate the interconnectedness of human and natural systems. Furthermore, students come to see that their actions and choices matter, and that they can make a difference.

A growing number of teachers and schools have embraced the need and desire to educate their students for the exceptional ecological and place challenges at this time in human history, and to do so in a way that is genuine and relevant in the context of their own communities and realities. Many more teachers recognize and appreciate the value of sustainable, place-based schooling but struggle to do so amid standards-based educational structures. My work offers three similar yet dissimilar examples, based on three publicly funded schools, for how sustainability education may be conceived in the context of public education.

**Thesis Overview**

The literature review is woven throughout the thesis to synthesize ideas as I describe the experiences of teachers and leaders/administrators from the three different public schools. At times I integrate and draw on my professional experience essential to informing the development
of my thinking in relation to the various discussions. Chapter 2 explores educational approaches to overcome the educational stalemate and the status quo in education. There is mounting evidence that the status quo schooling is an unsustainable option. The framework for my thesis will be presented as well as features of the alternative public school models described in this case study. Chapter 3 explains the methodology of this study. Chapter 4 presents of the three participating public schools and explores curriculum and pedagogical features of the three schools. Chapter 5 explores the enduring commitments that schools will do well to honour to successfully support the curriculum and pedagogical features presented in the previous chapter. Chapter 6 synthesizes the preceding discussions with a focus on how to move forward, how to learn from these successful public school models, and graduate students who are ready to take up contemporary challenges.
Chapter 2

Overcoming the Public Education Stalemate

Over the past decade, educators from New England to Alaska have been relocating the curriculum away from generic texts to the particularities of their own communities and regions. This process has been accompanied by the adoption of instructional practices that draws heavily on student initiative and responsibility as well as the talent and expertise of adults outside the school. The results have included higher levels of student engagement, more commitment to public education, energized and excited teachers and principals, and a renewed sense of what there is to value in the local.

Greg Smith
At the end of the 19th century and into the early decades of the 20th century, Dewey stood as a fervent champion for the integration of school and community. He suggested that the uncultivated potential in students resulted from the dearth of opportunities for students to freely integrate their experiences outside the school in authentic ways within school; and similarly, to authentically employ what is learned at school within the daily happenings outside of school. Dewey did not stand alone in his conviction that the school and community should be partners in education. Around the same time, Jane Addams (1910) believed that the community should sit at the center of education and education should be linked to community problem solving. Several decades later, educational philosopher and advocate for the oppressed, Paulo Freire (1970), warned of isolating school from meaningful local experiences and cultural life, encouraging the integration of the two. He also supported a pedagogy that respected the learner as co-creator.

Now, nearly a century later, students’ experiences are largely unchanged. Yagelski (2005) wrote that despite the developments of the 20th century, the assembly of formal schooling and the K to 12 curriculum has remained largely unchanged since the establishment of compulsory education (in the U.S.) during the late 19th century. In pursuit of global economic objectives, the current education reform policies that aim to tighten standards and prove worth in standardized measures and high-stakes testing increasingly isolate students from the places they live. Education that neglects the places we live, fails to meaningfully relate the learner and the community (Gruenewald 2003). Not only does it compromise meaningful student engagement, but it also disregards the web of relationships. Furthermore, education that neglects the places we live contributes to a growing body of citizens who remain disengaged at the local and community level, and consequently unaccountable to the importance of connection, people, community and place. He countered that it is in the community where we experience relationships and where we
can potentially scrutinize and shape these relationships through education. What is more, the current education reform trend of aligning a standardized curriculum and testing with global economic objectives creates a generic education that can be taught to anyone anywhere. Noddings (2002) coined this, “an education for ‘nowhere’—that is, to an unhappy habituation to places and objects that have lost their uniqueness and their connection to natural life” (p. 171). Many gifted and motivated teachers find themselves wedged between a desire to authentically connect and engage their students with the world around them and the pressures to meet district, state, and core standards and expectations in a standards-based education system. Sobel (2013) offered that owing to state-mandated curriculum and testing, teachers are framed by strict guidelines and tight expectations that can squelch their creativity and confidence to step beyond the standards. He suggested that a wall has been erected between children and the touch it, smell it, taste it wonder of the real world, leaving students working on the “same page on the same day” (p. 8-9).

Emphasizing the alienation of school from society, Sobel (2013) cited Bigelow (1996) who illustrated how his schooling alienated him from the real world in his article titled, “How my schooling taught me contempt for the Earth.” Bigelow alleged that in his twelve years of primary and secondary education, restricted to the four walls of his classroom, he learned to “not think about the earth, about the place where we were” (p. 10). I don’t believe teachers aim to foster this level of complete disregard and neglect of the local community and natural environment. Alienation of school from society is a larger matter that goes beyond what teachers do in their respective classrooms, and it requires open dialogue among all stakeholders.

Smith (2002) elucidated Dewey’s notion that children are drawn to real phenomenon rather than facts about phenomenon. He suggested that children value knowledge that embodies a direct link to their own social experience, and allows them to engage in pursuits that are of benefit
to and valued by those in their family and community (p. 586). Considering this notion with greater gravity, Gruenewald (2003) stressed human development is stunted by schools that isolate teachers and students from the places outside school; and restrict awareness of, connections to, and appreciation for a sense of place and community (p. 625). In the global age, a vast divide has advanced between our community schools and the communities they inhabit.

**Making a Difference: Challenging the Public Schooling Status Quo**

For many schools across the country, learning has become a sheltered, discipline specific activity encountered through textbooks, the Internet, and videos rather than hands-on experiences in the real world. The *Community-based School Environmental Education Strategy* refers to the traditional classroom as using the “two by four” format, meaning that what is taught and learned rests within “the two covers of the book and the four walls of the school” (2000, p. 1). Regardless of the current emphasis on standards-based education reform, not all hope is lost. A growing number of individuals interested in a new education reform and school reform have turned to place-based and community-based education to strengthen schools by reconnecting with the local community. Sobel (2013) is certain that place-based education is “the antidote” to the indifference toward the natural and built environments widespread among schools (p. 11). These individuals recognize that the local history, landscape, economy, organizations, and community leaders offer valuable lessons to strengthen academic connections and develop citizenry and social responsibility.

Teachers, school leaders, parents and community members are taking momentous steps toward reconnecting schools and communities. Change is taking shape; not only on the frontline in classrooms, but at the policy and planning ranks as well. A few such examples follow.
In 2006, the UK Ministry for Education Skills Development recognized and promoted the benefits of learning outside the classroom with the *Learning Outside the Classroom Manifesto* (2006). The *manifesto* asserts that: “every young person should experience the world beyond the classroom as an essential part of learning and personal development, whatever their age, ability or circumstances” (p. ii).

Another example includes the *Vermont’s Framework of Standards and Learning Opportunities* (2000; 2013) that now recognizes the importance of place and sustainability with *Standards* (3.9) *Sustainability* and (4.6) *Understanding Place* (Vermont Agency of Education, 2000).

Finally, closer to home, the Belfountain Public School located in Caledon, Ontario formally established the Environmental Education, Conservation, and Outdoor Education (ECO) initiative in 2009. The public school recognized the local community and the natural environment as the most meaningful learning context in their student’s lives. Highly involved and supported families, and invested faculty are in the process of transforming the school under the consultative guidance of David Sobel and the Co Seed Project. The school works from several key learning strategies including place-based learning, service-learning, environment as an integrating context (EIC), and inquiry to name a few. Through their 5-year pilot initiative they are addressing some of the 32 recommendations from the Ontario Ministry of Education’s 2007 report, *Shaping Our Schools Shaping Our Future Report of the working group in Environmental Education* as well as pedagogical goals more specifically related to sense of place and civic engagement.
Theoretical Framework

I am anxiously awaiting a good explanation why it’s important for second-graders to know the order of the planets from Mercury to Pluto. Wouldn’t it be more useful to develop a solid understanding of the geography of the town the second-grader lives in?

David Sobel

Place-based Education

In our mounting awareness and concern for the growing gulf between children and the natural world, and education and the natural world, place-based education has re-emerged as an important learner-centered approach—as evidenced in the increased number of programs that have successfully adopted this approach; a few such examples from Vermont alone include, FEED Project; A Forest for Every Classroom; The Living Machine—Sustainable Schools Project; Shelburne Farms Sustainable Schools Project; The Intervale; and ECHO to name a few.

In its simplest terms, Diden (2005) defined place-based education as the “grounding of curriculum and instruction in the local context” (p. 1). Diden (2005) cited Lewicki (1997) define place-based learning as the pedagogy of place uniting school and community along a “common pathway dedicated to stewardship and life-long learning” (p.1). Place-based education grounds learning in the local and lived experiences of students, teachers and the community (Smith, 2002). It is “learning to be where we are”: our schoolyards, parks, public lands, rivers, lakes and downtown shopping places are where we need to base our lessons…this is where we are now (Smith, 2002). By way of encouraging educators to consider why geography, ecology, and geology lessons are being taught from generic textbooks, when significant and nearby learning opportunities await student exploration, Smith (2002) suggested that when teachers teach strictly
from the textbook, learning opportunities that are nearby and local are neglected. Sobel (2013) defined place-based education as:

Place-based education is the process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science, and other subjects across the curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students’ appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens. Community vitality and environmental quality are improved through the active engagement of local citizens, community organizations, and environmental resources in the life of the school (p. 11)

In place-based education the schoolyard, community and public lands become the classroom, and the formal curriculum subjects are grounded by deep experiences, through contributing to solving real issues (social, economic, ecological) of the local community. Place-based education is not a new phenomenon. Diden (2005) reminded us, that in 1938, Dewey suggested, “all genuine education comes through experience” (p. 1). He emphasized the entwined relationship of community, curriculum, teachers and learners (p. 1). Furthermore, one of the core principles of place-based education, “knowledge of the nearest things should be acquired first, then that of those farther and farther off,” was articulated as early as the seventeenth-century by philosopher Comenius (Sobel 2004, p. 3).

While the definition of place-based education varies, the motivation behind why educators and community members are drawn to place-based education is clear. There is rich consensus in the literature (and in this study) that learning that is grounded in the local meets academic and developmental goals in rich and authentic ways. Through this approach, students are empowered by the reminders they observe in their own community of how their actions made a difference. Place-based education helps students to develop personal and lifelong skills as
students mature into responsible citizens. In addition, place-based education benefits the local community. Woodhouse and Knapp (2001) and Diden (2005) believed place-based teaching and learning bridges “progressive educators of the early twentieth century” and “constructivists of the past twenty years” (p. 8).

Recognizing the virtues of integrating standards-based expectations in authentic ways with the local community is simple for most involved in school improvement initiatives; however, applying the concept of place in meaningful and sustainable ways is another challenge. It is often easier to go back to what one knows and to teach the way we’ve been taught than to push for the change we envision. But, if we slow down for a moment, pause, and reflect on what is best for a child’s development, we most surely will recognize that educational progress based heavily on technology and economic gains, isn’t always for the better. As society becomes increasingly urbanized and technology takes a more prominent role in our lives, it becomes increasingly more important to adopt the goals, pedagogy, and practice of place-based education.

Some consider place-based pedagogy to be the most progressive education, with its emphasis on “authentic learning, integrated curriculum, and practical problem solving” (Gibbs and Howley; 2001, p. 53). Tooth and Renshaw (2009), in their reflection of pedagogy and place, draw our attention to the five key benefits of place-based learning: (a) being in the environment, (b) real life learning, (c) sensory engagement, (d) learning by doing, and (e) local context (p. 98). The Place-based Education Evaluation Collaborative (PEEC) noted the following benefits from their evaluation of four place-based education programs: “Place-based education fosters students’ connections to place and creates vibrant partnerships between schools and communities. It boosts student achievement and improves environmental, social, and economic vitality” (2010, p. 2). The primary value of place-based education lies in the way that it serves to strengthen children’s
connections to others and to the regions in which they live. It enhances achievement, but more importantly, it helps humanity overcome the alienation and isolation of individuals that have become characteristics of our modern culture.

**Literature Themes**

Place-based teaching and learning, much like the places we inhabit, is an interconnected framework with many integrated conceptual themes and values. These themes are deeply interconnected and they will be explored in the following paragraphs and pages.

**Sense of Place**

*We know enough about our history by now to be aware that people exploit what they have merely concluded to be of value, but they defend what they love.*

  
  *Wendell Berry*

Research shows a strong correlation between place attachment and stewardship (Berry, 2005; Cornell, 2011; Knapp, 2005; Orr, 2002). When a place is meaningful to its citizens; its citizens are more inclined to care for it (Manzo and Perkins, 2006). Cornell (2011) wrote that to fully appreciate our place in the world, we need reflective moments in nature (p. 30). Reflecting on Aldo Leopold’s relationship to the outdoors, Knapp (2005) suggested that we develop a sense of place by forming “meaningful connections” with the land (p. 280). He shared that Leopold attached infinite importance to learning about place through hands-on and integrated experiences (p. 284). Establishing a sense of place is about forming relationships and understanding our environs (Aucoin, 2011). Gruenewald (2003) asserted that the challenge of place-conscious education is in being present to what places and our natural worlds are telling us—and to then act as responsible and informed citizens (p. 645). He cautioned that a lack of attention to the significance of place deprives human experience, diminishes the web of relationships, and leads
to the disappearance of biological and cultural conditions that we will soon live to regret (p. 645). Kudryavtsez (2012) reminded us that Bailey (1911) wrote of the disconnect between people and their environment, “We are more likely to know the wonders of China and Brazil than of our own brooks and woods” (p. 229). As well, Kudryavtsez cited Carson (1965) who stressed that, “first-hand experiences with natural phenomena in various places may contribute to children’s emotional connection to the world” (p. 229).

**Cultural Studies**

When people acquire a deep knowledge of a particular place, they begin to care about what happens to the landscape, creatures, and people in it. When they understand its ecology and diversity, the web of relationships it supports, and the rhythm of its cycles, they also develop an appreciation for and sense of kinship with their surroundings.

Michael Stone

Place-based education has documented roots that date back to the early 20th century when French educators worked with their students to collect and compile narrative of their communities to send to students in other villages (Smith, 2002). The Foxfire project of the 1970s was hugely successful and was aimed at cultural journalism as an appreciation of rural life and culture in Appalachia (Wigginton, 1989). Similar student led publications sprang up across the United States and endeavors have evolved based on these early movements. Several rural and indigenous communities are exploring the creation of websites as a means for students to learn about their communities and market their knowledge and community on a website. At the Sustainability Academy, the K to 5 school in this study, children learned about the history of their historic neighbourhood by stepping out of the classroom and into the local community. They explored and studied the streets and architecture, the local families, and businesses. They observed the
comings and goings of their neighbourhoods and interviewed longtime residents and recent immigrants. The culminating project was a colourful publication of student research and interviews, creative writing, and illustrations. Through investigating local cultural and historical events, students developed a deeper understanding of how the events related to their lives and of their families and communities. Their learning was connected to their experiences. Additionally, students developed a sense of pride and personal accomplishment, and they enjoyed the opportunity to share what they learned and created with a local audience that was invested and appreciated their work.

A curriculum that builds on the familiar and local validates the cultural experiences of its student and families. Teachers can then extend students’ learning from the local vantage point to the regional, national, and international (Smith, 2002 p. 588). Sobel (2013) suggested that this gradual progression from “close to familiar to distant and strange accurately mirrors the developmental transitions unfolding in the child’s psyche” (p. 31).

The various projects mentioned above and those of the place-based literature encourage students to inquire about their community and to collectively develop a deep knowledge of the place that is their community. Students become, in their commitment to place, connected to one another and enduring stewards of their natural, cultural and social environments.

The Value of Outdoor Experiences

Declining numbers of opportunities for outdoor exploration and learning, diminished understanding of where our food comes from and farming, and environment stewardship are pivotal concerns among researchers and educators, in the field of environmental education and child development (Louv 2008; Lutts 1985; Orr 1999; Sobel 2008, 2012; Wilson 1997).

Researchers are directing us more and more to the benefits and importance of connecting and
reconnecting with the natural world; as well as the need for more hands on, lived experiences (Louv, 2008; Sobel, 2012).

In 2012, Sobel lamented that children no longer encounter the wonders of the natural world on their own terms. He described how outdoor play is disappearing from the childhood landscape (Sobel, 2012). As children become more involved in organized activities, fewer and fewer children realize the joy of unstructured time. He further explained that exposure to nature is not enough and in the age of “look, but don’t touch” (para. 16). Children may be exposed to nature but deep and active exploration is thwarted by numerous external fears; fear of the unknown, fear of litigation, fear of upsetting the pristine beauty of a space. There is a great need and value in allowing children to immerse themselves deeply in nature play and to wildly explore their natural environment.

When outside, children get to work and learn bolder ways. Living creatures can be observed in their natural habitat. In nature, children investigate, explore, discover, find patterns, get lost, find their way, build, imagine, dream, invent, dig, get dirty, grow, nurture, and cultivate. Children possess an innate curiosity for the natural world, but as Smith (2002) and Upitis (2010) asserted, this curiosity remains largely untapped in schools where nature study is separate from the local and real-life experiences of its students, rather than part of it. The focus on general principles and global understandings prevents engagement with children’s immediate environment. As a result, children miss opportunities and an appreciation for the natural places around them.

Nature is diverse and constantly changing. It offers a broad range of possible interactions. Moore (1997) argued that nature is the greatest “open-ended experiential universe” supporting physical, social, psychological, and cognitive factors in a child’s development. He furthered that
thought and knowledge is stimulated by the “dynamic perceptions” that time in nature offers (p. 210). Likewise, Vaske and Kobrin (2001) found attachment to local natural resources, not increasing awareness of environmental issues, stimulated environmentally responsible behaviour in students. Smith (2002) offered that students benefit from the opportunity to engage and act on their natural curiosity. By investing in valuable time outdoors we reconnect and re-engage students with the curriculum through study of their natural (local) world (p. 589).

In Denmark, children are outdoors in all weather and all seasons. A famous Dutch saying goes, There is no such thing as poor weather, only poor clothing. Time spent outdoors in unstructured, natural environments has many benefits. Scandinavian children, ages 3 to 6, who spend the majority of their day in outdoor school environments were more creative, had less absence due to illness, and showed improved motor skill development (Fjortoft, 2001). Childhood obesity is lower in children who spend more time outdoors (Louv, 2008). Stone (2009) noted that according to 2003–2004 National Center for Health Statistics, 16 percent of children ages two to nine were overweight (p. 21).

Wells and Evans (2003) also found that children who spend a significant amount of time outside are more focused and less stressed. Wilson (1997) cited research by Proshansky and Gottlieb (1989) that “environmental play” contributes to social and cognitive development (p. 192). Moore (1997) strongly advocated for “daily hands-on contact with natural settings as essential to children’s health” (p. 217). He cited the benefits of natural settings and children’s contact with these settings to be many, including: multisensory, shaping cognitive structures necessary for continued intellectual growth, rousing imagination and creativity, boosts self-esteem, awards children a peaceful feeling, develops appreciation for natural systems through direct experience, to name a few (p. 208).
Schoolyard Greening, School Gardens, and Food System Learning

Acknowledging the benefits of outdoor experiences on children’s emotional, social, and cognitive well-being, national efforts in Australia, Europe, Canada and the United States have turned their attention to schoolyard greening (Rivkin, 1997). Titman’s (1994) research was cited by, Rivkin (1997) as instrumental in fuelling greening efforts as it showed children’s self esteem to be lower in schoolyards that were poorly designed and poorly maintained. This finding becomes critical when we consider the number of days and years that children spend in schoolyards. The act of greening a schoolyard employs students as co-creators and partners teaching the value of activism and stewardship (Rivkin, 2000). Habitat creation enables students to access the wisdom of the natural world firsthand, through all their senses. Restoring and maintaining a schoolyard pulls the community together, fostering positive ties between school and home. Wilson (1997) suggested that attention to the aesthetics of the school environment helps to foster an enduring commitment to the natural world (p. 194). She cited Palmer (1993) and Tanner (1980) whose research suggested that the single most important factor in developing a lifelong concern for the environment was childhood experience in nature. Annie Ball, educator and architect, is clear that the role of the playground is to “create a mini-world for children where they can explore the diversity of the natural world, using all their senses and intellectual capabilities” (Upitis, 2010, p. 56). She also advocated for school gardens that help students appreciate the web of relationships and interdependencies or as Ball referred to it “a nested set of relationships” (Upitis, 2010, p. 57).

School gardens are taking bloom across the country, some as one-offs and others as enduring ecologic and economic endeavors. A seed is a wondrous thing! Give a child a seed to
plant and be prepared for their soul (and yours as a result of watching them) to be transformed. Planting a garden with my Grade 2/3 and 3/4 classes may well have provided the most fulfilling (and challenging) teaching moments. The physical effort and knowledge required preparing the soil for planting became a constructive outlet for children to challenge their physical limits; as well as an opportunity to work together towards a common goal. The wonder and joy that flourished as the seed bloomed and took shape, and the inquiry that followed, provided for hours and hours of authentic sensory learning and teaching around basic ecological literacy. The garden also provided an opportunity for students who weren’t necessarily leaders in the classroom to take on new leadership roles. Children got dirty, worked hard, collaborated, observed with all their senses, inquired, formed hypothesis, acted on those hypothesis and inquired again. We observed the cycle of the seasons, flow of energy, and the impact of weather. We learned the impact of our actions (or inactions!) and came to attend deeply to the living–breathing garden in our care.

Harvest season brought a whole new set of joys. At moments I felt like I was watching a 3-year-old at an Easter egg hunt. The chorus of ohs and ahhs and wows filled the garden as the children rushed to uncover and discover the earthly gifts. Children dug, sorted, counted, and identified the biggest and the smallest and the weirdest specimens. Some of the food that we harvested was saved to make soup for our class (the less than perfect specimens) while the majority of the harvest was sold after school. Once a week over the course of a month we hosted a harvest market stand.

Another set of students shone in new opportunities for leadership as market vendors and organizers. Students loved sharing the tales of their work in the garden and the efforts to bring the seed to the table. Parents and community members were most gracious and appreciative of their fine harvest and labors. Selling their harvest imparted further value and an appreciation for the
effort involved (nature and human) to bring food to the table. Students were proud of what they had accomplished and walked away with a new sense of capacity, the confidence to care for the earth, and to provide for themselves.

Food is central to human survival; it is something that connects all of us the world over. Over the past two decades, school gardening has developed into a prominent educational movement (Stone, 2005, 2009; Waters, 2008). A wide variety of school gardens exist to this day, including kitchen and market gardens; indigenous gardens; permaculture gardens, and eco-club gardens. The gardens vary in size, and are integrated with an array of school curriculum and standards. Some gardens are led by individual teachers, some have specialist garden staff, and some rely on volunteers (Pascoe & Wyatt-Smith, 2013). Blair (2009) in her *Evaluative review of the benefits of school gardens* found that gardening positively affects students’ test scores and school behaviour (p. 35). Additionally she found that gardens improve the “ecological complexity of the schoolyard” promoting “effective experiential learning in…science, EE, and food education” (p. 35). Pascoe and Wyatt-Smith (2013) found that “school garden supports classroom learning through increased learner engagement (p. 43). The Edible Schoolyard Project’s students who garden have been shown to do better in a range of academic outcomes; tend to be stronger independent thinkers and have better self-esteem (Stone, 2009). Both studies noted that taking the time to make explicit links between the garden and the curriculum is important (Pascoe and Wyatt-Smith, 2013), and that more training is necessary to “effectively use gardening as a teaching tool” (Blair, 2009, p. 35).

**Schoolyard-Enhanced Learning**

Schoolyard-enhanced learning is a term coined by Broda (2007). He defined schoolyard-enhanced learning as, “an instruction strategy that uses the school site or adjacent areas to teach
concepts and process skills from a variety of content areas” (p. 12). Schoolyard-enhanced learning is teaching and learning that takes place on the schoolyard, outside of the classroom; is integrated with a broad range of topics and skills; is flexible and has no fixed time limit; and it adds variety to teaching and learning by enhancing curriculum studies through the use of the schoolyard and outdoor setting.

Broda (2007) suggested that schoolyard-enhanced learning is a subset of place-based education and is a complement to place-based education. He believes that once teachers reach a certain level of comfort in teaching from the schoolyard they will be more inclined to step out into their local community to embrace projects in greater depth. The benefits of schoolyard-enhanced learning are similar to those of place-based learning: clarify abstract concepts through direct experiences; help to motivate reluctant learners; offer variety and change of pace to teaching and learning; help to increase student understanding and achievement; and it is compatible with inquiry teaching and higher order thinking skills.

**Embodied Knowing**

Sir Ken Robinson (2006, 2011) talked about education as “the process by which we engage people in their fullness to give them a sense of who they are and their capabilities” (TED, Dalai Lama Center). He shared how standardized education does a great job of measuring students *ad nauseam* and obsessing over conforming students to a standard and prescribed norm. Regrettably, Robinson (2011) offered that standardized education remains largely a disembodied preparation that frequently fails to help students engage with what is in them—a diverse, dynamic, creative and distinct individual who desires to be socially responsible and connected to one another—to educate the whole being. Children live through their senses. Moore (1997)
offered that sensory experiences are the pathways that connect children’s experiences in the exterior world to their inner affective domain (p. 209).

Well before Moore, Steiner and Pestalozzi held that education was grounded on sensory impressions and only through proper sensory impressions would children achieve their potential (Upitis, 2010). Onore and Lubetsky (1996) wrote that treating content, pedagogy, and the environment as separate divides school from society and keeps students from knowing and experiencing their community and natural environment (p. 256). Education for sustainability and accessing the environment (be it the schoolyard or the community) as an integrating context employs experiential knowledge that involves senses, perceptions, and mind, body (and heart) integration.

**Real World Problem Solving**

Real-world problem solving is grounded in place. The vast possibilities for learning depend on the teacher and the school’s openness and willingness to support students’ engagement in learning that stems from student identification of a school or community issue requiring attention. Creativity, collaboration, communication are important skills that are developed when students identified issues, examined the characteristics of the problem, developed possible solutions, and collaborated to solve the problem. The teacher’s role is to draw connections to the curriculum and facilitate the process. Like cultural and environmental driven issues, problem solving takes students out of the classroom and into their schoolyards or communities. Seeing a problem through to a successful resolution fosters deep relationships with place and people in one’s community, is interdisciplinary in nature, and aligns the standards-based curriculum with meaningful application, but best of all, it provides students with a platform to realize how truly capable they are.
Studies suggest that when children encounter this level of authentic integration and engagement they will be more willing and likely to take similar action again in the future (Rural Challenge Research and Evaluation Program, 1999). Orr (2005) reminded us that the actual places we inhabit are the true laboratories where we can engage with tangible experiences and address real problems among diverse and complex systems and interdependent relationships (p. 88).

**Civic Engagement and Service-learning**

Involving students in the active role of community decision making and planning enables them to experience first hand what citizenship entails (Gruenewald, 2003). They learn how to communicate and listen, how to make plans, convincingly form arguments, and negotiate around issues that they are invested in and where their perspective and experience is welcomed and seen as a necessary contribution. These activities blur the boundaries between the classroom and the community and help students to feel valued and bonded to their communities (Smith, 2002). In place-based education students learn to become creators of knowledge, not merely consumers. Similar to inquiry based education, students’ interests, concerns and questions help to guide what is studied and how. Student ownership is positively correlated to their level of engagement (Hart, 2008). Smith (2002) asserted, “student ownership and engagement are much more likely to emerge when the students have had the chance to participate in the creation of their own learning agendas” (p. 593). Grounding the curriculum in place and rooting the student within their world allows the student to see first hand that their actions matter and that they can affect positive change in the community beyond the school; preparing students for local and global citizenship (Rural Challenge Research and Evaluation Program, 1999).
Kahne and Sporte (2008) examined, the impact of civic learning opportunities on commitment to civic participation. They found that students’ “sense of civic agency, social relatedness, and political and moral understandings” (p. 755) were fostered in classrooms where the curriculum offers “classroom opportunities with an explicitly civic dimension” (p. 755). Additionally they found, “…when youth experience neighbourhood social capital, it fosters civic commitments” (p. 756). We need to see students as resources to the communities they inhabit and to engage them as positive contributors. Hart (2008) outlined several ways that schools foster the development of democratically competent and responsible students, including: the nature of the teacher-student relationship; encouraging collaboration and student voice in curriculum decisions; and curriculum that relates to the daily lives of students and their communities (p. 57).

The foundational work in service-learning is attributed to Sigmon from the late 1970s (Felton & Clayton, 2011). In their review of the evidence for service-learning outcomes, Felton and Clayton (2011) explored how earlier definitions varied but reference to the components of service-learning are generally: linking community service to academic study; meeting identified community needs; and critical reflection. Similarly, the typical goals of services-learning include: civic learning, academic learning, and personal growth (p. 76). Essentially, service-learning calls on students to produce knowledge (not just consume it). Service-learning experiences vary given the local context and the learning objectives and constraints of participants (p. 76). Felton and Clayton (2011) found that service-learning was most effective when: goals were “appropriate and integrated”; where collaborative community partnerships prevailed, from start to finish; when all necessary components are “aligned and complementary”; and where an intentional yet flexible pedagogy leaves space for dynamic situations to arise (p. 81). Furthermore, they noted that
service-learning is transformative in nature and students come to see and be in the world through a different frame of reference. One that is integrated and interdependent.

**Ecological Literacy and Systems Thinking**

Noddings (2013) described what we need to cultivate and carry forward from 20th century education, and what we would be wise to reconceptualize. She discussed our need to replace “competition and over specialization” with “cooperation and connection”. She proposed an ecological approach that draws on “connections, balance, and whole communities of persons with ideas” (p. viii). An ecological or systems approach considers how schools, communities, and the ecosystem relate to each other. Capra (2005) urged “we can design sustainable societies by modeling them after nature’s ecosystems” (p. 19). Using the “language of nature” he noted eight values to ecological thinking and systems thinking: networks, nested systems, interdependence, diversity, cycles, flows, development, and dynamic balance. Similarly, Shelburne Farms’ Sustainable Schools Project (SSP) identified twelve “Big Ideas of Sustainability”: community, systems, diversity, interdependence, cycles, change over time, limits, fairness/equity, place, ability to make a difference, long-term effects, and equilibrium (p. 3). The overlap of values between Capra (2005) and SSP (2011) highlights the integral relationship between ecological and systems thinking, place-based education, and education for sustainability and the extent to which they are so closely interrelated.

However, Capra (2005) noted that mainstream culture and education afford very little attention to thinking about complex systems and systems thinking; though in the past it enabled traditional people to sustain themselves and at present it rests at the forefront of science (p. 19). He acknowledged two main reasons for this malaise. Firstly, living systems are networks, where traditional science, business and economic are based on linear thinking. Living systems optimize
variables and work in cycles; address sustainability not efficiency; and go for quality over quantity (p. 20). Quite the opposite is true for business and economics. Secondly, our materialistic modern culture values individualism and competition over living systems’ propensity for patterns, processes, and networks of relationships.

The SSP’s Guide to Education for Sustainability (2011) directs educators and curriculum planners to the three intertwined goals of Sustainability: economic prosperity, environmental integrity, and social equity. As educators, curriculum developers, and educational leaders, we need to examine the eight values of ecological and systems thinking and the “Big Ideas of Sustainability” within the larger goal of sustainability, and in conceptualizing how we apply the language of nature to the standards-based curriculum and pedagogy.

All living organisms are part of nested systems of networks, and they themselves are nested within larger living systems, and communities of systems. Applying the notion of nested systems we can appreciate the various systems for which students are nested within—home, school, neighborhood, community, watershed, bioregion, state, nation, globe. Reflecting on this principle, we come to appreciate that all ecological systems are interdependent, and that these life relationships are symbiotic. In addition, we must come to appreciate that diversity is what holds living communities together by encouraging varying opinions and differing world-views. Regrettably, diversity is threatened by mono-crop agriculture that imposes itself in even the most remote regions of our planet. In addition, we are surrounded by cycles—water, air, food, and the earth itself. By studying cycles, we observe that nature does not waste its resources the way that we waste its resources. An appreciation of nature’s cycles will help us to better reduce or reuse our own waste. The schools in this study practiced extensive composting programs to better illustrate this cycle; that one systems’ cycle feeds another.
Furthermore, development and coevolution are nonlinear. Many living systems have
developed in mutually beneficial ways. Growing school gardens introduces students to new foods
and healthy food choices; and can prompt positive transformation in cafeteria services. Finally,
all living systems exist in a state of equilibrium or balance. Continual feedback loops keep the
system in a state of constant tweaking to various influences.

Sterling (2002) contributed to the discussion suggesting that modern western culture is
grounded in a mechanistic view of the world. He is positive that ecological thinking can
transform all aspects of education from purpose, to planning, to practice. Ecological literacy
requires that students acquire the basic skills of literacy in reading, writing, math, science, and
social studies, and position these pieces into a coherent whole to moderate how to live in a world
of limits. Teachers can help students to integrate these subjects and to listen to the language of
nature, to appreciate the limits of our ecological systems and our complete dependence on these
limits, and to ensure a productive economy, healthy society, and thriving environment.

**Summary**

Extensive contemporary and historical literature has emphasized the interconnected
benefits of the outdoors and place-based experiences on children’s cognitive, social, and affective
well-being. Furthermore, the literature has recognized the importance of place and integrating
place in academic instruction as having a positive impact on the development of healthy
communities and ensuing quality of life in our communities. A rise in case studies illustrating
how schools have stepped out of the status quo schooling sheds light and inspires confidence for
schools on the cusp of change, and communities interested in how best to support a sustainable
way of life and sustainable systems.
The following chapter describes the phenomenological methodology of this study, preparing the reader for the reporting of the findings. The two subsequent chapters will present the results of this study as they relate to pedagogy and curriculum, and the enduring commitments that support the successful integration of inquiry-based, hands-on engagement and learning in the community with the standards-based curriculum standards.
Chapter 3

Phenomenology: A Fitting Inquiry

In the complex 21st-century world, there should be a healthy recognition of interdependence at every level.

Nel Noddings
Phenomenological Methodology

To truly appreciate how the teachers in these publicly funded schools teach through the lens of sustainability, in a standards-based curriculum, compels one to “experience the phenomenon as directly as possible” including, the “meaning, structure, and essence” of teachers’ “lived experience” (Patton, 2002). In this case, integrating teaching beyond the classroom, with the local natural and built environments, and the standards-based curriculum. Phenomenology was chosen as the methodology to provide a deep understanding for how teachers “make sense” of their experiences teaching beyond the classroom (McMillan & Schumacher, 2010; Patton, 2002). In-depth interviews with teachers who have directly experienced this phenomenon ensured a “lived” and authentic experience as opposed to a “second hand experiences” (Patton, 2002, p. 104). Groenewald (2004) cited Kensit (2000) who cautioned that the researcher must allow the data to emerge: “Doing phenomenology means capturing rich descriptions of phenomena and their settings” (p.11). This phenomenological study focused on descriptions of what teachers and administrators experience and the essence of how it is that they experienced what they experienced (Patton, 2002). Given that the boundaries between phenomenon and context are not always distinguishable (Yin, 2009) data were collected from multiple sources and multiple sites (Creswell, 2013; Yin, 2009) and occurred over an eight-month period, from September 2013 – April 2014. Data were collected through in-depth, unstructured interviews and site observations.

Ethical Clearance

Following Queen’s University ethical protocols, ethical clearance from the university (General Research Ethics Board) and the participant schools was obtained prior to entering the research sites (see Appendix A). Informed consent from the teacher participants, administrators, and the parents of the students in the respective classes (see Appendix B) were also obtained.
Verbal assent from the children was embedded in the parental consent. Permission for participation was granted for all children with only a few parents denying consent for photos to be taken of their child. Letters of information were distributed to teacher participants and parents of the students in the respective classes (see Appendix B). The letter outlined the goal and procedures involved in my research, informed participants of their role and their right to withdraw at anytime without consequence, and the procedure for collecting and managing the data from the research.

Anonymity could not be guaranteed as my research included photographs of the teacher and student participants, photographs of the classroom and schoolyard space, and the surrounding community, sample newsletters and lesson plan materials. However, the sharing of findings and results respects the confidentiality of all student participants to the fullest extent possible (McMillan & Schumacher, 2010). At the request of teacher participants, actual names of teacher participants have been used in most cases.

**Research Site and Participants**

To fully appreciate the phenomenon of teaching in a publicly funded school, where teachers successfully integrate the local natural and built environments with the standards-based curriculum, three sites representing elementary, middle school, and secondary school programs were identified. Providing a comprehensive investigation of this phenomenon across all grades, these three schools illustrate various ways that integrating the community and the natural environment with a standards-based education system may take shape over the course of a student’s academic career. It was a requirement that these programs be recognized as exemplary cases within the field to better understand the features that support this educational method and approach in K to 12 publicly funded programs and to support replication. As such, teachers,
schools and programs needed to be well recognized for their integration and use of the natural and/or built environments within their schoolyard or community, their curriculum, and for their civic engagement and community collaboration.

Seeking information rich cases, ones where I stood to “learn a great deal about issues of central importance to the purpose of the inquiry” purposeful sampling selection was deemed a fitting recruitment process (Patton, 2002, p. 230). Using purposeful criterion sampling allowed me to distinguish programs and individuals who would yield information rich teaching experiences. Based on my participation and site criteria (see Appendix C), both teachers and schools exemplified teaching beyond the classroom, accessing the local, and natural world to teach traditional subjects within the formal curriculum (McMillan & Schumacher, 2010). And, as I would come to learn, each of the three schools, and to some extent the teachers, received regional and national recognition for their programs and efforts. Furthermore, all three schools presented a range of experiences and approaches applied at the elementary, middle and high school level, in a geographical and climate region with many similarities to the eastern Ontario Great Lakes region.

**Participant Selection**

The initial participants, teachers from the K to 5 school, and the high school, were first identified at an Educational Sustainability Summit that I attended in 2013, called Making Connections: Education for Sustainability Summit (September 2013), located at Shelburne Farms in Shelburne, Vermont. Shelburne Farms is home to the Sustainable Schools Project. The Sustainable Schools Project works with schools, in Vermont and around the world, “to cultivate responsible, informed citizens, engaged in building sustainable communities” (http://sustainableschoolsproject.org). The Education for Sustainability Summit featured
educators and leaders in the field of Education for Sustainability from schools situated primarily in Vermont and the northeastern United States. The Sustainability Summit showcased exemplary projects, programs, schools, and students and teachers where a great deal of teaching and learning takes place beyond textbooks and the classroom, with place-based education, service-learning and civic engagement is an essential part of that approach. My reasons for attending the summit were twofold: to better understand the innovative and progressive work that is being executed in Vermont schools and to potentially recruit teachers for my study. Following the morning presentations, I approached various organizers and presenters, who met the recruitment criteria, to ask if they were interested in taking part in the study. Three Vermont teachers were approached and recruited for this study in this way.

The first teacher to be recruited was Anne Tewksbury-Frye, the Sustainability Coach and Grade 2/3 teacher at an elementary K to 5 school in Burlington, Vermont. She was well regarded at the conference as a knowledgeable professional in the field. Furthermore, she was an experienced teacher, of more than 20 years, who confidently addressed the school’s philosophy, history and the many aspects of the sustainability program and framework.

The second teacher to be recruited was Amy Lachance, another teacher and part-time Sustainability Coach from the same K to 5 school in Burlington, Vermont. Though not a presenter at the conference, this teacher presented with a wealth of experience and insight during one of the group work sessions, and she was plainly well respected among her teaching peers and colleagues. She too was an experienced teacher, with more than 15 years experience, well-versed in the history of her school and confidently addressed the school’s philosophy and sustainability program and framework.
The third teacher to be recruited was the High School Biology and Environmental Applications teacher Tom Sabo, from a high school in Montpellier, Vermont. He was an award-winning high school teacher, and founder of Center for Sustainable Systems (CSS) an “organization dedicated to bringing relevance and rigour to high school education in Central Vermont” (http://www.cssvt.org). He, too, was very well regarded at the conference as an experienced, more than 15 years, knowledgeable, and innovative professional in the field and as someone who actively integrates service-learning through gardening and food systems within the curriculum.

Once on site at the respective schools, snowball sampling enabled me to identify other information-rich key informants (Patton, 2002) that led to interviews with two subsequent teachers and two subsequent school administrators.

After visiting the teachers and schools in November, I made the decision to locate a middle school, to bridge the gap between the elementary and secondary samples. Including a middle school program completed the profile of this research study. Using the Center for Ecoliteracy’s Smart by nature: Schooling for sustainability, a publication that profiles innovative sustainability education programs and schools across the United States, I located a middle school in northern Maine that met my site and participant criteria. I visited the school’s website, the Ecology Academy’s website, Facebook page, and webcam. I located the gardening and greenhouse teacher and recruited him directly. He then recommended that I contact a former and founding teacher. Contact was made and recruitment secured, rounding out sites and participants for this case study.
Data Collection

Data were collected from teachers and administrators through in-depth, unstructured interviews, site observations, documents and artifacts, and photographs. Observational data were collected during visits to two of the schools. Each visit lasted one to two days, which allowed me to get a sense of the facilities and the day-to-day happenings of the class and school including, routines; resources, projects, teachers and schools expectations of students, relationships between teachers and students, teachers and teacher, and the school and the community; use of the schoolyard and community space to name a few. At the middle school location, face-to-face observations were not possible due to geographical distance. In this case, webcam footage served as the primary data source. To increase the richness of understanding of the programs, documents about the programs such as examples of assignments and projects, newsletters, and grade expectation and curriculum overviews and physical artifacts from each location were also collected. In the case of the middle school, Facebook posts provided a rich timeline documentary. Screenshots and photographs of these sites were taken to remember the details of the observations and to illustrate various features of the site and program.

Semi-structured interviews with teachers and administrators were conducted to gain an in-depth understanding of how teachers integrated the formal curriculum with the schoolyard and the local community. Questions centered on curriculum development, pedagogy and teaching practices, factors that contributed to the success of these programs, and an indication of how various obstacles were overcome without jeopardizing the integrity of the programs (see Appendix D). Data were collected using semi-structured interviews and class visits, observations, and photo elicitation.
Site Visits, Observations, and Teacher Interviews

During my visits to participating schools, class observations; in-depth, semi-structured interviews, photo elicitation, and artifact collection fulfilled the data collection requirements. Descriptive field notes were taken to record teacher approach, events, and activities; to best describe the teaching and learning that transpired during the lesson time (Hays & Singh, 2012). Observation protocols were used to document use of the outdoor space and included recording the events and activities and also noting the teacher’s approach to using and teaching within the space (see Appendix E).

<table>
<thead>
<tr>
<th>Data Collection Tool</th>
<th>Site 1</th>
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<th>Site 3</th>
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<tr>
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<td>Public Middle School</td>
<td>Public High School</td>
</tr>
<tr>
<td><strong>Type</strong>: Public Elementary</td>
<td>Place: Vermont</td>
<td>Place: Maine</td>
<td>Place: Vermont</td>
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<tr>
<td><strong>In-depth, semi-structured interviews</strong></td>
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<td>In person</td>
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<td>JT, THMS, TI</td>
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<td><strong>Observations</strong></td>
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<td>Virtual observations using webcams and Facebook</td>
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<td><strong>Physical Artifacts</strong></td>
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<td>Extracted from blog and Facebook</td>
<td>Student work</td>
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<td>School Newsletters</td>
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<td><strong>Photographs and video</strong></td>
<td>Site and objects, Students and teachers, lessons</td>
<td>Extracted from Facebook, website, blog and webcams</td>
<td>Site and objects, Students and teacher, lessons</td>
</tr>
</tbody>
</table>

Figure 1 Data Collection Table

Photographs were taken of the physical space, students’ work, and of children and their teachers as they engaged in teaching and learning through the lens of sustainability and within a place-
based and community-based learning context. Photographs were used to support observations and field notes.

Semi-structured audio-recorded interviews lasted between 60 and 90 minutes and were directed towards the teacher participants’ perspectives and lived experiences, “experiences, feelings, beliefs and convictions about the theme in question,” integrating the schoolyard and the community with the curriculum (Groenewald, 2004, p. 12). Participant photo elicitation followed the interview.

Participants were asked to take three photos that captured their experiences teaching beyond the classroom. Photos were taken using the iPad. The first photo was of a physical space of importance to the participant’s teaching. The second photo was of an object, something in that space frequently referenced, as a tool for teaching, or of significance to the work he/she was doing. The final photo was of the participant’s choice, but was of something that resonated with their work and goals for integrating teaching and learning with the natural and/or built environments in their community.

During this phase, I requested several artifacts for analysis including letters to parents describing teaching and learning beyond the classroom, letters from community members regarding achievements or appreciation, lesson plans, and student work. Artifacts and photos help to validate and describe actions, values, knowledge and experiences (McMillan & Schumacher, 2010). A list of suggested artifacts was sent to participants with the information letter, in advance of the first interview.

Data Analysis

The audio recordings from all interviews were transcribed verbatim. Data were transcribed as soon as possible after collection. Analytical memos, observational notes,
theoretical notes, and methodological notes served to strengthen trustworthiness of the data (Groenewald, 2004). The observational field notes and interview transcriptions were typed using Microsoft Word. The data were analyzed and organized qualitatively by the type of data collected, participants’ perspectives, relationships, activities and events (McMillan & Schumacher, 2010). To distinguish the “essences” of teaching beyond the classroom, I examined and compared teacher’s shared experiences (Patton, 2002, p. 106). Multiple readings helped me to gain familiarity with the data, to delineate units of meaning, and begin to establish segments for coding purposes. Particular attention was paid to themes that resonated across the multiple sources of data and notes were made in the margins about potential codes (McMillan & Schumacher, 2010).

The process of data analysis for this phenomenological study was not linear and as a result, the chapters describing the findings differ in style and content. Verbatim transcripts, photographs and field notes were continuously revisited to ascertain the greatest appreciation for the data. The process of identifying patterns in this way was a “circular one” or a “data analysis spiral” (Creswell, 2007) where I continuously progressed from, and revisited, the initial codes, patterns and themes to substantiate, tweak, and develop ideas accordingly (Creswell, 2007; McMillan & Schumacher, 2010; Miles, Huberman & Saldana, 2014). Emergent coding was a heuristic process whereby codes were selected for a chunk of data based on “careful reading and reflection of its core content or meaning” (Miles, Huberman & Saldana, 2014, p. 73). Both deductive and inductive methods for assigning codes were applied (Miles, Huberman & Saldana, 2014). Deductive codes were created prior to data collection based on the conceptual framework of place-based and community-based education, and the research questions (Miles, Huberman & Saldana, 2014). Inductive codes were grounded empirically (Miles, Huberman & Saldana, 2014)
and emerged with great frequency from onsite observations and interviews.

The results of this analysis have been presented in two separate chapters. Chapter 4 presents results associated with the emergent codes and themes from the First Cycle coding, describing the curriculum and pedagogy derived from the phenomenon of teaching through the lens of sustainability and based on teachers’ first-hand experiences and reflections. Chapter 5 presents the pattern codes revealed through Second Cycle coding. These findings are integrated with further literature and presented as enduring commitments.

**Emergent Codes and Themes**

Emergent codes were assigned to data chunks through First Cycle coding as a way to “summarize segments of data” (Miles, Huberman & Saldana, 2014, p. 86). These were typically descriptive and process codes, based on teacher and administrator interviews and program descriptions and observations. The initial reading and coding yielded 70 codes. Following the fourth and final reading, having merged codes and removed redundancies, I was left with 43 codes. Initial codes elucidated seven possible themes: children as agents of change; leadership and school transformation; connection to place and community; systems thinking; curriculum development; teacher values and teaching practice; and experiential learning.

Creating a coding tree or concept map helped to build a cohesive picture of the thematic categories and patterns emerging from these codes. Pattern codes consisted of categories and themes, causes and explanations, relationships among individuals and place-based and community-based educational theoretical constructs (Miles, Huberman & Saldana, 2014, p. 87). Using the Place-Based Education theoretical framework and Sustainability Education theoretical framework as guides, these thematic groupings were reduced into five core themes: (a) Community partners and connections to place and community; (b) Curriculum as process; (c)
Leadership and collaboration; (d) Experiential learning; and (e) Student voice and children as agents of change. The data were revisited and descriptive codes were redeveloped in consideration of the central themes. Once again these initial codes were revisited then regrouped into pattern codes through Second Cycle coding (Creswell, 2007; McMillan & Schumacher, 2010; Miles, Huberman & Saldana, 2014). Generating pattern codes facilitated “condensing large amounts of data into a smaller number of analytic units” (p. 86). Student voice and leadership emerged as revealed in this fundamental second cycle and are therefore examined in Chapter 5.

Using a “recursive process” allowed me to be attentive to supporting and contrary evidence in thematic categories (MacMillan & Schumacher, 2010, p. 377). A holistic and embedded analysis of themes is important for understanding the complexity of each case (Creswell, 2013, p. 100). I explored resulting themes for a “within-case analysis” (Creswell, 2013, p.101). Then, I applied a “cross-case analysis” to look at themes across the three schools or cases (p.101). ATLAS.ti (© 2002–2014, ATLAS.ti Scientific Software Development GmbH) was used to help analyze the qualitative data and aid in identifying co-occurrences and relationships between codes. Within the theme “Student voice and children as creators of change” of the 43 first cycle codes, 19 co-occurred within this theme. “Student voice and children as creators of change” co-occurred and intertwined with the following codes (a) accountability to one another and collaboration; (b) community partner and community support; (c) inquiry and critical thinking; (d) sustainability education; and (e) teaching practice. These themes are addressed in the following chapters, integrating data results and additional theory, confirming that everything is intertwined, as it is in a complex system.
Citing Data

When quoting participants, reference is made to the individual—using the individual’s initials, the school—using the school’s initials, and whether or not the data were collected through a teacher interview or an administrator interview—TI or Adm. For example, an interview with Tom Sabo would be cited as TS, MHS, TI.
Chapter 4

Curriculum as Process

Raising whole young people is like raising good food. It is a sacred practice; it requires waking each day and seeing things anew, responding to the moment, listening, paying attention, observing.

Michael Ableman

Figure 2 Squash grown by students on display in the MHS library
A JOURNEY TO THREE REMARKABLE PUBLIC SCHOOLS

Kindergarten to Grade 6

Driving into the heart of downtown Burlington, Vermont, I am met by Lake Champlain’s steely expanse and I follow its cruel November edge along Battery Park to the Old North End. A small, oxidized mermaid dressed in a soldier’s uniform with a kettle in hand, catches my eye as if to greet me from her perch atop a building as I approach North Street. I am curious to learn exactly why the mermaid is purposefully directing me westward with her kettle, but it is nearly 8:00 a.m. and my GPS tells me that I must continue east along North Street. Though leaving the mermaid and her curious history behind, North Street does not disappoint. It is a colourful mix of residential and commercial buildings, old and new, and at this hour in the morning it is a bustle with a culturally diverse tapestry of families and children, pedestrians and bicyclists, leading the way to the Sustainability Academy.

Only seven years ago, the Sustainability Academy was known as Lawrence Barnes Elementary School. Lawrence Barnes started serving students and families in Burlington’s North End during the late 1880s and was relocated to its current location in the 1950s. In 2006, Lawrence Barnes was identified as a “failing school,” according to the 2001 No Child Left Behind Act. It was one of two K to 5 schools in the Old North End, the poorest neighbourhood in Burlington, and one of the poorest neighbourhoods in Vermont. Compared to the other four, public elementary schools in Burlington, Lawrence Barnes was skewed towards kids not doing well, with lower than average test scores and a higher concentration of children in abject poverty compared with the rest of the city. Socio-economic indicators revealed that, at that time, 95% of students qualified for free or reduced lunch program, while the district average was around 50%
(VP, SA, Adm). In 2006, the Burlington School Board and the school community, along with the city, recognized that this kind of disparity was not acceptable.

The School Board recommended closing Lawrence Barnes and redistricting the students among Burlington’s other elementary schools as one way to address the socio-economic disparity. The community was understandably outraged at the suggestion of removing “the heart” from the Old North End community. In response, the School Board formed a task force comprised of parents, community members, teachers and administrators to look at alternatives to closing Lawrence Barnes. The primary responsibility of the task force was to identify alternative solutions to school closure that would academically advantage students in low-income families.

In the end, the most popular strategy adopted by the School Board was to establish two elementary schools, bringing socio-economic disparity into balance by drawing families from across the city into the Old North End. Input was then sought from the community on potential academic themes. The feedback from the community very clearly demonstrated preferences for arts, science and math, and sustainability to be front-and-centre as the three preferred academic themes for the Burlington community.

Lawrence Barnes had an existing relationship with Shelburne Farms and the Sustainable Schools Project. Teachers had previously engaged in and were committed to deep professional development with respect to transforming the school through the lens of sustainability. Consequently, it made sense to continue that effort at Lawrence Barnes and for the other Old North End school to become the Integrated Arts Academy. The School Board voted to accept this proposal in 2008, and in 2009 Lawrence Barnes became the Sustainability Academy, one of Vermont’s first publicly-funded magnet schools and the first sustainability themed elementary
magnet school in the United States. At the time of writing, these two schools remain Vermont’s only magnet schools.

The Sustainability Academy currently operates under a truly remarkable, hands-on principal whose congenial and inspiring leadership practice is wildly attributed by teachers, administrators and community members for the ongoing success of the school. A K to 5 school, the Sustainability Academy serves around 180 students representing a rich tapestry of ethnic and racial backgrounds. Nearly 20 fulltime teachers comprise the teaching staff with two part-time Sustainability Coaches. Sustainability Coaches were introduced by the Burlington School District in 2009, based on the prior success of discipline specific coaches in literacy, science and mathematics. Sustainability Coaches support and advocate on behalf of teachers, collaborate with the Sustainable Schools Program staff, support families in understanding sustainability education, and form partnerships and liaise with community partners who are well respected leaders in sustainability. In comparison to previous statistics, 68% of students now qualify for free or reduced lunch compared to the district average of 52%, while about a dozen students are considered homeless.

The Sustainability Academy’s (SA) mission is “to educate and empower students to improve the quality of life for all—economically, socially, and environmentally—now and for future generations” (http://sa.bsdvt.org). In preparing students to “be responsible citizens and agents for change in their community and beyond” (http://sa.bsdvt.org), the SA values place-based learning, project-based learning, and service-learning within an integrated approach to teaching and learning that fuses social justice, economics, and environmental literacy with the curriculum. Whole school collaboration is valued as an intentional and expected practice in working to integrate the curriculum. Furthermore, a strong collaborative partnership remains with
Shelburne Farms providing curriculum support and professional development for teachers with respect to place-based learning and sustainability education.

Stepping outside the school, one is greeted on all four sides of the school building by an inviting and lively green space. Raised garden beds abound, quiet nature corners beckon, and open-air outdoor classroom spaces exist for both grade school and early childhood students. The principal is very passionate about naturalizing the schoolyard and he has had a big hand in accessing funds and establishing partnerships to set his green schoolyard dreams in motion for the students and teachers at the Sustainability Academy. When a student returned from Shelburne Farms and shared his joy and enthusiasm over learning in the outdoor classroom structure at the farm, the principal wasted little time designing and calling on a friend to help him build a similar structure for his students in the schoolyard.

Nearly a decade later, the magnet schools coordinator asserts that the students at the Sustainability Academy “are getting a first rate education now!” (VP, SA, ADM) Confirming:

…all the measures are through the roof now. The affective is through the roof and the cognitive measures are following close behind. But if you don’t have the affective, I am a huge believer that the cognitive is just never going to come, forget about it, it is not happening. The students are in a place where they are receptive to learning now. They now have access to resource and they have peer models. (VP, SA, Adm)

He further confirmed that the standardized tests administered under the New England Common Assessment Program (NECAP) “show an upward trajectory in math and reading” (VP, SA, Adm). Additionally, attendance rates have improved and the school now has a waitlist for Kindergarten.
Grades 6 to 8

My journey to the middle school was not the picturesque drive through winding North-East Kingdom villages. Instead, my journey to the middle school was a breathtaking excursion on the information superhighway. The journey began here on the coast of Maine:

Figure 3 Map of Belfast Maine
https://www.google.ca/maps/place/Troy+Howard+Middle+School/@44.4123565,-69.02723,13z/data=!4m2!3m1!1s0x0:0x1bf9a3b25e460033.

Having found my bearings; the real journey was about to unfold with the next connection unlocking an extraordinary excursion to the final destination, http://thms.rsu20.org/home/academies-programs/ecology-academy. Winding closer to the journey’s end I arrived at http://gardenproject.wordpress.com only to learn that yet another link would take me closer to the heart of my destination, http://www.facebook.com/pages/Troy-Howard-Middle-School-Garden/461997233878911. What a remarkable and unexpected turn! It was here that I became immersed in the daily happenings and found myself, one without a Facebook account, firmly fixed to this Facebook site. This could have been the icing on the cake, but the journey wasn’t over; I had one more passage to explore:
http://www.schoolgardenproject.com. At this point, I knew I had arrived. The garden and greenhouse webcams allowed me, the observer, to be onsite in real time and in rain, snow, wind and sun. To observe student and teacher exchanges and to watch their efforts mature and give way to an impressive garden yield and a bounty of smiles.

Troy Howard Middle School (THMS) is a rural public middle school, located in the coastal town of Belfast, Maine. The school sits on a large wooded lot within walking distance to the downtown. THMS’s nearly 50 staff and faculty serve about 400 students in grades 6 through 8, from six neighbouring towns and communities (http://thms.rsu20.org/home/about-our-school). According to the School Efficiency Profile of 2009–2010 (http://usm.maine.edu/sites/default/files/cepare/1602.pdf), nearly 53% of students at THMS are eligible for free/reduced lunch, and nearly 25% receive special education services while fewer than .5% of the students have limited English proficiency.

THMS offers three theme-based multi-year learning academies for its students. In the spring of their Grade 5 year, a variety of considerations determine how students will be divided and placed into one of the three learning academies—Ecology, Innovation, or International. The theme-based academy approach provides a rigorous integrated curriculum that is strongly rooted in inquiry-based learning at a local level, and in alignment with the Common Core Learning Standards (http://www.maine.gov/doe/commoncore/). The three-year themed academy approach facilitates a depth of learning and maximizes relationships between students and teachers, students and their fellow peers, and students and the community.

This study focused on the Ecology Academy. The Ecology Academy affirms that it is:

committed to a process of teaching and learning that focuses on relevant, real world experiences, that incite our natural curiosity for learning and that allow for learning opportunities that have
real, concrete value to not only our students, but to our larger community as well. (http://thms.rsu20.org/home/academies-programs/ecology-academy)

Students in the Ecology Academy experience learning and working in different divisions including, but not limited to, the Composting Division, Greenhouse Division, and Seed Division. A major component of the Ecology Academy is the impressive outdoor learning environment. THMS is located on over 80 acres, including a 60-acre wooded lot, a pond, nature trails, a 22,000 square ft., ½ acre garden, a greenhouse and a hoop house, seed collection, an outdoor solar kitchen, a cob wood-fired pizza oven, and composting operations and worm farms.

The expansive garden project was established in 2001, under the passionate vision of Steve Tanguay. The 30 x 45 foot greenhouse was built in 2002, and the farm stand was completed in the spring of 2003. The award-winning garden is a thriving outdoor classroom and lively laboratory that allows students in the Ecology Academy to learn experientially through an integrated curriculum while making a difference in their school and community. The Ecology Academy’s garden-centered curriculum has gained the attention of the media, community members and other school districts, both regionally and nationally. Its unique four-season gardening, in student built greenhouses, and carefully crafted integrated curriculum is seen as both a regional and national model for school agricultural programs. In a little over a decade, the garden project has evolved to become a self-sustaining program that works collaboratively with local farmers and businesses in serving the wider community. Produce grown in the greenhouse and garden is served in the school lunch program, sold at the local coop and the school’s market stand, and donated to the local soup kitchen—fostering social awareness and a responsibility to one’s community.
High School: Grades 9 to 12

It is 7:10 am on a snowy November morning. A restorative sigh fills my lungs, my being, and the interior of my car as I pull off Interstate 89 and gently wind my way through the granite outcroppings and tangled wilderness into Montpelier, Vermont. Montpelier is known as the smallest state capital in the country with a population just over 8,000, but it is also celebrated as a progressive and forward thinking community that supports the arts, outdoors pursuits, and a commitment to a sustainable agricultural economy.

Montpelier High School is located at the edge of Montpelier, nestled between the interstate, the downtown, and the Winooski River. It is a public secondary school comprising Grades 9 through 12, with an enrolment of slightly fewer than 320 students. According to 2013 statistics, around 21% of students at MHS qualified for the free or reduced lunch program. Of the 65 faculty and staff, 36 are teaching faculty. The school is guided by a school mission statement that declaims, “Students will be capable, motivated contributors to their local, national, and world communities.” The school also claims a strong commitment to service-learning, a partnership that is seen as a “win-win” relationship for students and the surrounding community.

In the 2014 US news ranking (http://www.usnews.com/education/best-high-schools/vermont?int=9abb08MHS) Montpelier High School ranked in the top 2.8% of American high schools -- #722 of American high schools and # 2 in Vermont. The teacher to student ratio average is 1:9, somewhat below the state average. Sitting in on a full faculty meeting it became quickly evident, by the actions of the school leadership and the language used by faculty, that teachers at MHS are committed to forming positive relationships with students and to knowing their students well.
MHS is also home to a solar-powered green house, hoop house, gardens, and the innovative faculty member behind these initiatives, Tom Sabo. In 2003 Sabo noticed that there were many inconsistencies between what he was teaching in his classes and what was happening on a larger level in the school—from the food that was being served in the cafeteria, to composting and recycling efforts, and even the kind of cleaning products that were being used. He collaborated with other like-minded faculty members with a vision to make the school a model of sustainability. He coordinated a group of about ten MHS faculty members who volunteered their time, as the Sustainability Group, and were committed to reducing the ecological footprint of the school and to integrating sustainability concepts across the curriculum. Growing food onsite, to be used in the cafeteria was an important component to this initiative. The group met monthly and raised funds to begin work on the greenhouse. During the summer of 2004 the slab was poured and construction began. Students enrolled in Community Connections, under the guidance of two faculty members, built the greenhouse for a math credit over the summer. A successful trial planting in the spring of 2005 paved the way for production planting during the fall of 2005.

Biology students in Sabo’s AP Biology classes now grow and tend to the salad greens that are served daily in the school’s cafeteria. Sabo’s Environmental Application students start plants in the greenhouse, then transplant the plants to the surrounding garden beds and tend to the beds through harvest in the fall—culminating in a very successful Harvest Celebration. The year I conducted the research marked the 5th annual Harvest Celebration, where students and faculty attended sustainability-themed workshops and enjoyed a localvore feast that featured MHS grown vegetables.
The most recent addition to the gardening initiative has been the hoop house. Sabo acquired grant funds to purchase the hoop house and constructed the hoop house in 2012 with his students during classtime. The hoop house contained tomatoes, peppers, greens and carrots. The carrots that were still in the ground at the time of my visit were to be used for the school’s Thanksgiving meal at the end of November.

**A Curriculum of Change**

The three schools featured in this phenomenological study leave me feeling optimistic that an authentic and meaningful education integrated with real world happenings beyond the classroom can be a reality for our children and our communities. Change is a manageable prospect and a curriculum of change is one that teachers, school leaders and parents are starting to stand behind in increasing numbers.

A curriculum of change does not mean abandoning the mothership altogether. That would be far too easy, or far too difficult, depending on how one looks at it. The standards can act as guidelines in the areas of curriculum, assessment and achievement; and let’s be honest, not all standards are bad, nor should having standards be considered a negative. I believe the discord rests in looking beyond fitting children into one-size fits all, compartmentalized standards in educating for a future workforce, to identifying and honouring the moral standards that we want to encourage. Many that are more in line with the enduring attributes we want to foster in humans and for the well-being of our communities and for sustainable society. The teachers from the public schools in this study value process over content and they have found creative ways to work with the existing standards. In doing so, they promoted and fostered the values and human attributes desirable to a sustainable society and for their teaching and learning environment. In this chapter I will begin by sharing some of the features of these schools and programs, both
curricula and pedagogy, and then explore the development of the curricula and conclude the chapter by exploring teacher values, practice and professional development.

**Interconnectedness of Human and Natural Systems**

A major thread for all three schools was the interconnectedness of the human and natural systems. Encouraging learning in and through the interconnectedness of human and natural systems promotes teaching and learning that is both relevant and rigorous.

The Sustainability Academy worked from the Sustainable Schools Project framework. Interconnectedness is a critical feature that enables students to grow as citizens engaged in creating sustainable communities. ([http://sustainableschoolsproject.org/education/venn](http://sustainableschoolsproject.org/education/venn))

![Figure 4 Sustainable Schools Framework](Image)
In the Sustainability Academy handbook, there are ten “Guiding Beliefs about Education,” and five of the ten draw attention to the importance of the interconnectedness of human and natural systems. One of the sustainability coaches explained that the curriculum for students at the elementary school is built around year-long themes or “year-long essential questions” (ATF, SA, TI). Posted in each classroom are beautiful banners that announce the theme or essential question for that grade.

In Kindergarten students explore “what and who makes up their community and how these communities [human and natural] need one another and are dependent on each other” (ATF, SA, TI).

For Grade 1 the essential question is “How are people and nature a community?”

Students build on their understanding of communities and they begin to explore cycles, seasonal and economic. A poster outside the Grade 1 corridor door revealed the three big ideas that support how people and nature exist as a community: cycles, change over time, and interdependence. On closer examination, the curriculum outline for Grade 1 (see Sustainability Academy website) reveals the significance of interconnectedness and its relevance in teaching citizenship and community as well as the integration of the district and state standards.
In Grades 2 and 3, students continue to explore in greater depth the interdependence of systems (human and natural), responsibility within these systems, and diversity among and within human and natural systems. The guiding question for Grades 2 and 3 is “What is diversity?”

By Grades 4 and 5, students have had lots of opportunities to practice stewardship and active citizenship, and they are ready to critically examine and reflect on “what makes a sustainable community?” and how to use their voices to affect the change they want to see for their community.

In conversations with the Troy Howard Middle School teachers, and in following the school’s Facebook account and garden webcam, it became apparent that ecological, human (social) and economic interconnections are established early on. One of the teachers couldn’t emphasize enough the need that exists for teaching and learning that is interconnected with our human and natural systems, “we need to, we must do this work because a large part of us is becoming disconnected and disengaged with life in general” (ST, THMS, TI). With nearly an acre of garden, a year round green house, and a hoop house to tend to, students quickly develop an appreciation for seasonal and ecological cycles and patterns and a deep sense of responsibility for human and natural interconnectedness and interdependence. Furthermore, they see the impact
that their efforts in the garden project have on their local community through a number of different civic engagement opportunities. One teacher describes the mutual benefit of sharing produce from the garden with the community:

Every Friday we make a big, big delivery to the soup kitchen. The kids are driven there during their lunch hour [they take rotations so that those who want to can participate] and they bring the food right into the soup kitchen, and sometimes they help to prep it. So they get to see a part of the community they don’t normally get to see. Usually the typical way is to make a monetary donation and people don’t usually get to see the other side, our students get to see the direct impact [of their work]. (JT, THMS, TI)

On economic and community interconnectedness, another teacher spoke of students’ awareness of who grows what in the community, what products are available from local sources, and where the gaps are that need to be filled. That gap for this community was the lack of availability of local produce in the winter. As a self-sustaining program, teachers chose opportunities to self-fund outside of commercial candy and chocolate fundraisers. The process behind this decision was explained within the context of the local community:

Figure 9 Facebook post THMS Co-op
The way that we keep the program going … I don’t allow them to sell anything that they don’t grow or make, and I don’t allow kids to sell anything that local businesses sell… So we met with local farmers and stores about what niches we could meet that they can’t, and this built everybody’s business. So when we started, we met with the local co-op in town (not your traditional co-op, but a food co-op in the centre of town where everybody goes). So they move a lot of local produce but they weren’t selling any local produce in the winter. So we started to do that and because we had a heated greenhouse we could do that. So then local farmers were able to do hoop houses in the spring and fall to shoulder what we do in the winter and so now together we can offer (the community) year round local produce. That way the school and the local businesses and farmers worked it out to help each other. (ST, THMS, TI)

Swiss chard delivery days occur weekly between late fall and early spring. I was told, “It is like bread day; it goes so fast!” I also learned that Tuesday is senior’s day and they [the seniors] are always waiting and they greet the students and declare, “you have the best Swiss chard”, followed by “why are you late, we’ve been waiting!” When they harvest extra greens to take down to the co-op they get the same reaction, “you have the best greens.” One teacher commented, “the kids are really proud, and it is really neat to see this interaction” (JT, THMS, TI).
The students’ Swiss chard is located in the produce section with all of the other produce from California, but it has the garden project and school logo on it, designed by students of course!

Seed-saving is another amazing opportunity that students have in this program and at the high school level, to develop an even deeper appreciation for ecological stewardship, natural cycles and change over time, as well as, the relationship between ecological conditions, human activity and seed quality and preservation. As a result of growing heirloom vegetables and saving heirloom seeds, students develop a deeper sense of place and a profoundly meaningful connection the local agricultural and social history. The seed tells a richly varied story one that will continue to be passed from generation to generation thanks to the teachers who recognize the value in teaching their students the benefits of heirloom seeds and seed saving, and honouring (though it requires much more effort) our human and natural history.
At Montpelier High School I was most impressed by the academic rigour I observed with respect to the cross-disciplinary approach to developing an appreciation for the interconnectedness of human and natural systems. Early in the year, the Biology and Environmental Applications teacher had his students read “Deep Economy” by Bill McKibben (2008). He gave students questions to guide their discussions and reflections and encouraged them to engage in deep reflection on some critical issues with respect to ecological literacy, and the relationship and interdependence of human and natural systems (See Appendix F). Subsequently, students were engaged in a number of cross-disciplinary service-learning projects that allowed students to see the big picture, the connections among disciplines, but also allowed students the opportunity to explore the subject with greater depth and understanding. Cross-disciplinary service-learning projects included: a chicken coop project, an herb garden, the Fall Harvest celebration, aquaponics, low-input farming, the hoop house, seed saving and the seed lending library. The students who organized the Fall Harvest celebration were also working on a school-wide paper audit at the time of my visit. Each of the projects offered unique and rigorous challenges with ample time for identifying community resources, building relationships and communicating with community.
members and local experts, for inquiry and hands-on problem solving (with lots of trial and error) and for trying on new roles and new responsibilities.

Figure 13 MHS Aquaponics in the Greenhouse

Discussing why he teaches through these cross-disciplinary, service-learning projects, Sabo explained, “… they get to share (through their projects) this bigger picture, this vision of how everything is connected, the large socio-economic and ecological pieces” (TS, MHS, TI). Taking the interconnectedness piece a step further, the teacher introduced his students to Stella, a systems software that explores systems thinking and connections through patterns of stock, flows, loops, and webs. The students were thoroughly engaged in the content, the process and in conceptualizing how to create stock and flow diagrams for their service-learning projects. When
asked to share why it’s important to introduce his students to this program and to teach them
about systems and systems thinking, Sabo offered:

I think the systems thinking and connections is really important
because it transcends content and is applicable to any situation. It
is a process, it is how they ultimately assess something that they
are faced with and redefine their approach. Right now there is a
real focus on critical thinking and problem solving [in the
standards], but we don’t really give them the opportunity to
practice it or the skills to do that with–[systems thinking] gets at
it. It gives them the opportunity to look at a situation and break it
down into the rudimentary elements and define the roles and
then start to identify how they relate to each other. And once
they do that they have this power of prediction, and once they do
that it may be off but they can go back and look at that system
and examine the relationships and roles, and the patterns in how
relationships and roles relate to one another; it is all about
patterns. So this is the direction that I have been moving. I have
been doing the systems thinking talk with my classes for a
couple years now, so now I am really excited to do the modelling
piece; and I think it is going to work. We did a big chunk today
and the kids were really into it and interested in getting the
software on their computers at home. Ideally they are going to
culminate doing stock and flow models of their service-learning
projects. (TS, MHS, TI)

Reflecting on our conversation, I was reminded of the quote by naturalist, ecological
thinker, and activist John Muir (1911), “When we try to pick out anything by itself, we find it
hitched to everything else in the universe;” (p. 110) affirming the valuable educational efforts, by
all three schools, to help students to make meaningful connections and appreciate the
interdependence and interconnectedness among human and natural systems.
The Garden Centered Curriculum

All three schools in this study honour respect and reverence for the natural world. One of the ways they do so is through a gardening and food systems curriculum. The school garden is a place of beauty, wonder, joy, struggle, disappointment, and heartbreak; and a never-ending source of knowledge. Gardens are accessible to all and we can appreciate gardens using all of our senses—most gratifying perhaps in tasting the bounty that is generated from our collaborative efforts with the earth. Stone (2005) suggested that gardening teaches basic ecological literacy through preparation of the soil, planting the seed, appreciating the energy and elements that transform the seed and the development of the plant, the budding flower and the resulting fruit or vegetable, and allowing the plant to go to seed (or saving the seeds) thus completing the cycle. But, the wonder, teaching, and learning should not end there. He promoted garden based learning and extending these early concepts of ecological literacy to using the garden’s bounty in the
outdoor kitchen, school cafeteria or classroom fostering an appreciation for the “flow of energy from the sun to plants and animals, planetary cycles of water and weather, the interdependent web of relations embodied in every bite we take” (Stone, 2009, p. 23). Working in the school garden and exploration in the natural world awakens in children the wonder and awe that only nature can provide. It is through “immersion in the natural world” where students can encounter nature in the rich, messy ways in which it actually exists, and truly come to appreciate the “web of life, cycles of matter, flow of energy” (Stone, 2009, p. 13). Gardens support many leaning styles and teach children to care for something that is alive and that depends on regular attention. Gardens also help to cultivate appreciation for its development. Gardening is messy and it requires one to “dig in” with hands and head fully engaged in the work. But gardening is also highly rewarding, satisfies the soul and, as I heard from all teachers, it should be integrated with the curriculum as academically rigorous work. Gardening is also highly relevant and applicable to all. From the elementary level,

The environment is definitely important here, from reducing our direct impact on the earth to gardening and raising our own food. The number of raised beds [in the schoolyard] is amazing for a school of 200 kids, and each class maintains and plants a bed or two. The 4/5 class now hosts a market every Friday and they have to think about and plan for what sells and which crops can be harvested when they are in school. (VP, SA, Adm)

To the high school level, affirming the relevance of gardening and food systems curricula,

[Garden based curriculum] is a really good way to teach what we are already teaching. It is about student engagement because everyone eats. So we have the relevance because everyone eats, we have the rigour because of the complexity of the food system, and the relationship piece is a little bit the art of teaching. (TS, MHS, TI)
Bringing relevance and rigour to high school education is the aim of the Centre for Sustainable Systems (CSS); they advocate promoting the food system as a vehicle for teaching “purposeful, experiential lessons across a variety of academic disciplines.” The founders describe the importance of teaching through the food system on their website:

Everyone eats. The relevance is apparent. The food system impacts environmental issues such as climate change; water, air, and soil pollution; resource depletion; and energy consumption; in addition to human health and nutrition. It provides access points and context to study history, psychology, economics, and sociology; and a framework to apply math and foreign language. The food system dramatically illuminates the importance of, and frequent conflict between the social, ecological, and economic needs of society (http://www.cssvt.org/about)

Yet another teacher, when asked why food focused learning was important, echoed the relevance of teaching through gardening and food systems, and asserted that with childhood obesity reaching epidemic proportions and more money being spent on health care than nutrition we can’t afford to not teach through the food system. He drew attention to curriculum integration and relevance as well as to the fact that better nutrition is linked to increased school achievement and cognitive functioning, as well as improved behaviour, cooperation and attention.
In the *Uses of Active Plant-Based Learning (APBL) in K–12 Educational Setting: A White Paper Prepared for the Partnership for Plant-Based Learning*, Scott P. Lewis (2005), summarized the positive impact of plant-based education.

…plant-based education can have a positive impact in a number of areas important in children’s lives, including self-esteem, attitudes toward school and the environment, social development, physical and psychological health, creative thinking and problem solving, and effective learning of science and a variety of other academic subjects (p. 13).

In closing, all three schools emphasized the important role that the school garden and food based curriculum plays in introducing students to new foods, healthy food preparation, and healthy eating habits. There was no doubt expressed by any of the participants that preparing and eating meals together strengthens community, children’s confidence in food preparation, and children’s willingness to try new foods. In my own classroom, making and enjoying soup together became a time honoured weekly ritual, for several years running. It was a stone soup,
meaning that it was crafted from whatever vegetables students brought in from their gardens, cold storage, or chose on their last family visit to the market or grocery store. The children looked forward to soup day (as did I); to sitting around a large table peeling and chopping (with real knives) and sharing in conversation, telling stories of personal or family exploits, singing or crafting stories as we worked. Without fail, year after year, children were always more willing to try new vegetables, and new soup concoctions, if they had contributed to the soup and participated in the creation. One of the middle school teachers spoke of the educational value and importance of cooking with students:

We have an outdoor kitchen that is solar powered/heated that we have built with grants. Fridge, kitchen stove, sink [collect water off the roof] and we do a lot of cooking and I think the important thing is to teach these kids what good food is and how vegetables can be cooked so that they realize how delicious this food really is. One of my favourite things, we plant late corn and so we are out there in September working and I rip an ear of corn off and hand it to them and say here, eat this. And they say, “Well we don’t have any hot water, we can’t cook this.” And I say, just try it; you won’t believe how good it is. And they try it and love it. So they are learning what real food is, and their habits are changing and hopefully that is going to help with the obesity problem in the US. (JT, THMS, TI)

Eating together and sharing in the collaborative efforts of the harvest, be it the autumn harvest or the March sap harvest, is a time of celebration and reflection. All three schools recognized the value and the joy in celebrating the harvest with school, family, and community; cultivating community as well as reverence for the soil, the seed, the bounty, the natural cycles and the collaborative effort between earth and human
to bring healthy food to the table. At Troy Howard Middle School and the high school, students play an important role in planning, preparing, serving and enjoying in the communal meal, right down to designing programs, and providing musical entertainment. Students at MHS designed T-shirts for the 2013 Fall Harvest Celebration. The student artwork was also featured on the program of events (see Appendix G).

**Relevance, Rigour and Responsibility**

Relevance, rigour and responsibility came up time and time again in discussions around garden and food system curriculum. Sabo shared how a Spanish teacher in his school brought her class to the garden to do an integrated unit. He was planting potatoes with some of the students when one student said, “Ugh, I have done this in Grade 2, 5, 7 and now again.” Sabo responded with, “Oh that is great we repeat all of the valuable things, I bet you had math those years too.” But the student shared that in math she had addition one year, then multiplication, then fractions and then business math and so on; suggesting that the progression in math over the years was more rigorous than simply planting potatoes every year. Another teacher affirmed that academic rigour is just as important in the gardening and food systems curriculum as it is in other subjects; otherwise students lose interest and the significance of the subject matter becomes devalued.

The Troy Howard Middle School gardening project is indeed a rigorous program. It is a very hands-on program and academic rigour is the key to its success. The founding instructor insisted on a high standard of academic engagement, variety and challenge. As a result, students are motivated and proud of the project and their work.

…part of this was building in the other components like being really smart with stocks and knowing how to use a CAD program to draw. And we built budgets and presented to the banks and the banks would tell the kids, “You know half of the business people we meet who come in for loans cannot do what
you just did!” And they took that to heart and thought that was cool.

He later added:

…we were better than most students in the area of economics, we competed against high school students in the stock market games and we always came in the top 10%, and we were really good with computers and USB microscopes and all that technical stuff. (ST, THMS, TI)

Another middle school teacher noted the rigorous academics involved in engaging students to study deeply the plants and the health of the plants:

So we would use refractometers to study the plant’s sweetness levels in our greens and we have been able to adjust things in our greenhouse with topdressing with worm castings or you see students dashing about with microscopes that you plug into the USB port and they take photos with these microscopes and they enjoy studying insects like the parasitic wasp and managing aphids, and they think it is very cool. And when the kids get good at it they could smell stuff in the soil. And they learn how to companion plant and they learn about soil management and to plant Nicotina to attract the aphids. (JT, THMS, TI)

Another outcome or advantage that students develop in gardening programs is a strong sense of responsibility, accountability
and interdependence; some teachers referred to these as implicit learning outcomes. Sabo described the greenhouse and garden project as the most long-term, consequential project that any of them have ever been involved with, adding that no other program or project at the school compares in scope and responsibility:

If they don’t show up and take responsibility the greens will die, the lettuce and spinach will die. Some of them have houseplants that you can neglect, some of them have pets but their parents end of taking care of them, but there is no safety net for salad greens in a green house. They will die in one day if the sun is shining and you don’t water them. It is a hostile environment when the sun is shining. So a lot of what comes out of this work, which isn’t intended, is the opportunity to be responsible or not be responsible and reap those consequences. (TS, MHS, TI)

Students learn to be responsible not only to the plants and their care but also to other humans who are depending on them like the cafeteria staff who count on having the fresh greens daily in the cafeteria and their fellow peers and teachers who look forward to eating the greens for lunch.

The middle school teachers felt the same:

What is great about the garden is that if they goof off for a day something could die, and they quickly figure that out (especially when there is a monetary value tied to what they grow). You know they can goof off on their homework and they might lose a grade, but they don’t like things to die. It is a motivator. (ST, THMS, TI)

When students actively contribute to the food that is served in the school cafeteria, their learning couldn’t be anymore relevant. And as I heard from several teachers, students quickly learn that the school food service is a complex hierarchy. I heard about challenges with the 190° rule; fresh food can’t be served in the cafeteria unless it is cooked 190 degrees! One school shared that they (students) were learning self-advocacy as they navigated the challenges of having
farm fresh eggs in the cafeteria over the perceived increase risk of salmonella. Another teacher described how integrating fresh school garden food into the school cafeteria took several years to work out.

We made it really simple for them with a salad bar and then we would go in each morning and ask, “What would you like?” So we started doing fresh cut greens every morning and then we started doing vegetables for soup…(ST, THMS, TI)

As the school’s Facebook page would suggest, a mutually beneficial relationship has been firmly rooted (no pun intended) between the students in the gardening program and the cafeteria staff.

Figure: 18 Cafeteria Partnerships, THMS

**Hands-on Real World Learning**

Nearly a century ago, Dewey (1938) called for a revised position in education, one that takes students from their desks and textbooks and employs them as active participants in the experiences of learning. He suggested that as teachers when we give our students authentic and
meaningful tasks where learning results from doing. More recently, progressive educational and child development researchers are directing us more and more to the benefits and importance of connecting and reconnecting with the natural world; as well as the need for more hands on, lived experiences (Louv 2008; Sobel 2012). Moore (1997) advocated that central to children’s overall health and well-being is “daily hands-on contact” with the natural world (p. 217). Children live through their senses. Moore (1997) believed that hands-on sensory rich experiences helped to bridge the student’s exterior world with their more veiled, interior or affective domain. Onore and Lubetsky (1996) alleged that, “to treat content, pedagogy, and environment as separate or separable, is to separate school from society” (p. 256). The participants in this study speak and model this language as well. What I observed in classrooms and heard from teachers and administrators was very much a deep and rich connection between school and society and an acceptance and willingness to foster messy, process driven learning. Messy learning in the physical sense where children get dirt under their fingernails and slivers in their fingers, and also in the pedagogical sense, where learning is not always set or predictable, but unfolds with each problem that one encounters. As the high school teacher described, teaching requires stepping out of one’s comfort zone and relinquishing control of having or knowing all of the answers for a content driven curriculum:

But when we get into this stuff so much of it is a process, it is not content driven and we don’t know the answers. We are problem solving and asking questions. It is something that we can research, experiment with and ask questions, and figure out why. So we have to be able to let go of this comfort level of asking the questions and having the answers. We have to be comfortable with saying “I don’t know, let’s figure this out.” TS, THMS, T1.
Figure 19 Facebook Post THMS Planting in the Greenhouse

Troy Howard Middle School Garden
January 9

Today was the last planting in the greenhouse raised beds. the greens had run their course and were getting too bitter and hot for student palates. We planted cutting lettuce, mispooana and red russian kale. The kale will be harvested like the chard beginning in April and sold to the Belfast Co-op. (5 photos)
Not surprisingly, hands-on learning is often enabled by a connection to place, and place-based learning or the hand-on learning enables a more profound connection to place. From the K to 5 school, I heard how the Kindergarten class ventures out to the outdoor classroom every Friday, rain or shine, with science tools and notebooks. They enjoy a number of activities including discovering bugs under logs and rocks, observing plants—from buds and blossoms to seed heads, nibbling from the garden weeding and watering the garden, and bird watching to name a few. Much counting occurs and they enjoy drawing and documenting their discoveries and observations in their notebooks. By stepping out of the classroom on these Friday mornings, the children discover their world and community (at this age, their schoolyard) and begin to develop a sense of place, and a reverence for the wonders of their place. I also heard how the Grade 4 and 5 class learns about Lake Champlain, not by reading about it in a book but by sailing...
on the lake and exploring the lake by boat, thanks to a partnership with a local sailing centre. This same class studies land and land formations by spending time on a local farm and visiting distinct land formations in the local region. When outside, in the garden, the schoolyard or the community, children get to work and learn in messier, nosier, bigger, rougher, and bolder ways; and living creatures (plants and critters) can be observed in their natural habitat. Through hands on learning, in the garden, the schoolyard and in the community, students investigate, explore, discover, find patterns, make marks, imagine, dream, invent, dig, grow, nurture, cultivate. Unfortunately, hands-on, experiential learning isn’t valued to the same extent as desk and seat learning. Sir Ken Robinson (2006, 2011) talked about education as “the process by which we engage people in their fullness to give them a sense of who they are and their capabilities” (TED, Dalai Lama Center). He shared how standardized education does a great job of measuring students ad nauseum and obsessing over conforming students to a standard and a prescribed norm. But that by remaining disembodied, standardized education fails to help students engage with what is in them—a diverse, dynamic, creative and distinct individual who desires to be socially responsible and connected to one another—to educate the whole being (Robinson, 2011). The Troy Howard middle school’s explicit objective, as noted on their website, is aligned with real-world learning opportunities,

…committed to a process of teaching and learning that focuses on relevant, real world experiences, that incite our natural curiosity for learning and that allow for learning opportunities that have real, concrete value to not only our students, but to our larger community as well. (http://thms.rsu20.org/home/academies-programs/ecology-academy)

One of the middle school teachers shared his observations regarding the more global perceived concerns with hands-on learning:
…from my perspective, when you work with your hands it is looked down upon. In our culture, for a long time now, those who work with their hands are not considered as smart as those who don’t. That plays out in school, so if you are working with your hands you are just out playing, but if you are doing work sheets or watching movies on your computer not so much, it is strange, huh. (ST, THMS, TI)

When participants were asked why they believed more schools and teachers were not teaching in a more hands-on manner responses varied from not knowing how, lack of training, not wanting to, having different values, feeling like they don’t have all the answers, to lack of control. One teacher in particular shared, “I think the main reason is we have to get out of our chairs and most teachers aren’t trained to manage behaviours outside. It takes a lot more energy and you have to stay calm and be really consistent.” (ST, THMS, TI). He further advised that, “you can’t teach working with your hands, you have to model it” (ST, THMS, TI). That is what I observed in my visits: teachers actively engaged alongside their students, walking the walk and talking the talk, right down to making their own tools to do the work they need to do in the garden.

![Figure 21 Garden tools made by students at MHS](image)
**Process vs. Content**

There appeared to be an implicit understanding and respect for valuing of the process of teaching and learning. Teachers in these programs and schools recognized and appreciated that teachers don’t have to have all of the answers. Instead, teachers valued the process of exploring issues and seeking answers together, and encouraged students to ask questions and conduct research on a topic or issue of interest. Being able to stand in front or alongside one’s students and admit that you do not have the answer takes a certain amount of courage, personal insight, and willingness to be seen as a learner and not the teacher expert. One teacher identified it needing to have all of the answers as a control issue:

…it is also a control issue. A lot of teachers are really use to being or having a certain level of control and a lot of that control is knowing the answers and for a content driven curriculum… But when we get into this stuff so much of it is a process, it is not content driven and we don’t know the answers. We are problem solving and asking questions, it is something that we can research, experiment with and ask questions and figure out why. So we have to be able to let go of this comfort level of asking the questions and having the answers. And we have to be comfortable with saying “I don’t know, let’s figure this out.”(TS, MHS, TI)

The process of being able to immerse oneself as part of the learning instead of being directly responsible for directing the learning was seen as a risk for some. However, one teacher shared that he felt that there was less risk involved when teachers focused on learning as opposed to covering all of the content:

…I learning is bound to happen, even if one of these projects fail, if you can get the level of engagement that is necessary for these projects, they are going to learn something. I mean failure is a great way of learning. And this type of teaching presents so many opportunities to go in so many different directions…”(TS, MHS, TI)
All of the teachers I interviewed or observed valued and honoured the process of learning as evidenced by their willingness to engage in the learning process with their students, by promoting and seeking student participation, and by guiding inquiry and modelling intentional thinking and collaborative dialogue.

**Integrated and Cross-curricular**

As much as possible, the garden, the schoolyard, the community was at the heart of the curriculum in all three programs and schools. As a result, much of the teaching was integrated and cross-curricular in nature; knitting together mathematics, language arts, science and social studies.

At the elementary level, the *Community Handbook* explicitly stated that the school uses an “integrated approach to teaching and learning that connects social justice, economics, and environmental literacy” within the curriculum (Community Handbook, p. 4). During my visit to the K to 5 school, I happened upon the Grade 4 and 5 class in the middle of a science lesson. The
class was studying land and land formations, and how land affects water, in particular the flow of a stream. Earlier in the week the class had ventured out into the community to visit and observe various local land and land formations and to begin to formulate hypotheses and make predictions as to how the land affects the flow of water. Back in the classroom, students employed their observations and recent hands-on experiences to create models of land formations, using soil, rocks, plants and twigs to test their hypotheses. Students worked in groups of four. The class was calm and engaged, and students were actively involved in communicating and discussing their predictions with peers; drawing, writing, measuring, discussing their models and their predictions as the teacher calmly circulated around the classroom asking students, “Where do you think your stream will go? Why? What kind of a stream will this be? Where will it start?” With time, they added water to their models and the reactions in the class went from, “Yes, that’s awesome” to, “Oh no, we didn’t think about that.” Students then drew new pictures in the science journals and under their predictions, wrote descriptions of what actually happened.

The classroom conversation was then brought back to the natural world.

In the middle school, I was informed that lessons from the garden account for nearly 90% of the social studies curriculum, 30% of the art curriculum, 20% of the science, math and language arts instruction. The

Figure 23 Facebook Post THMS Math Garden Design Challenge
garden and the greenhouse are laboratories, and teachers in the program are typically ready to prepare a lesson out of whatever arises in the garden, the greenhouse, or environs. Spring is a busy time in the garden, and math teachers design lessons around planning and laying out the garden beds, using coordinates and consulting tables, and performing measurements and formulas for soil amendments. English teachers (I was told, when not engaged in testing and preparing for testing) draw inspiration for writing assignments from the garden, the greenhouse and the school’s naturalized environment.

![Troy Howard Middle School Garden](image)

The land is barren
Wintertime is soon to pass
For now, we must wait.

–Olivia Lovejoy

**Figure 24 Facebook Post THMS Student Haiku**

At the high school level, I observed students engaged in their service-learning groups integrating science, math, and language learning. The herb garden group was busy calculating the amount of garlic required taking into consideration the size of the plot, the size of the clove and the planting distance between the garlic cloves. The paper audit group met with a waste management specialist to begin the process of examining paper use and waste; taking a count of copiers and printers in the school, establishing collection boxes for unclaimed or erroneous print jobs; as well as examining various paper company’s paper content, cost, ink and recyclable content in relation to the copier and printer requirements at the school. The chicken coop group had written a letter, based on their research, seeking support for a chicken coup on the school
grounds, and were analyzing the results of their survey. The seed saving group was sorting seeds, determining which seeds to keep, and planning for work that needed attending to at the community seed library. The aquaponics group was determining how to create the most optimal conditions in their worm bin, to feed the fish. Other students were on the phone making contacts with community connections, discussing with one another how to go about creating a public service announcement for their project. The class was a-buzz with activity. Students were engaged, and for the most part, settled in their work. Questions were bouncing around the room between student and teacher, student and student, and teacher and student; and a variety of teaching and learning exchanges integrating communications and language, math and science filled the room. I left feeling fortunate to have observed such an authentic and inspiring learning environment.

Engagement and Enjoyment

The sentiment of John Burroughs (1919), “Knowledge without love will not stick. But if love comes first, knowledge is sure to follow” was most evident in all of the schools, represented by fewer behavioural issues, students’ level of interest and active participation in their work, student pride, student voice and student initiated projects, furthermore, the students whom I observed were smiling and by all appearances seemed genuinely pleased to be in class. One teacher attempted to breakdown the level of engagement in his school:

There are several aspects. For one thing they want, to be engaged, because they don’t want to do their computer math stuff. But there is always a group of kids, like 30% that is so into what is going on and they are always willing to come to the garden anytime and even after they leave middle school they come back to visit and some of them want to come back to work in the garden. The participation and engagement is really strong in the sixth grade and even the seventh grade. When they hit eighth grade there is a shift, there is a change in the kids and I
start to lose them a little bit. Except for the ones that are really into it, and they gain a little extra from this work at that age, but there is that other group that was doing well and then they get into the social stuff and they are ready to go to high school. They will do the work but they are no longer as engaged. (JT, THMS, TI)

Behaviourally, I was most intrigued by the calm atmosphere represented in all of the classrooms that I visited. Not calm as a result of children being repressed and squeezed of all life, but calm because kids were settled and engaged in their work, free to inquire, and confident in their capacity to problem solve. When asked to take three photographs of items, resources or places that reflected her teaching, one teacher took a photo of a sign that hung at the back of her classroom.

![Figure 25 SA Sign posted in the Grade 2/3 class](image)

That is exactly what I observed; students and teachers engaged in the process of learning, students and teachers making mistakes and learning together. Another teacher, from the middle school, noted that as a result of student engagement and enjoyment in the program, his kids never skipped school and he never had to send his students to the principal. With respect to students with special needs or behavioural challenges he shared:

> When I had a group of kids in the garden and a teacher would come by for a visit, I would say I have three kids here with
special needs and one is in a discipline program, can you pick him out? And they could never pick him out. So that’s because this is a great teaching environment. (ST, THMS, TI)

Earlier I described the level of engagement at the high school level. In conversation with Sabo following the class, he suggested that my observations of his students were accurate, sharing “largely, that is how they are with me.” He went on to talk about how student engagement and interest “drives a lot of the show” taking the learning (and teaching) in all kinds of directions. This level of student engagement and student direction ties into the notion of student voice, which is discussed in the next chapter.

**Explicit Curriculum Design: Necessary or Restricting**

Explicit curriculum frameworks can be viewed as either necessary or restricting. Some teachers prefer a clearly defined curriculum while others find a defined curriculum to be too restrictive. When I was in the early stages of my study, attempting to locate participants, one non-profit funding agency in particular cautioned me against studying schools where a defined curriculum is used, for fear of this being too restricting for teachers. Much to my surprise, a defined and explicit curriculum was not perceived as a negative or restricting force in the elementary and middle school programs. Perhaps this had to do with the collaborative nature in how these programs and curriculum came to be and likewise, the buy-in to the approach, and access to professional development. Notwithstanding, an important factor is that the “alternative” place-based and sustainability focused curricula had been thoroughly mapped with the district and state standards. A great deal of time and collaborative energy was, and continues to be, invested into developing these public school alternative curriculum frameworks that address the global standards while synchronizing learning experiences with what is in the local community.
Collaboration and Curriculum Planning

There was no concrete evidence in the data of one right way to design and plan a curriculum that integrates the big ideas of sustainability and the existing standards. That said, teachers and administrators affirmed that alternative curricula are more successful when developed collaboratively. While the impetus for the middle school and the high school programs came from one key figure, the programs themselves—from designing, planning, delivery and assessment—realize their potential and success in the collaborative efforts of many. Collaborative curriculum planning occurred within schools, amongst teachers, administrators, and community stakeholders, as well as between schools and partnering agencies.

At the elementary level an administrator explained, “in a magnet school you still follow all of the district and state curriculum but you have a curriculum focus the way you approach teaching and learning and that is the magnet piece, what draws people to your school” (VP, SA, Adm). The public school had a longstanding public-private partnership with Shelburne Farms, a non-profit education organization whose vision is to “cultivate a conservation ethic for a sustainable future.” Vermont is a unique state with an enduring tradition of practicing land stewardship and community sustainability. While attending an education for sustainability conference at Shelburne Farms in 2013, I learned that the State of Vermont’s Department of Education formally recognized this longstanding value by introducing two new academic standards into its Framework of Standards and Learning Opportunities: Sustainability (3.9) and Understanding Place (4.6). These standards apply to every student, in every subject, from Kindergarten through 12th grade. In 2001, Shelburne Farms started the Sustainable Schools Project (SSP) offering professional development in pedagogy and practice, as well as a framework (presented earlier in this chapter) for integrating Education for Sustainability (EfS).
into the curriculum. It is this framework and partnership that has supported curriculum and professional development at the Sustainability Academy. As I heard from administrators and teachers, it takes a considerable amount of time, commitment, and deep professional reflection and development to examine the state education standards with a lens of sustainability. One teacher explained that with the different layers—district, state, and common core curriculum, and the school’s own sustainability curriculum—the school’s effective and collaborative leadership leads the charge of self advocating, and identifying how the “standards” are being met within the sustainability curriculum:

Common Core came after we developed our curriculum. So we have our curriculum and we are going through the Common Core and identifying what we already do that may be called something else and highlighting how what we do meets Common Core. There are a few places where we had to realign in math and writing because we either weren’t meeting it or we were meeting it at a different grade... But I think that a school that was starting today would be so smart to take Common Core and decide where and what and how they could integrate it. (AL, SA, TI)

She went on to say:

It is challenging because they [district and state] tend to be more top down, and we are a school that is evolving a little more organically. It is complicated and you feel really pressured as a teacher, because you feel all of those things [expectations and standards] and you are not sure which one, beyond my student’s needs, that is a priority. How do I make sure that I am hitting the Common Core? How do I make sure that I am hitting the district and the sustainability curriculum? (AL, SA, TI)

Apart from the partnership and support that the school received from Shelburne Farms, a partnership that had existed for over a decade, the school was structured in such a way so that teachers did not carry the sole responsibility for the curriculum. A leadership team and a
stewardship committee contributed vastly to the school’s governing structure. Furthermore, teachers benefitted from the support of two part-time Sustainability Coaches who works with individual teachers to support them through the above noted challenges. The various leadership and committee roles will be discussed in greater detail in the following chapter, but for the purpose of this discussion I will use the following description shared by one of the teachers.

We have a leadership committee and they look at some of the more explicit curriculum pieces, whereas the stewardship committee that is more in charge of keeping the mission of sustainability in focus is more the implicit curriculum. (AL, SA, TI)

Shelburne Farms’ *The Big Ideas* of Sustainability are positioned at the heart of the curriculum. Teachers orient their units and projects around the Big Ideas and the guiding questions noted earlier in this chapter. I was told that the more finite process of curriculum and unit design were based on the Understanding by Design (UbD) framework, that identifies desired outcomes, knowledge or skills, and designs lessons and activities to foster the development of the desired outcomes. Teachers work in collaborative grade school teams; the Grade 1 team, 2/3 team and the 4/5 team to identify desired outcomes and design appropriate units and lessons.

In contrast to the elementary example, the middle school and high school programs evolved from the vision of one key individual, and identifying key colleagues to continue to develop and grow the program alongside. A solid foundation in curriculum development and some innovative ideas grounded in place-based and sustainability education inspired a middle school teacher to design the garden project curriculum bridging state expectations and hands-on, community oriented learning.
I built the garden around a comprehensive social studies curriculum and program with a focus on history, economics and agriculture. I chose those topics because those were topics that came up all across the country about where we are really weak, besides language and math. So I started the program with a gentleman who was a professional farmer and who worked with kids with special needs. So what I had to do to get the program off the ground was to have my curriculum and assessment piece completely developed and in line [with the standards]… then we integrated all of the disciplines. (ST, THMS, TI)
This program was the first of its kind in the state of Maine. With the curriculum thoroughly formed, they rendered the curriculum high profile to garner widespread recognition. The program received big state awards for best curriculum design. To which the founding teacher commented, “and it is a public school... a lot of people thought this could only be done in a private school!” (ST, THMS, TI) The widespread state attention for the program and curriculum design allowed a couple of years to grow the program and train other schools. Similar to the elementary school, the middle school curriculum is built around the big ideas of sustainability and interconnectedness.

The school’s website states:

Teachers and students at THMS are working together to develop a school-wide program which integrates all subject areas through practical projects in gardening, ecology and partnerships in our local businesses, farmers and local community members. Young people produce compost, organic food, seeds and skills to share and sell. Our garden and greenhouse not only produces food that supplies our school cafeteria, a student-run farmer's market and local soup kitchen, but grows empowered, academically successful young people who integrate sustainability into their lives (http://www.schoolgardenproject.com/7northcurr.htm)

At the high school level, I heard how the small cohort of science teachers reflected on their course planning with a lens of sustainability. Independently for their specific courses, and collectively as a department, they have been developing KUDs,

We have been developing these KUDs [Know, Understand, Do], some core specifics and course specifics standards for learning on our own for our own course. Now we are also doing school wide LEs [Learning Expectations], communication, problem solving etc. and we are finding ways to overlap them and map them to our courses. I wrote my entire course to these KUDs most [four of five] science teachers have done that these last few years. (TS, MHS, TI)
An alternative curriculum requires a certain level of teacher buy-in and commitment, nurtured through a tailored professional development program for teachers. Professional development occurs in a variety of ways for the participating teachers, but consistently it is seen as development that is deep and continuous.

**Reflecting on Pedagogy and Professional Development**

The teachers I interviewed all, at one point or another in their careers, made a conscientious decision and commitment to transform not only how they taught and interacted with their students, but also the ways in which they reflected about how they taught, and why they interacted with their students and their communities and teaching and learning spaces in the way that they did. I heard time and again how this conversation and transformation begins with the self, “First as a staff person, looking at our own beliefs and prejudices and bias before we take it to the curriculum with real deliberation” (AL, SA, TI). Furthermore, all of the teachers acknowledged that now that they have come to teach in this manner, in this depth, that there is no way that they could go back to teaching the way they were previously. The sense of personal growth is a stimulating and powerful motivator for the teachers lucky enough to be a part of these unique teaching and learning environments; uniting these teachers in their commitment and desire to create the change that they want to see in education and in their communities and to do more than just the “job side” of teaching:

I get a lot out of it, just the sense of personal growth and learning, and then the sense of doing what I am trying to do as good as I can, I have made mistakes but at least I know I am trying. If I kept doing what I was doing with the reservations I had about the effectiveness of that I would just being doing the job side of it. I just can’t operate like that. I have made some vast changes to my teaching and it is very stimulating. (TS, MHS, TI)
Apart from the personal and professional stimulation that teachers identified with, the notion of continually striving and continually examining one’s practice didn’t go unnoticed in our discussion of practice, values, and professional development. Note this insightful reflection from one of the elementary teachers:

I think what I take away professionally is the constant examination of my practice. That there is no time that I just go, I am just going to do this because it is easy, or there are times but I know why I am doing it and it is just fine. But I realize constantly when I am at PD days, that I ask really big questions. Really any member of this staff, we ask really big questions while other people at district PD days may be asking, “what colour of paper should we use?” I don’t care [about paper colour]. I can figure that out. So it is really interesting to be a part of a staff that constantly thinks that way and is constantly challenging and seeking to understand what we do. And sometime I just think, “will you leave me alone, I did it because it was fun.” But they are right we do need to be constantly examining what we do. I look at the world differently now since I have been teaching here and like I said once you start asking questions you can’t go back. I am always asking questions and I think we try and nurture that in our children, to recognize who is not at the table, whose voice is not being heard notice who has been disenfranchised for whatever reason. (AL, SA, TI)

At the Shelburne Farms Education for Sustainability summit, 2013, we heard that successful transformative learning and development requires engaging teachers as researchers and practitioners and offering on-site coaching and sustained professional development, as opposed to one-off workshops. One teacher cautioned that there is a difference between having an actual coach on-site and offering internal professional development, suggesting that internal professional development with one’s peers often backfired:

It was a turnoff because I was seen as the expert…so I had to offer one on one conversations or if we were cooking something in the outdoor kitchen we would invite everyone out to the garden to share with us. With other schools it was great, people
who came were invested and wanted to be here. With one’s peers it is perceived that I was giving them a lot more work to do. (ST, THMS, TI)

**Beyond “Best Practice”**

In the early nineties, Zemelman, Daniels, and Hyde identified thirteen key principles and theories of “best practice” (1998). These practices were deeply integrated with the curriculum and the mission of the school or program, but also reflected on by teachers in planning the course or curriculum. Unfortunately, as I learned from my conversations with teachers, the term “best practice” has been largely co-opted into “educational jargon” that “lacks depth, authenticity and meaning.” One teacher shunned the term, relating how it is bantered about haphazardly among administrators, teachers, and policy developers and its definition has come to mean many things to many people:

> I get really frustrated when people say the words ‘best practice.’ I don’t believe best practice is written in stone and that it is something that we aspire to. I think it depends on the kids you are working with what best practice is at that moment. That can change from day to day and from year to year and from culture to culture…Best practice is adapting to what your students and families need at that moment without sacrificing what you think is academically or socially acceptable. (AL, SA, TI)

It was a stimulating conversation that brought us back to children, the real consumers of this education, and to question the academic tendency to reduce learning to specified objectives, to dumb-down and sanitize the curriculum. Students in these programs are challenged to inquire and create in real world opportunities beyond the classroom. It is hard to sanitize what exists in the moment in one’s schoolyard or community. In this manner students are afforded authentic opportunities to exercise their voice, problem solve, and create meaningful and beneficial way. It is recognizing the community and the students’ needs in that moment.
Teacher Values

No one wants to overtly admit to teaching values. Or do they? There is a longstanding educational and philosophical debate around whether or not values can be taught. Nel Noddings (2002) contributed, as did her predecessors, to the “pedagogy of values” in her work *Educating morale people*, suggesting that values are not taught directly but are “defined situationally and relationally” (p. 2) adding “values are not simply handed down; they are cooperatively constructed in dialogue and working together on common projects.” (p. 14). Over the course of my seven interviews with teachers, I heard musings and references to “values driven curriculum”, “my values affect my practice” and “values that we want our students to take with them into adulthood” and “the values that are necessary in the 21st century curriculum.” In a discussion with MHS biology teacher concerning implicit curriculum, this notion of values education became a prominent theme.

OK we are coming around to this…do we teach values? I think is a great question [implicit curriculum], people argue strongly that we are not supposed to teach values and I could be one of those people…I don’t intentionally set out to teach values, well I do teach some values…but their values are going to be shaped by the experiences we engage in and what they learn in those experiences. So I truly believe we are shaping their values to some extent. It may be the opposite of what our values are, because of our relationship with them, and it may conflict with what they are learning at home. We are impacting their values in some way and that is going to impact how they are interfacing with society and using what they have learned. My hope is that we can teach this process, and certainly through systems thinking, in an objective fashion that it will enable them to not let values from others fears of their life influence decision making in a way that shouldn’t. (TS, MHS, TI)

He went on to talk about the belief that values are most often communicated by showing, modeling, and doing than through explicitly verbalizing one’s values:
I think values are a hidden curriculum in a way. With the composting and recycling, how many years have we been doing this? I tell students when they are in my class that they must commit to composting and recycling, whether here in the class or in the cafeteria, it is after all Environmental Applications. And I will go on rant sometimes when a kid throws a Dasani water bottle, which you don’t want him to have in the first place, into the garbage can. That value of respect for each other and respect for resources and how it relates back to society is something that I model that comes out no matter what I say otherwise, they know I care, that is my hidden curriculum. (TS, MHS, TI)

There exists a fine line between teaching values and teaching from one’s values. The teachers in this study were all cognizant and cautious of walking this line. One teacher in particular openly articulated this balance:

I use the sustainability curriculum [social, economical, environmental, political] as a lens to assess, without applying judgment, as objectively as I can, removing left and right, wrong and right…but people of this community know where I fall on these issues and the truth is I am not interested in having my students or colleague think and feel the same way as I do about these issues. I am interested in having them understand the issues and the implications of this situation from these different angles. Ultimately what you/they decide is going to be value based. (TS, MHS, TI)

A profound veneration settled in me for the teachers in this study, whose genuine (and conscious) belief in and determination to live and model the values and principles fostered in their schools, programs and classrooms. Through our conversation and reflection, most teachers didn’t even realize they were engaged in these behaviours and actions, or interacting with students and fellow colleagues in the manner that they were because what they believe as conscientious human beings and desire to impart to their students is truly inherent in their attitudes and actions.
**Teacher Modeling**

Modeling was a practice that all teachers identified with at some point in conversation around their practice. This concept was familiar to me as a Waldorf educator, as the notion of “being worthy of imitation.” For the teachers I interviewed, modeling embodied many profiles, from modeling environmental and social cultural expectations to academic processes. In discussing some of my observations with one of the elementary teachers, she shared the following insights, beginning with self-reflection and thinking out loud,

A lot of it is modeling for them and I am becoming more conscientious of it too. It is opening up my head and sharing with them my thought process before they see the action, and sometimes it is very simple. The other day I was walking into school and I had two kids hanging out with me and there was all of this trash on the ground. Now a year ago I would have just picked this up and thought, I am modeling for them and they will follow in my steps and figure this out that this is what they need to do. But I don’t believe this now. They think Mrs. L is being a nice person and she is picking up trash and putting it in the garbage, so when I want to be a nice person I can pick up trash and put it in the garbage. So this time I stopped and I said, “This is awful, there is a ton of trash all over the place.” And they replied, “Yeah, it looks gross”. So I said, “Well I have to be some place [modeling my internal dialogue] I have five minutes but this looks important enough for me to do something about it, would you guys help me?” and they said, “Yeah, sure”.

To turning the action into a teaching and learning opportunity,

So we did it together. So then I taught into it, instead of just doing it. I see that I need to teach into it all the time, it is no longer just about doing it. I need to articulate for my students why I did this and why it was important and what the challenges were. That is the process for me. (AL, SA, TI)

It was plainly evident through conversation and classroom observations that acknowledging positive student contributions and adhering to one’s values and expectations for students matters and it was something that all of the participant teachers were deeply cognizant of.
and recognized as a deep responsibility to their students and their practice. Furthermore, strong school and faculty collaboration contributed to a whole school appreciation for being accountable to the self and to one another in the process of collectively working towards a common goal and vision:

I think we as a staff are looking really carefully at how we are modeling sustainability, not just in what we are teaching but how we are teaching it and how it reflects the culture of this school. And that starts with how we treat each other and how we treat the children and interact with the children and interact with each other and how we treat the facility. (AL, SA, TI)

**Teaching Caring, Commitment and Conviction**

I was struck by the deep sense of duty among the participating teachers. Not duty in the sense of being onerous but more as a passion, an unwavering conviction generated from reflection and insight into one’s experience and practice. It became quickly evident that this caring and commitment, that I observed playing out in the classroom and which was shared through our conversations, helped to launch a departure from the prescribed standards-based pedagogy curriculum. These are teachers and leaders who want to develop meaningful relationships, who want to care, and who want to teach in this manner and are stepping up to what, they believe, truly matters in education and schooling. Noddings (1984) described this exchange/encounter as one of “natural caring”; it is about desire to want to do something, not the obligatory feeling of duty. That desire for this group of teachers is easily distinguished as the unflinching belief that their role, as teacher and educator, is to teach the student not to the content and an appreciation that the student is more important than the content, or as Noddings (1984) wrote, “The student is infinitely more important than the subject” (p. 20).
The instructional methods and pedagogy that teachers value can be as diverse as the teachers themselves. No one approach is better than the other, but be that as it may, we as teachers hold near and dear to us certain values that we can’t help but let impact our teaching and filter into our classroom practice in one way or another. Noddings’s components of values education include modeling, dialogue, practice, and confirmation. Among the teachers whom I interviewed for this study, for all the similarities that were quickly evident in what they were doing and how they were doing it, there were an equal number of dissimilarities, highlighting the place specific nature of this work in relation to our learning communities. However, time and time again I was drawn back to the various conversations around the implicit curriculum and the notions of teacher values and teacher practice. Values teaching and instruction are commonly considered a taboo subject in teaching and education, yet, the preceding pages shed insight into the role that teacher values and teacher modeling play in the realization of these sustainable, place-based and community oriented models of education.
Chapter 5

The Enduring Commitments: In pursuit of the type of curriculum and pedagogy described in Chapter 4

When educating the minds of our youth, we must not forget to educate their hearts.

Dalai Lama
Unlike the narrative flow of Chapter 4, describing the results related to pedagogy and curriculum, Chapter 5 will present the results of the second cycle of analysis integrated with additional theory to address the second research question: *What enduring and systemic structures enable publicly funded schools to participate in a curricular process that engages students and the community?* I draw on both participant data and on theory to examine the enduring commitments of the three schools as these commitment are broader educational constructs. The integration of theory allowed me to extend their meanings and connect participant articulations to broader tenets of sustainability education. Specifically, three enduring commitments were expressed: (a) supporting student voice through agency, belonging and active citizenship, (b) collaborative leadership, and (c) stepping out of the norm.

**Agency, Belonging and Citizenship**

> Only through direct participation can children develop a genuine appreciation of democracy and a sense of their own competence and responsibility to participate.

> Roger Hart

Children’s active and direct participation with the natural and built environments of the school and local community were recognized and honoured as valuable components in the philosophies and supporting curricula in all three schools. What’s more, student input and discourse was desired and taken seriously. Conversations with teachers revealed that collaboration among school and community partners, as well as deliberate and collaborative curriculum planning, enabled meaningful choice to unfold and successful student participation to flourish in embodied ways. This chapter explores how the participating teachers and schools honoured student voice—fostering agency, belonging and active citizenship in their students.
Recognizing and Honouring Student Voice

While concerns abound, both empirically and anecdotally, that youth in our society are more apathetic and disengaged than in previous decades (Putnam, 2000), findings from the Digital Youth Project suggest that youth are engaging in civic causes, but in new ways with “new worlds for communication” (Ito et al., 2008). Service-learning and community service activities have come to be recognized common practices in schools. However, these practices don’t often involve students having a voice in decision-making or school-wide and community based policy reform (Mitra & Serriere, 2012).

The simplest expression of student voice involves students sharing their opinions on classroom or school problems at the classroom level. I heard from teachers in this study that when students have the opportunity to collaborate on identified problems with adults in the school and community, they experience greater ownership and opportunities to become leaders in agency and change. Examples abound in the literature for these more extensive opportunities for student voice at the high school level (Mitra, 2008) but the literature suggested that extensive student voice opportunities remain a fairly novel practice at the elementary level. Mitra and Serriere (2012) identified a notable lack of opportunities for student voice at the elementary level. They cited Hahn (1998) who wrote that critical civic habits are formed during the elementary years, igniting a lifetime of civic engagement. Moreover, Mitra and Serriere (2012) drew on research from the field of youth development. Youth development is concerned with understanding the developmental needs of youth and youth preparation for life. Findings from the field suggested that youth need opportunities to impact matters of importance to their well-being (Pittman, Irby, & Ferber, 2000), engage in active problem solving (Fielding, 2001; Goodwillie, 1993), develop collaborative relationships with adults and with peers (McLaughlin, 1999; Pittman & Wright,
1991), and take a more active presence in classroom roles (Costello, Toles, Spielberger, & Wynn, 2000). Mitra and Serriere (2012) found that the majority of the research focused on youth in middle school and high school; noting a need to more closely examine student voice at the elementary level.

Student voice was a unifying theme for all three schools. In some cases, student voice entailed the simple act of making the space and the time to listen to and be present with students. In other instances, students were empowered to recognize, speak up for, and act on the injustices they observed, or served as leaders with the space to form opinions in their learning and in the policies that impacted their schools and communities.

The Sustainability Academy defined “Student Voice” in their Community Handbook:

The Sustainability Academy is dedicated to making sure that our students have a voice. The term “Student Voice” describes how students give their input to what happens within the school and classroom. Our desire is for students to know that their expertise, opinions and ideas are valued in all aspects of school life. Student Voice permeates all levels of our work together, from students participating in small group classroom conversations to students partnering in curriculum design or establishing school norms and policy. (SA 2013–2014 Community Handbook, p. 27)

Student voice will be further examined through the themes of agency, belonging, and active citizenship as they emerged from the data.

Agency

Each teacher had their own reasons for why it is so imperative that we listen to students as well as teach students the strategies for identifying and using their voices. A common thread that unified the individual conversations with teachers was the pressing need to prepare students and teach them the skills that are necessary for the rapidly changing cultural period, or as some referred to it, “education for the 21st century.” As one elementary teacher noted:
The society that I grew up in was not a just society, there were thousands of voices that went unheard and it was to the detriment of our society. It is important that I teach kids to have a voice because their voice deserves to be heard, no matter who they are or where they come from. That is the kind of society that is sustainable. The kind of society that is not sustainable is one where only a few people have a voice and the power, and make the decisions and chose the voices that they want to hear. For me, a little Napale girl who came here six months ago and is just learning English, her voice is as important as a white middleclass sixth generation person. But globally that has not been the case, and we have made bad choices and we have paid the price for it [globally]. It is about helping children to speak their truth and to not back down. (AL, SA, TI)

Mitra (2004) affirmed that honouring student voice created opportunities for students to assume a variety of roles and responsibilities as “change-makers,” facilitating the experience to make a difference by helping others in their school and community. One of the elementary teachers mused that:

Even Kindergarteners have a voice and valuable views that need to be attended to. For our annual day of service, which happens twice a year with Seventh Generation, when they bring 75 of their employees to our school. The Kindergarteners identify which streets they need to pick up trash from, and their voice is heard and that does a lot for their self-esteem—even in Kindergarten. Kids know and feel that they matter. This hands-on, community integrated work does wonders for their oral and written communication skills. They come back and organize it and write about the work. Kids have to have a presence, their passion and voice, in our schools and communities. (ATF, SA, TI)

In all three participating schools there was a strong appreciation for the importance of thinking and acting locally as a pathway to understanding and acting on global issues. Furthermore, teachers also acknowledged the importance of exposing children to various community members and leaders who may share their differing perspectives and values of their
community. Hart (2008) suggested that at the very core of democracy, “civic education must involve exposing children to different perspectives and values in their own communities” (p. 26). He stressed a critical need for students to be genuinely involved in the environmental and social issues of their own communities and to initiate and participate in collaborative decision-making. It is not enough for citizenship and democratic participation to be taught as an isolated classroom subject. As one teacher shared, even when discourse and interactions with community members and civic role models goes awry, there is a lesson to be learned:

The other day we had a city council member come and talk to the 4/5 class about her role and what she does. One of the students asked her, why are there no students on the city council? And she sort of blew off that question by saying, “Well, kids are in school.” When I spoke to the student after I asked, “Did she answer your question”? And the student thought about it and said, “No. She gave some reasons or obstacles but she didn’t answer the question.” Those are the kinds of questions that our kids, kids who are not inhibited, ask all of the time. (AL, SA, TI)

Communities that recognize students and youth as vital members who will contribute to their community will do well to collaborate with schools to better prepare students and youth for their adulthood, and likewise the communities that, with time, will come to depend on them. Noddings (2013) urged, “in the complex 21st-century world, there should be a healthy recognition of interdependence at every level” (p. 10). All three schools in the present study do something that sets them apart from their counterparts. Their curriculum and pedagogical practices are rooted deeply in the places they inhabit, be it the campus, schoolyard or local community; and all three value the development and knowledge of this sense of place for the benefit of engagement and learning as well as for the community’s benefit and long-term gain. Another teacher noted the focusing on, what she termed, “real world things” helps students feel connected and heard, so that they can have a meaningful influence on important, local issues.
When [students] write about the traffic on a street out in front of the school, that has an impact on their safety. Or the Healthy Neighbourhoods Healthy kids project, where students see what their community needs and they problem solve and take the steps to take the necessary action; and they learn how to write and speak and advocate for the issues they identify. That is the heart in the school. (ATF, SA, TI)

Though Mitra and Serriere (2012) may have found a notable lack of opportunities for student voice at the elementary level, this study’s participating elementary school, the Sustainability Academy, stands out as the exception to their findings. I deeply admire the philosophy and vision of the school, as well as the resulting conscientious and collaborative effort among faculty, staff, and the community to bring the philosophy and vision to life. This level of student agency and student voice at the elementary level facilitates the skills and competencies of creative problem solving, communication, collaboration, and adaptability. These skills and competencies help to pave a pathway to effective belonging and active citizenship at the middle and high school.

**Belonging**

Education and take action projects based on students’ self-identification and definition of local problems can be made even more effective when linked with other students from different or neighbouring communities. This notion of children sharing and or conducting their neighbourhood research with students from another community has been coined “environmental exchange” or “linking” by Hart (2008) and is defined as a strategy for “fostering a perspective on the environment that is grounded in the local definition of environmental problems in a larger context” (p. 22) bridging local problems to global issues. A teacher at the Sustainability Academy explained how this approach worked in her school:
A few years ago, my 4/5 class and a class on the other side of town met every Friday. We had over 100 kids and we took fieldtrips together, and worked on projects together, and we mixed the kids up so that some came here and others went there. We compared and looked at similarities and differences in their neighbourhoods and took on issues that students identified were of importance to them. We explored the processes of who to meet, and how to write grants around green space and advocacy. And they walked away being able to say, “I am and know how to be a steward of the earth. (ATF, SA, TI)

Belonging, in the youth development frame, means that students develop positive and supportive relationships with community members and peers, with opportunities for exchange and learning from one another (Mitra, 2003). Students at the middle school are highly respected for the vegetables they grow and the seeds they produce. As a result, the students have established a positive relationship with the larger community, and they are seen as valuable and contributing members who fill an important need in the community. I heard how the middle school harvests Swiss chard and greens from the greenhouse and sells it to the local co-op:

We harvest Swiss chard in the greenhouse and then we take it down to the co-op and then they do the paperwork stuff with the students and discuss how they are going to get paid and how this works and why there is a 40% mark. (JT, THMS, TI)

Earlier, in Chapter 4 we learned about the positive boost that the middle school students get when they deliver their Swiss chard to the local food co-op on Tuesday, Seniors’ day; reinforcing, students’ sense of belonging and attachment to their school and the broader community.

Exposing students to people and community resources they may not typically get to interact with also contributes a greater appreciation for their community and cultivates social responsibility, resulting in a stronger sense of belonging and agency. Once more, the middle school teachers have recognized the importance of direct experience and community integration, and seeing firsthand the impact of one’s actions as was described in Chapter 4, with the middle
school’s active and direct involvement, and weekly contribution to the local soup kitchen.

Belonging. It is a simple concept and a reciprocal action, achieved by reaching out and reaching in. It gives us purpose and direction and value to our actions. It connects us with others and through these connections we establish important habits of spirit and mind, strengthening personal and communal well-being. Sustainable communities need students who feel a sense of belonging to one’s community and who contribute to a sense of belonging, shared community responsibility, and enduring active citizenship.

**Active Citizenship**

A third and essential element to foster student voice is opportunities for students to participate as active citizens in their communities. Several skills and competencies are developed and practiced when students are practically engaged with the world around them. Active citizenship gives students an authentic and meaningful context to develop and practice creative and reflective problem solving, collaboration with peers and community members, and communication and adaptability. Students mature as constructive and critical participants for social justice, economic justice, and environmental issues through a deep and lasting appreciation, understanding, and awareness for the place where they live. A well-conceived curriculum that evolves with students’ social consciousness; as well as, a curriculum that is strongly integrated with the local environment, and local community, and community stakeholders helps to convey the value of this approach as something that is recognizable and worthwhile doing in school time. Kahne and Sporte (2008) examined how students enduring commitment to civic participation is shaped by classroom based experiences designed around explicit civic goals. They found that classroom civics learning has a “significant impact on
students’ commitments to civic participation” (p. 754). But what’s more, their findings suggest that:

Experiences that focus directly on civic and political issues and ways to act (e.g., undertaking service-learning projects, following current events, discussing problems in the community as ways to respond, providing students with a classroom in which open dialog about controversial issues is common and where students study topics that matter to them, and exposure to civic role models) are highly efficacious means of fostering commitments to civic participation. (p. 754)

One teacher described how the Sustainability Academy has evolved over time and with particular energy and attention allotted to developing a curriculum that recognizes and appreciates the competencies that engage students to be environmentally and civic minded, steering them down the path of developing awareness for the other. Specifically, students acquire the strategies for advocacy and self-advocacy to successfully confront injustices with confidence, and create the change they desire. She spoke of the necessity to teach children to be comfortable with feeling uncomfortable, “It is about teaching children to find their voice and use it when they need it the most [when we are uncomfortable].” (AL, SA, TI) She went on to describe how her students are learning how to speak up for themselves, learning how to organize and start a movement to speak up for what they believe in. She shared how she wants her students to know that they have the power to create change, that when they see something [socially, economically, environmentally] that isn’t fair, that they can do more than just sit there and say, “oh boy, that is bad.” She is modeling and teaching them to use strategies to created change and identify resources in the community to help make change happen. “Students begin to understand what they need to do to create the change that they seek” (AL, SA, TI). She elaborated how it is great for students to know that world hunger is an issue, but students need to learn how to break that concern, that need down into something that they can actually do something about. She conveyed that her
students graduate with the key strategies for taking action and acting to create change in the face of inequities and injustices.

Echoing the sentiments of Hahn (1998) earlier in this chapter, these students are developing positive habits for civic engagement in their critical elementary years. And as this teacher noted, her students have merely set foot on the path of social change, but they are progressing in the right direction “because once you explore and ask those questions there is no way to unask them.” (AL, SA, TI)

Other participants spoke to the relationship between service-learning and student voice, specifically with respect to addressing issues of personal relevance to students and in helping students to understand their service-learning in context of the underlying societal issues that are being addressed:

The thing that is my favourite, though, in the building is when student voice comes into the picture. That student voice piece is what I think is so exciting about service-learning because it comes from them and they want to execute it and they want to do it. I really like and appreciate that. (ATF, SA, TI)

I observed and heard how respectful and open dialogue around controversial issues encouraged students to remain attentive to, and to take notice of, injustices. Student voice and agency was appreciated and was strongly encouraged among the participating teachers and within the various schools. One teacher at the Sustainability Academy emphasized that, in her view, exercising student voice supports self-esteem. She claimed that it is central to the school’s philosophy to focus on real world things that count. She noted that when students write about the traffic on a street out in front of their school that has a direct and immediate impact on their safety. Students see what their community needs and they learn to problem solve and take the steps necessary to
take action. She concluded by saying that students “learn how to write letters and speak publicly and advocate for the issues they identify with. And that is the heart in the school.” (ATF, SA, TI)

Time and time again, teachers and administrators noted that students were proud of their work, proud of their accomplishments, and proud to be engaging in positive change for their community. Furthermore, teachers and administrators reported that students learned and believed that they were capable of creating positive change. Research on youth development supports that when youth believe their actions make a difference, their sense of civic responsibility grows (Weber et al., 2007). This sentiment was shared by one of the teachers from the elementary panel. “In terms of kids self actualizing, our kids develop a sense of themselves as creators of change really young and then they carry that with them through the grades.” (AL, SA, TI) She described how their sense of civic responsibility matures throughout their grade school career. How in Kindergarten, students have the contact with the environment but not necessarily the awareness, to the grade school where they begin to see how their actions affect the environment and those around them and how they can affect real change in their community. She concluded that developing relationships with the local environment and establishing local partnerships, and the corporate partnerships, “deepens their awareness and understanding of what is going on.” (AL, SA, TI)

A Master Waldorf teacher once said to me, in discussing the vital outcome of student engagement with the world on the development of the self, “To know the world is to know the self, to know the self is to know the world.” I was drawn back to this statement when one of the elementary teachers shared what practical engagement with the local community meant for her students’ sense of self. She initially described how her students used to be ashamed of where they came from, “The old north end,” but after participating in place-based learning and service-
learning grounded in the community, students developed a sense of respect and pride for where they came from:

But now kids will say, “Oh I am from the one”, and they are very proud of that. They now understand the history of this place, their place, [their community], and they understand the richness, and the culture, and the ethnic diverse community, and they have an appreciation for it. They have written and illustrated their knowledge and understanding in, *A Walk Down North Street: Looking at North Street’s Past, Present and Future*, and they can recite the history of the neighbourhood with pride and tell the rich stories of their neighbourhood’s past. (Al, SA, TI)

This same teacher was clear that while students feel a deeper connection to their community and a growing sense of pride in where they come from, a historical bias of place still exists. As the Grade 5 students prepare to head out to middle school she described the skills that students will take with them to counter this bias:

A fifth grader asked the other day, “When I go to middle school will people think less of me?” And I said, “What do you think?” and she said, “I don’t know.” So I asked if they did, what would that be? She said, “That would be their bias.” I asked her If she knew how to deal with it and she said with confidence, “Ya, I do”! (AL, SA, TI)

Inquiry based teaching and learning, and a movement to the relational with an emphasis on teaching the student, not the subject was widely observed at the high school level. Sabo values and emphasizes the process of teaching over focusing on the content of what is to be taught. He expressed that he wants to know his students better and appreciates establishing strong relationships with them. As a result, his students are encouraged to exercise agency in their learning and to take their learning in directions that they feel connected to and that drive them emotionally. The students I observed were genuinely engaged in their service-learning projects, described in the previous chapter, and they were driving their learning and the direction of these
projects. Students were on the phone with community partners, conducting research online, building, measuring, digging, and so on. Students were engaged with their hearts, hands, head and spirit. Through their inquiry and service-learning they were developing skills and competencies necessary for positive and successful citizenship.

The human journey, from cradle to the grave, is a relational one. We are all interconnected and interdependent through our relationships to one another and to the earth. A connection to place and an appreciation for the uniqueness of place, including developing an understanding of the needs of places and people within those places contributes to the values of sustainability. We can nurture these values, in our education systems and communities, through fostering agency, belonging and active citizenship from Kindergarten through high school.

**Leadership and Collaboration**

*Orchestrating this process of change fittingly requires a school leader to treat teachers in the same way that teachers will be ideally treating their students: with respect and trust and a willing relaxation of control.*

*Gregory Smith and David Sobel*

Successful school transformation relies on a clear vision, strong and stable leadership, and effective collaboration. A unique feature of the schools in this study is the collaborative approach to leadership, built on a common vision and shared values, and working toward realization of the mission of the school or program through dialogue. Collaborative discussions and effective communication foster growth and development and a sense of accountability to students, colleagues, the community and the fundamental mission. Noddings (p. 10) emphasizes the necessity for engaging in collaborative dialogue as “essential in developing the capacity to
think critically” and to learn to “listen receptively to people both ‘inside’ and ‘outside’ the groups with which we identify” (p. 10). The remainder of the chapter explores these notions of leadership and collaboration within place-based and community-based models of education.

**Accountability Through Collaborative Dialogue, A Common Vision, and Shared Values**

Through conversations with teachers and administrators and during classroom observations, I was particularly attuned to the extent to which collaborative dialogue, a shared vision, and shared values, inspired teachers and motivated teachers to remain committed to transforming teaching and learning for sustainable living. One feature that was clearly evident and openly discussed was the recognition of the benefit to a suitable fit between teacher and school. It was not a case of saying, “you do not belong here or we are going to change you,” but rather, insight on the part of the teacher that this is a school or program that one values and desires to be a part of, and desires investing the energy and commitment to. Additionally, on the part of the school to be transparent and forthcoming and dedicated to the school or program’s mission. As I observed and heard from several teachers, and at one school in particular, when everyone is working toward a common goal and vision, and when teachers and leaders share similar values, there is no hidden agenda. Further, there is an openness that allows trust and honesty, effective communication, and meaningful collaboration to emerge. In reflecting on the culture and collaborative relationships, the principal of one of the schools shared that having a clear focus on the school’s mission and what one stands for helps to articulate and identify what is important to the school and to the teaching and learning community. This approach fosters an honest and supportive environment where colleagues and students learn to be accountable to one another, and to themselves, in authentic and meaningful ways. When asked what the benefits of
working in this manner were, he commented that what he appreciates is that sense of accountability towards one another, as follows:

There is something about the culture, the staff, the building; it is not a clique culture here at this school. We hold one another accountable. Every one is onboard and when they are not onboard they get called out, huge. I have been called out by people and it is a wonderful 360 feedback. (BW, SA, Adm)

Several teachers suggested that a common vision was fundamental to transforming schools and moving projects forward more efficiently, though teachers themselves are at various stages of buy-in and commitment. Sobel (2010) noted characteristics that contribute to buy-in, in relation to place and community based approaches:

Although not every teacher needs to have the characteristics of early adopters, enough need to be in favor of this direction to allow their more committed colleagues to try new things and occasionally be the beneficiaries of additional resources. When this happens, it is not uncommon for more people to begin experimenting with place-and community-based approaches until eventually a tipping point is reached and the culture of the entire school changes. (Sobel & Smith, 2010, p. 119)

This notion of early adopters and commitment fostering a turning point was reflected in my conversation with one high school teacher. Sabo stated, “More staff are onboard and those who aren’t question it respectfully and trust in the new administration” (TS, MHS, TI).

In relation to school leadership, this notion of opening space for experimentation and the unknown fosters a willingness to take risks and experiment within a supportive and risk-obliging environment where instructional leadership and hands-on support is valued.

**Safety Third: From Risk-Averse to Risk Obliging**

It was in conversation with one of the school principals that I was introduced and immediately drawn to the statement, “safety third.” Sitting with a few teachers and
administrators, I was exploring the key values of the school. To my surprise the principal, with one ear in our discussion and one ear out in the hall, offered up the phrase, “safety third.” Another administrator followed up on the principal’s declaration with this observation (as the principal had now found his way out to the hallway to attend to the needs of a parent), “Safety is a given. I feel we actually take risks here that many schools are not comfortable doing” (VP, SA, Adm).

The Sustainability Coach, also a teacher at the school, added, “Mr. W is incredible and he always has our back, no matter what the issue. He is a great person to bring things to if you want to take a risk. We take risks and we get his support for that,” (ATF, SA, TI) adding, “and he will say very openly to people…what I want you to do is to innovate and take a risk and to be thinking about kids through all of this. So we have that permission.” (ATF, SA, TI). When the principal returned to the room he further commented, “I would say I work for teachers and I represent students and families. One of the questions I am always asking is, ‘What do you need?’ When they tell me what they need I do my best to deliver it” (BW, SA, Adm). Deliver he does! One of the teachers shared a very sweet story of how, when the Kindergarten class returned from one of their outings to Shelburne Farms, they enthusiastically reported what they learned and more importantly where they learned it, to the principal. The “where” was an outdoor classroom structure and this group of beaming five-year olds declared that they wanted one for their school. The principal heard their request and in no time at all recruited a handy sidekick and constructed a similar structure for the schoolyard. “When you work with student and teacher passion and you have a leader whose middle name is passion, great things happen.”(ATF, SA, TI)

At the high school level I observed how when a school principal places the needs of the students first, the values of the school shift. Sitting in on a Wednesday, 7:30 am faculty meeting, I observed how the faculty as a collective is committed to helping the students develop as learners
by establishing strong relationships with students and a commitment to knowing students as people, and individuals. I was struck by the liberties that were granted and taken in one particular classroom to support authentic teaching and learning grounded in localism. This class teacher shared how he is granted a lot of liberty to do the work that he is doing changing school food systems through a garden-centered curriculum. These liberties are situated within supportive faculty meetings and a supportive administration, and a supportive community and supportive teaching district.

We have gotten by on the strength of the individual teachers and from a very supportive, cultured and educated community. We do these crazy things and then the state standards and ratings come out and we are always in the top few, the top, this year we came in at the highest. What did we do? At the very least we didn’t get in the way! I would like to think that we did something, but it is very hard to quantify. (TS, MHS, TI)

Meanwhile, beyond the cognitive act of teaching and learning at the high school, the principal and faculty appreciate and recognize the importance of recess time as a vital fragment in the daily school routine that contributes to student’s physical, social and emotional health and well-being. This, itself, is a risk that the school takes that flies in the face of the recent push in schools to eliminate recess, an effort to free up more instructional time (Chaker, 2006).

Safety third, taking risks, liberty…another teacher referred to the space and support that leaders offer as “freedom”. He noted that for his teaching style he preferred a leader who would give him a lot of freedom to work.

The leadership style that I like, many teachers are not comfortable with. Many teachers want things straightforward, cut and dry. I didn’t want it structured, but a lot of teachers prefer the structure. (ST, THMS, TI)
Another teacher echoed this comment, relating a willingness to welcome and take risks to reducing the need for control both in the school and in the classroom, and a greater appreciation of process versus content, which was explored in greater depth in Chapter 4.

A Calculated Improvisational Dance

Leaders who facilitate a culture of trust and innovation foster a willingness to embrace and commit to the process of change. Sobel and Smith (2010) succinctly describe what I heard time and time again from teachers and leaders, “Orchestrating this process of change fittingly requires a school leader to treat teachers in the same way that teachers will be ideally treating their students: with respect and trust and a willing relaxation of control” (p. 117).

I love the phrase “willing relaxation of control,” as it so accurately describes what I heard and saw. Stepping out of the norm is a risk, a risk that the teachers and leaders in the this case study readily embraced, resulting in richly diverse alternatives that are integrated and deeply rooted in their respective communities. Implementing place-based and community-based models of teaching and learning ultimately rests in the hands of the classroom teacher. But, as I have seen and heard, when teachers feel isolated and unsupported, their actions can lack clear direction and be fleeting or temporary in nature. One teacher spoke to the need for collaborative leadership and the following levels of support to evolve for true transformation and lasting change to occur: “…supportive school leadership, collaborative collegial relations and supportive cultural school environments, within supportive school boards and districts and a supportive community is what is necessary for lasting change.” (TS, MHS, TI)

As one principal so eloquently put it:

There is no model that says yeah, this is what it looks like, tastes like and feels like…we are on a pathway to create our own. This school is the only one of its kind. It is a calculated, improvisational dance. But the best part is because we are all
very collegial and we work well together, the teachers are all leaders in the school and it makes achieving our mission possible. (BW, SA, Adm)

Smith and Sobel (2010) echo this need for a collaborative partnership when they asserted that, “place-and community-based education demands real instructional leadership and a hands-on approach to teacher support from principals and central office administrators” (p. 124).

A hands-on approach to teacher support is something that the principals in this study actively believe and model. From being front-and-centre first thing in the mornings in welcoming students and families, to motivating and supporting teachers to continue to take innovative risks, to building outdoor classrooms and raised garden beds on their weekends, these principals are active in clearly visible ways. They are school leaders who put teachers, students, and families first and who strongly believe that meaningful learning happens in the schoolyard, the garden, in the park down the road, down by the lake or along the river, and, most importantly, that such learning is integrated with the community. Above all, they model unwavering conviction for what they believe in as individuals, teachers and leaders, and they demonstrate faith in the journey towards achieving the fundamental mission and vision for the best education that, in the words of Smith and Sobel (2010), “is one that sees schools as integrated with rather than segregated from the lives of the human and other-than-human beings that surround them” (p. 115).

**Collaborative Leadership: Teachers as Leaders**

A sense of collaboration and a common mission fosters a safe and equal partnership, making it possible for teachers to be leaders in the school. As a former teacher, one principal was very clear that leadership is a partnership, “[leadership] is a partnership and in leadership I am a teacher first” (BW, SA, Adm). Another administrator from the same school added, “there has been a shift in the way the adults (teachers and principals) at our school collaborate together, and
this has a huge impact on kids…which plays into our mission of sustainability” (VP, SA, Adm). The sustainability coach and teacher from one school shared that the process of learning and growing together through collaborative dialogue enables leadership to grow from within, “…we are developing as curriculum leaders. There are leaders emerging very strongly among all of us” (ATF, SA, TI).

In addition to coaching, another example of collaborative leadership was represented in various levels of planning and structural committees within a school. One school in particular functioned with a Stewardship Committee comprised of 12 to 18 members including parents, teachers and community members whose mission is to help the school overcome any barriers to fulfilling its mission, or as one teacher described, “they help make sustainability a reality for teachers.” (ATF, SA, TI). In addition to the Stewardship Committee, the Leadership Team (that functions as part of the governing team), comprised of staff, coaches, principal, community member and a member from Shelburne Farms has a lot of say in what the staff do in the curriculum. In the model, the staff has a large voice. The team seeks input from the staff, gathers the information and completes the work and then returns to the staff and asks, “is this what you want for a curriculum?” (ATF, SA, TI) Additionally, the leadership team will meet with external partners to gather information or resources and to build relations and liaise. Teachers evolve as leaders in a school community when they are encouraged to follow their passions. In this study, most of the teachers I spoke with were collaborators within a leadership function in their respective schools. These roles ranged from project or department coordinators, subject specific coaches or curriculum leads, while others took on larger roles in community development and as community liaisons. Furthermore, collaboration occurred, for one school in particular, with
groups and individuals beyond the walls of the school including parents and civic, educational and corporate community partners.

**Coaches: Onsite Support and Professional Development**

Subject and discipline specific coaches provided for a variety of roles including advocacy, mentoring, curriculum development, student and family support, and to act as a broker or liaison to develop and sustain community partnerships. It is a model that is gaining in popularity as an effective way to support teachers and to help teachers to develop in specific content areas and pedagogical practices. One teacher had this say about her role as a part-time coach:

I love being part-time coach and part-time teacher because I am not somebody outside looking inside, I am somebody inside looking at what is going on. It is really important because a lot of administrative leads, who I adore and love, lose track of the classroom awfully quickly, and I don’t want to lose track of the classroom, I am still part of the classroom (AL, SA, TI)

With respect to supporting teachers with the curriculum, this same coach identified that her goal was to:

help teachers to narrow their focus so they don’t feel so overwhelmed by all of this (various curriculum expectations) and I can say, look, we are different at this school so you can take X, Y and Z off your plate and focus on this and narrow in on our school mission (AL, SA, TI)

She went on to describe one of her “coach” tasks for the following day:

I need to walk over to the food shelf to find the right person to communicate how [the food shelf] works to the kids, to articulate it in a way that kids will understand it… as a classroom teacher we don’t have time to do these sort of things, as a fulltime teacher I never had time to do that. So those are the kinds of jobs that fall naturally into the lap of the coach, walk over there,
spend some time, talk to someone, figure out best fit for all. (AL, SA, TI)

Echoing this, another teacher shared, “I feel a large part of my job [as coach] is to help and support teachers to do what they want to do with the curriculum” (ATF, SA, TI). One way this role manifests itself is through the facilitation of study circles. As a teacher from the elementary school explained, “In study circles we use professional learning community models to reflect on our practice and engage in collegial conversations about student work, the curriculum and pedagogical practices” (ATF, SA, TI)

Reflecting on where the school has come from and where the school is going, one of the administrators shared:

We have a long ways to go, we aren’t there yet. We are on a steep trajectory, now can we sustain this? I worry about the economy, when the economy tanks the funding gets cut. I worry about ATF position as sustainability coach. It is so critical that we have this position, there is so much more to be done with this position and I don’t know that we will ever be in a position where we will not need it… maybe each school needs someone like that at their school, whatever the focus; someone who keeps that whole school on track and who can work with the principal and the parents and the teachers. (VP, SA, Adm)

**Stepping out of the Norm**

The very fact that all of these teachers considered themselves to be risk takers or administrators who explicitly highlighted the importance of taking risks affirms previous held notions that the education climate of the moment is one that is largely risk adverse and segregated from that which exists beyond the classroom. Pressure and concern for meeting and exceeding the standards and core competencies has a tendency towards compartmentalizing teaching and learning, fostering trepidation and a controlling uniformity that impedes individual teacher
strengths to shine and bloom. One middle school teacher questioned, “How do you let your most motivated and brightest teachers create in a public school environment right now?” And to his own question he offered that what is needed is trust in really good teaching: to offer more space to do the work that one wants to do, and to cultivate trusting relationships with the administration so that the administration will come to realize that they have special teachers so that they will be more inclined to let the teachers blossom. “I think the only way leaders can do it is to allow teachers to be a school within a school, or we lose kids because we don’t have alternatives and we should have alternatives.” ST, THMS, TI.

In the next chapter I will bring the study to a close and explore what it means for public school education to graduate students who are ready to take up contemporary, contextual and meaningful challenges.
Chapter 6

Graduating Students Ready to take up Contemporary Challenges

What can educators do to foster real intelligence?...We can attempt to teach the things that one might imagine the earth would teach us: silence, humility, holiness, connectedness, courtesy, beauty, celebration, giving, restoration, obligation, and wildness.

David Orr
We stand amid challenging and turbulent times in a world of unstable climate, social and democratic unrest, and an uncertain economic future. Ours is a culture of over consumption. The Earth’s population is beyond what it can sustain. Now, more than ever, we need to take action to recognize and respond to the Earth’s limited carrying capacity, and change our living patterns. We need to stop competing with the Earth and start collaborating with the Earth. I believe education has the potential to support new habits of mind and positive social change. As educators, we can no longer afford to be timid in our efforts to make a difference for our students. When we pause and reflect with some humility on what and how we are teaching the youth that stand before us, we know that standards-based schooling heavily concentrated on academics, and evaluating and measuring student outcomes is not the best that we can do for our students; let alone our own professional and personal integrity, the health of our community, and in cultivating a sustainable future. We need to help our students to see and create change toward enduring goodness, beauty, and joy in their communities instead of contributing to the chaos and further depletion of these communities and precious natural and human resources.

These results of this study convey how teachers and public schools are modeling and actively engaged in fostering the level of change that is necessary to support new ways of living and being in the world. The teachers in this study displayed a degree of humble self-reflection and a willingness to step away from the momentum of the current educational culture of content over process. They have adopted, in the words of Clarke (2012) a “counter-culture narrative” (p. xvii). Whereby personal and professional integrity is related to authentically engaging students through practical immersion with their communities, fostering the depth of understanding necessary to take up contemporary challenges. I heard how it is both tiring and rewarding to stand alongside one’s students and colleagues with this level of self-awareness. Teachers spoke
candidly about their striving to find balance (both professionally and personally) in a rapidly changing world and the necessity to model creative and critical thinking to empower students to consider with sincerity, how to live, think, do and be in a world of limits (Clarke, 2012). These teachers recognize the importance of teaching ecological and systems thinking in authentic and relevant contexts. They appreciate that the fast pace of modern life cannot be pushed on the preexisting cycles and flows in the natural world. Similarly, they recognize that the fast pace of modern life is not the pace of healthy child development and that we as teachers need to be the ones to advocate and act in the best interests of our students and future generations.

The schools in this study were fairly small and they prided themselves on knowing their students. The relational pedagogy was deeply valued and practiced. Furthermore, value was afforded to the relationships students formed within and to the natural and built communities and human and non-human constituents of those communities. Toch (2003) and Wagner (2002) identified that smaller learning communities enabled teachers to engage students in more rigorous curriculum. Their argument was that as teachers got to know students, they could challenge the students with greater academic demands that larger classes and schools find more challenging to accomplish. This finding was duly noted in this study. All three publicly funded schools were considered small schools. They embraced “alternative” instructional methods and programs and one of the factors that contributed to the school or program’s success was the relational component to importance of academic rigour with all three schools explicitly referencing the importance of academic rigour. Moreover, these smaller schools facilitated collaborative leadership, collaborative curriculum design and team teaching, and community partnerships and civic engagement.
Transformation Towards Sustainable Public Schooling

As we near the final few months in the United Nations Decade of Education for Sustainability (2005–2014) it would appear that we have merely scratched the surface and there is much important work ahead of us if we are to transform education and cultivate a sustainable future for all. This research exploring teacher perspectives, from publicly funded K to 12 schools, helps to solidify the key components for successful school transformation, using a place-based education framework and the principles of education for sustainability. Publicly funded schools and teachers who are interested in sustainable schooling may find the following suggestions, based on the results of this study, useful in finding one’s footing and taking those first steps towards sustainable public schooling.

Shared Vision and Mission

A shared and common vision for the mission of the program or school is essential to teacher buy-in and commitment. Whether teachers arrive ready to carry the mission or come to believe in the vision and mission with time, the consensus in this study is that teachers need to want to teach in this manner. Teachers in this study demonstrated a genuine commitment and relationship to place-based and community based experiential learning and the values of sustainability. Many a teacher noted that the rewards outweighed the challenges of this sometimes tiring and draining work. Many noted the deeper the exploration and engagement, the greater the reward. Collectively working towards a shared vision and mission facilitates authentic collaboration: collaborative leadership, inquiry, curriculum design, planning and instruction, and meaningful community partnerships. Like all natural cycles, the collaboration that is fostered by a shared vision and mission in turn strengthens the mission and vision.
Collaborative Leadership

Shared and collaborative leadership models proved very successful to the schools in this study. These models represent a network of relationships facilitating a sustainable model of teaching and learning. Expert voices are recognized in teachers, community members, and parents as well as those of the administration. The principals’ behaviour and demeanor set the tone for each of the schools that I visited. The values the leaders and educators modeled for their students and one another spoke volumes. This was most definitely the case for the principals that I observed in the K to 5 school and the high school. Principals were speaking with their hands and feet as active members and learners in the community. This promoted an open and positive tone in the school for students, families, and faculty. Furthermore, recognizing individual strengths among colleagues and supporting shared and collaborative leadership encouraged a culture of mutual respect and accountability: accountability to self, to one another, to students, the community, and the common vision. Accountability and collaborative leadership fosters a sense of trust and a willingness to embrace alternatives, creating the space for teachers to step out of the norm and take “risks,” and for teachers to feel confident and supported in using this space to take “risks.”

There has been a shift in the way the adults (teachers and principals) at our school collaborate together, and this has a huge impact on kids...which plays into our mission of sustainability. (VP, SA, Adm)
Collaborative Curriculum Design and Implementation

While the impetus for change may originate with one primary individual, transforming that vision into a successful program requires collaborative planning, design and delivery. Results suggest that curriculum design and implementation towards sustainability should consider economic, social, and environmental factors in relation to a sound understanding of the district, state and core curriculum standards when planning education for sustainability curriculum. A couple such examples noted in the results, studied and analyzed the mandated curriculum and standards to identify themes related to sustainability, working collaboratively as grade level or program colleagues to map the district, state, or core standards to authentic integration in real world and local natural and built settings. Applying the lens of sustainability and teaching through place and the language of nature, we can ensure that students have opportunities to practice critical thinking nested among authentic critical issues. Place-based, community-based education for sustainability provides opportunities for real-world settings to inform student’s learning while benefitting the community. This collaborative process further presented teachers with opportunities to explore their own values and attitudes towards local sustainability and it encouraged critical thinking and decision making that shaped personal lifestyle and economic choices. This collaborative process also fostered a level of accountability to oneself, one’s students, one’s colleagues, and the overarching vision.

Situating Teaching and Learning in the Local

The results from this study lead me to speculate that students from these schools learned more about communication, critical thinking, problem solving and the principles of ecology and nature by being immersed their local communities and school gardens, studying the living nature systems around them than they ever could from filling out worksheets and reading from a
textbook. When these teachers took their students beyond the walls of the classroom and studied an aspect of the community or the food systems in the school garden, they were learning in a manner that reflected the way that they experienced the world as, inter-disciplined, connected, and nested. Great potential abounds in reorienting teaching and learning to ecological and systems thinking, in replicating place-based and community-based teaching and learning and drawing on the variety of examples presented in this study and across all grade levels.

Knowing the local well enables people to become more skillful and confident about their capacity to shape their own lives in ways that will benefit themselves and their children and grandchildren (Smith, 2002, p. 594).

Community Partnerships and Civic Engagement

The schools in this study demonstrate that integrating the community in the life of the school and learning in the community is a reasonable and attainable goal. Establishing partnerships with community leaders, agencies and local business, and inviting them to sit on planning, policy, and curriculum committees has a positive impact on the school and the community. This relationship helps both parties to recognize what needs exist in the other and how they can collaborate to fulfill that need fostering sustainable relationships and communities. Creating community connections and working and celebrating together nurtures connections and belonging. As the schools in this study demonstrated, the benefits of learning in the community are manifold. Most notably, learning that is situated in place and in service to the local
community reduces personal and communal isolation and alienation and contributes to civic pride, stewardship and an enduring commitment and responsibility to self and one’s community.

**Teacher Education, Professional Development and On-site Coaching**

While this study didn’t examine teacher education, the results suggest that a transformation towards sustainable public schooling requires reorienting teacher education to the goals of sustainable development. Teacher education institutions are key associates in reorienting teacher education to address sustainability, influencing policy, curriculum, pedagogy and scholarship. While it may seem simple, teacher education institutions must consciously ensure that teacher education includes developing awareness for how humans relate to the world and to one another. It requires a shifting consciousness to one that is more in line with ecological systems thinking, one of collaboration and not competition. It will require an “unlearning and a relearning” (Howard, 2012, p. 156) on many cultural and institutional levels.

The kind of professional development that is necessary to transform public schooling toward the values of sustainability is the kind that seeks a depth of understanding and transformation and requires a commitment to ongoing personal reflection and to the values of sustainability. It is a measure of change that demands a new way of living and being in the world. It requires a degree of self-reflection and a willingness to step beyond the rabid pursuit of material accumulation. It involves adopting, in the words of Clarke (2012) a “counter-cultural
narrative” (p. xvii). To teach children to find a new state of balance with the natural world, professional development must help teachers to scrutinize how they live, think, do and be in a world with a limited carrying capacity. Professional development needs to be well-conceived and must work in collaboration with the existing curriculum standards. The public schools in this study demonstrate that it is possible to have a place-based and sustainability education focus on embodied, environmental, and social learning and still perform well on state standardized measures. It’s not a one or none phenomenon, it's a ‘both’ phenomenon. Finally, professional development that successfully fosters transformation towards sustainability and a commitment to change must be an ongoing and enduring commitment on the part of teachers, school leaders and policy makers.

On-site coaches fulfill many roles from supporting teachers on day-to-day matters, guiding and supporting subject specific curriculum and pedagogical needs and goals, advocating on behalf of teachers and community members, liaising with community partners, teaching, and assisting in leadership capacities. On-site coaches support implementation and contribute toward reducing teacher burnout. Schools interested in pursuing a curriculum of change would do well to invest in an on-site coach.

**Shaping Healthy Habits**

As teachers we hope our students will retain certain habits of mind, intellectual curiosity, and eagerness (or at least willingness) to go on learning. Research and practice points to a number of ways teachers can successfully engage students’ intellectual curiosities. Education for sustainability reminds us that we must not diminish humanity’s interconnectedness by focusing too heavily on academics. Healthy habits of mind, including an appreciation and a willingness to change one’s habits to create lasting change for a sustainable future do not exist in
isolation of community. Furthermore, the results indicate that healthy habits of mind develop gradually. When we examine the habits that students take with them following their elementary, middle school, or high school years we see the emergence of well-rounded students who understand the importance of citizenry, contributing to make one’s community a better place and living in the world today for a sustainable tomorrow. Teachers in this study acknowledged the importance of giving students the space and time to fully develop as well rounded individuals. One teacher likened child development to the growth of vegetables in the garden, that the fast pace of modern life is not the pace of nature, nor is it the pace of healthy child development.

Recommendations for Future Research

My research was based on three school sites and on the perspective of teachers within those schools. Future research will do well to provide more evidence to more firmly establish that education for sustainability is not a one or none phenomenon but a “both” phenomenon. In a standards-based era, a comparative study, that includes data on student performance and achievement, may help to affirm that students can achieve and exceed standards through place-based, experiential learning that respects ecological limits and recognizes the urgent need to change our relationship with the earth from competitive to collaborative. In addition, a study to explore the phenomenon of student experience, in and beyond school, and students sense of place and sustainable values would help us to better understand the relevance of sustainable education
for students’ day-to-day life beyond school. Such studies on their own or in combination may help to confirm the need; as well as the benefit, for a curriculum and school structure that reflects the uniqueness of place as opposed to standardizing place through a standardized curriculum. A study that examines how to interpret standards for a place-based pedagogy may help to establish more explicit guidelines for sustainability education curriculum development, much the same way that the education for sustainable development guidelines offer explicit goals for teaching for sustainable development. A longitudinal study to document the transformation of a school and curriculum, from start to finish and five years later, would also contribute to the field. Furthermore, there is worth in examining how a change in educational values and what drives these priorities can influence cultural transformation, examining the local community beyond the school to determine the positive impact the school has on the community.

**Conclusion**

We must all share the responsibility for creating a more sustainable future. It is time for public schools—leaders, policy makers and teachers—to act to make education for sustainability the central mission of public education. Actions speak louder than words and we must model these values by choosing wisely and in collaboration with our students the context for their lessons, the choice of materials we use and the relationships to person and place that we model. We must educate our students in a manner that will engage them in the joy of the moment, and inspire and motivate them to create the change that is needed for enduring economic prosperity, social equity, and environmental integrity. We must teach students and model for students, that each generation must meet its needs without jeopardizing the prospects of future generations to meet their needs. We need to transform our educational system to prepare young people for the conditions that they will face in their lifetime.
Where better to teach and learn from, and offer the level of engagement and inquiry, necessary for sustainable development, than through what exists outside our classroom doors—our own schoolyards and the rich, natural and built environments of our local communities. Developing a relationship with the natural environment has a lasting impact on children’s quality of play and environmental consciousness, stewardship, and identity (Chawla, 1998; Louv, 2008; Orr, 1994; Sobel, 2008). Educators who ground their teaching and curriculum in place embrace meaningful lived experiences that encourage students to draw connections between what they are learning, to their own experiences and local communities.

Fundamental change is necessary to support enduring respect and success for teaching and learning that is grounded in and committed to the values of sustainability. This change must unfold within the individual and our institutions but more importantly, the successful implementation of these varied, place-based and community-based approaches, spanning Kindergarten to Grade 12, require as Smith and Sobel (2010) articulated, “a process of cultural transformation” (p. 117). I believe the way we choose to school our children can positively influence this process of cultural transformation that Smith and Sobel (2010) describe. But, if we are to truly prepare our students for the next stage of life as actualized adults, we need to show them that we value them as people from diverse places with unique strengths and needs; and not merely cogs in a standardized, economically driven, curriculum machine. This effort will require a collaborative effort from parents, teachers, administrators and community members and leaders as we reorient our systems of education for the values of sustainability.
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doi:10.1080/13504622.2011.609615


October 11, 2013

Ms. Serena Manson  
Master’s Student  
Faculty of Education  
Queen’s University  
Duncan McArthor Hall  
511 Union Street West  
Kingston, ON, K7M 5R7

Dear Ms. Manson:

RE: Amendment for your study entitled: GEDUC-698-13 Lessons from the Schoolyard: Teaching Outside the Classroom; ROMEO# 6010859

Thank you for submitting your amendment requesting the following changes:

1) To change the location of the study and conduct the research (observations and interviews) at three schools with teachers in Burlington, Vermont, instead of Ontario;
2) To include the use of video;
3) Revised Letter of Information Parents;
4) Revised Letter of Information Teachers.

By this letter you have ethics clearance for these changes.

Good luck with your research.

Sincerely,

Joan Stevenson, Ph.D.  
Chair  
General Research Ethics Board  
cc: Dr. Rena Upitis, Faculty Supervisor
Dear Participant,

I am writing to formally request your consent to participate in a research study titled *Lessons from the schoolyard: Teaching beyond the classroom*. The purpose of this study is to explore and describe what teaching and learning looks like, feels like and acts like when the walls of the classroom become permeable and the schoolyard and the local community become the classroom. I wish to explore and describe how teachers use the schoolyard and the local community to teach traditional subjects within the constraints of the formal curriculum and expectations. This study is part of the requirements towards my Master’s in Education at Queen’s University, in Kingston, Ontario. This study has been granted clearance according to the recommended principles of Canadian ethics guidelines and Queen’s University policies.

Thank you for granting me permission to conduct observations for my study in your classroom and other teaching settings. I appreciate your generosity in agreeing to do this and look forward to my time with you and your students. I hope to observe you teach lessons on three to five separate occasions during the months of November and December. During my observations, I will quietly take detailed notes of pedagogical conditions in the teaching/learning setting, such as physical and design features, rhythms of learning, teaching method, community and curriculum integration, and community engagement and integration activities. My interest is not to evaluate but to observe and describe. In addition, I would appreciate your participation in the following ways, as described below.

**Your Participation**

You may consent to participate in one, all or none of the activities described below. You will be asked to grant your permission on a separate consent form called “Teacher Participant Consent for the Use of Photographs, Video and Classroom Artifacts”.

This research study explores how you utilize your local community and schoolyard as a classroom and how you integrate teaching from these settings with the formal curriculum. I need your formal consent for your involvement in this study. Furthermore, I am requesting additional consent for any or all of the following: (1) photographs, (2) videotape and/or (3) photocopied samples of classroom artifacts.

During my visits to your class I would like to document examples of some of the schoolyard and community learning activities and lessons that I observe through (1) photographs, (2) videotape, and (3) photocopied samples of classroom artifacts. I will do so inconspicuously so as not to disrupt the lesson in progress. Should you give consent for each activity, I will use these data to support my analysis and understanding of how teachers teach from the schoolyard and the local community. It is possible that these data would be used to present research results at conferences or for publication in academic journals. No identifying information will be given and confidentiality will be maintained to the extent possible. Your separate consent is sought for these additional methods of analysis using the separate consent form called “Teacher Participant Consent for the Use of Photographs, Video and Classroom Artifacts”.

In addition to photos that I will take, I will ask for you to take three photos: (a) a photo of a place in the schoolyard/community that is of importance to your teaching, (b) a photo of an object, something in the schoolyard space/community that you use as a “tool” for teaching, or is of significance to the work you do, (c) a
photo of your choice, but will be of something that resonates with your work and goals for teaching beyond the classroom.

I am also interested in collecting several artifacts during one of the observation days. I am interested in collecting samples of letters to parents describing schoolyard and community integrated learning, letters to or from community members re: achievements, contributions or appreciations, samples of lesson plans, and samples of student work. Only photocopies of student work samples will be used, all originals will be returned to you by the end of the observation period.

Photographs, video and classroom artifacts will be presented without identifying information and confidentiality will be maintained to the extent possible. I will not use or analyze photographs, videotape or classroom artifacts that I have not been given permission to use.

**Commitments Related to Your Involvement**

Participation in this study is voluntary. You are free to withdraw from the study at any time by contacting me Serena Manson at serena.manson@queensu.ca or my supervisor, Rena Upitis at rena.upitis@queensu.ca. You may request the return of all of the photographs, videos and artifacts without consequence. There are no known risks, discomforts or inconveniences associated with participation in the research study. Please note that there is no monetary compensation for participation in this study.

Digital copies of photographs, videos and artifacts work will be maintained as secured computer files. All digital data will be stored in a password-protected computer. This computer will be kept in a locked space. As required by Queen's University, all data will be safely stored for a period of five years. After this time, data will be deleted or destroyed. Although teacher, school and students' names will be collected during the study, confidentiality will be protected to the fullest extent possible by assigning pseudonyms to protect identities. Your signature below indicates that you understand these provisions around confidentiality and anonymity.

The data will be used for research purposes only and are totally unrelated to teacher evaluation or promotion. Only my supervisory committee and I will have access to the data. If your data are made available to other researchers or secondary analysis, used at conferences or included in publications or various types, including journal articles, professional publications, newsletters, books, and instructional materials for schools, your identity and the identity of your school will not be attached in any way. The results of this study may be disseminated in research publications and conference presentations. Please keep this letter for your information.

If you have any questions about my research study, now or at any point in the future, please feel free to contact me at any time. You may also direct any questions to my supervisor, Dr. Rena Upitis, at 613-533-6212 or upitisr@queensu.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at 613-533-6081 or chair.GREB@queensu.ca.

Yours sincerely,

Serena Manson
Master's candidate,
Faculty of Education, Queen's University
Kingston, Ontario
613-546-8851
serena.manson@queensu.ca
Teacher Participant Consent for Participation

Project Title: Lessons from the schoolyard: Teaching beyond the classroom

- I have read and retained a copy of the Letter of Information and consent forms and I have had questions answered to my satisfaction.
- I understand that I am being asked to give consent to participate in the research project entitled Lessons from the schoolyard: Teaching beyond the classroom.
- I am aware that the purpose of this study is to explore and describe how neighbourhoods and schoolyards become classrooms and how teachers teach traditional subjects within the constraints of the formal curriculum from the schoolyard and the local community.
- Under a separate consent form, I understand that I am being asked to give consent to participate in additional ways (through the use of photographs, videotape and photocopies of classroom artifacts).
- I understand that my participation in this study is voluntary. I am free to withdraw from this study at any time and to request the return or removal of all or part of my data with no consequences.
- I understand that there are no known risks, discomforts, or inconveniences associate with participation in this study.
- I understand that confidentiality will be protected to the extent possible, that my name will be removed from the data, and have been informed of the steps that will be taken to ensure appropriate access and storage of the data.

If I have any questions about this project, I understand that I can contact the principal investigator, Serena Manson by telephone at 613-546-8851 or by email at serena.manson@queensu.ca or her supervisor, Dr. Rena Upitis, at 613-533-6221 or upitisr@queensu.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at 613-533-6081 or chair.GREB@queensu.ca.

If you consent for to participate in the study, please sign one copy of this letter as well as the Consent for the Use of Photographs, Video and Classroom Artifacts and return it to Serena Manson, Faculty of Education, Queen’s University, Kingston, Ontario K7L 3N6. Retain the second copy for your records.

I have read the above Letter of Information and all my questions about this project have been answered to my satisfaction. I hereby give consent to participate in the study "Lessons from the schoolyard: Teaching beyond the classroom".

Name of Teacher (please print):_____________________________________________________

Signature of Teacher:___________________________________________________________

Date: _______________________________________________________________
Teacher Participant Consent for the Use of Photographs, Video and Classroom Artifacts

Project title: Lessons from the schoolyard: Teaching beyond the classroom

Please sign one copy of the Teacher Participant Consent for the Use of Photographs, Video and Classroom Artifacts and return to Serena Manson, Faculty of Education, Queen’s University, Kingston, Ontario K7L 3N6. Retain the second copy for your records.

Teacher’s Name (please print): ________________________________________________________________

Name of School (please print): ________________________________________________________________

The table below is to allow you to choose which data collection activities you wish to consent to.

Please initial where you are willing to grant permission for use of your data. Please remember that you can change these permissions prior to project completion by contacting me, Serena Manson at serena.manson@queensu.ca.

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I understand that confidentiality will be maintained to the extent possible and that neither your name nor your school’s name will be associated with the photographs, video footage and classroom artifacts.

Teacher signature: ________________________________________________________________

Date: ________________________________________________________________

If you would like a copy of the results of the study please provide your email or postal address below:

Email address: ________________________________________________________________

Postal address: ________________________________________________________________
Letter of Information for Parents/Guardians of Students

Project title: Lessons from the schoolyard: Teaching beyond the classroom
Date: October 28 2013

Dear Parent/Guardian,

I am writing to request your consent for your child to participate in a research study titled Lessons from the schoolyard: Teaching beyond the classroom. The purpose of this study is to explore and describe what teaching and learning looks like, feels like and acts like when the walls of the classroom become permeable and the schoolyard and the local community become the classroom. I wish to explore and describe how teachers use the schoolyard and the local community to teach traditional subjects within the constraints of the formal curriculum expectations. This study is part of the requirements towards my Master's in Education at Queen's University, in Kingston, Ontario. This study has been granted clearance according to the recommended principles of Canadian ethics guidelines and Queen's University policies. Your school's principal and your child's teacher have given permission for me to conduct observations for my study in your child’s classroom.

I will visit your child’s class to observe on three to five separate occasions through the months of November and December. During my observations, I will quietly take detailed notes of pedagogical conditions in the teaching/learning setting, such as physical and design features, rhythms of learning, community and curriculum integration, method and directions, and classroom activities. My interest is not to evaluate but to observe and describe. In addition, I will interact with children in the following ways, as described below.

Your Child’s Participation
You may consent to your child’s participation in one, all or none of the activities described below. You will be asked to grant your permission on a separate consent form called “Parent/guardian Consent for the Use of Photographs, Video and Student Work Samples”.

This research study explores how neighbourhoods and schoolyards become classrooms and how your child’s teacher integrates teaching from theses settings with the formal curriculum. As your child is a member of the Second and Third Grade Team, I need your permission for your child’s involvement in this study. In addition, I am requesting additional consent for any or all of the following: (1) photographs, (2) videotape and/or (3) photocopied samples of your child’s work (provided by the teacher).

During my visits to your child’s class I will document examples of some of the schoolyard and community learning activities and lessons that I observe through (1) photographs, (2) videotape, and (3) photocopied samples of children’s work. I will do so inconspicuously so as not to disrupt the lesson in progress. Should you give consent for each activity involving your child, I will use these data to support my analysis and understanding of how teachers teach from the schoolyard and community. It is possible that these data would be used to present research results at conferences or for publication in academic journals. No identifying information will be given and confidentiality will be maintained to the extent possible. Your separate consent is sought for these additional methods of

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analysis using the separate consent form called “Parent/Guardian Consent for the Use of Photographs, Video, and Student Work Samples”.

Commitments Related to Your Child’s Involvement
Participation in this study is voluntary. You are free to withdraw your child from the study at any time by contacting me Serena Manson at serena.manson@queensu.ca or your child’s teacher. You may request the return of their work, photographs and video without consequence. Your child’s standing at school will in no way be affected should he or she choose to withdraw or to not participate. There are no known risks, discomforts or inconveniences associated with participation in the research study. Please note that there is no monetary compensation for participation in this study.

Digital copies of photographs and videos and work samples will be maintained as secured computer files. All digital data will be stored in a password-protected computer. This computer will be kept in a locked space. As required by Queen’s University, all data will be safely stored for a period of five years. After this time, data will be deleted or destroyed. Although teacher, school and students’ names will be collected during the study, confidentiality of students will be protected to the fullest extent possible by assigning pseudonyms to protect identities. Your signature below indicates that you understand these provisions around confidentiality and anonymity.

The data will be used for research purposes only and are totally unrelated to course or school requirements at your child’s school. Only my supervisory committee and I will have access to the data. If your data are made available to other researchers or secondary analysis, used at conferences or included in publications or various types, including journal articles, professional publications, newsletters, books, and instructional materials for schools, your identity and the identity of your child will not be attached in any way. The results of this study may be disseminated in research publications and conference presentations. Please keep this letter for your information.

If you have any questions about my research study, now or at any point in the future, please feel free to contact me at any time. You may also direct any questions to my supervisor, Dr. Rena Upitis, at 613-533-6212 or upitisr@queensu.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at 613-533-6081 or chair.GREB@queensu.ca.

Yours sincerely,

Serena Manson
Master’s candidate,
Faculty of Education, Queen’s University
Kingston, Ontario
613-546-8851
serena.manson@queensu.ca
Parent/ Guardian Consent for Student Participation

Project Title: Lessons from the schoolyard: Teaching beyond the classroom

- I have read and retained a copy of the Letter of Information and consent forms and I have had questions answered to my satisfaction.
- I understand that I am being asked to give consent for my child to participate in the research project entitled Lessons from the schoolyard: Teaching beyond the classroom.
- I am aware that the purpose of this study is to explore and describe how teachers teach traditional subjects within the constraints of the formal curriculum from the schoolyard and the local community.
- Under a separate consent form, I understand that I am being asked to give permission for my child to participate in additional ways (through use of photographs, videotape and photocopies of my child’s classwork and workbooks).
- I understand that my child’s participation in this study is voluntary. I am free to withdraw my child from this study at any time and to request the return or removal of all or part of his/her data with no consequences.
- I understand that there are no known risks, discomforts, or inconveniences associate with participation in this study.
- I understand that confidentiality will be protected to the extent possible, that my child’s name will be removed from the data, and have been informed of the steps that will be taken to ensure appropriate access and storage of the data.

If I have any questions about this project, I understand that I can contact the principal investigator, Serena Manson by telephone at 613-546-8851 or by email at serena.manson@queensu.ca or her supervisor, Dr. Rena Upitis, at 613-533-6221 or upitisr@queensu.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at 613-533-6081 or chair.GREB@queensu.ca.

If you consent for your child to participate in the study, please sign one copy of this letter as well as the Parent/Guardian Consent for the Use of Photographs, Video and Student Work Samples and return it to your child’s teacher or to Serena Manson, Faculty of Education, Queen’s University, Kingston, Ontario K7L 3N6. Retain the second copy for your records.

I have read the above Letter of Information and all my questions about this project have been answered to my satisfaction. I hereby give consent for my child to participate in the study “Lessons from the schoolyard: Teaching beyond the classroom”.

Name of Parent: ______________________________________________________

Name of Teacher: _____________________________________________________

Student’s Name: _____________________________________________________

Signature of Parent on behalf of student: _________________________________

Date: __________________________________________________________________
Parent/Guardian Consent for the Use of Photographs, Video and Student Work Samples

Project title: Lessons from the schoolyard: Teaching beyond the classroom

Please sign one copy of the Parent/Guardian Consent for the Use of Photographs, Video and Student Work Samples and return to your child’s teacher or Serena Manson, Faculty of Education, Queen’s University, Kingston, Ontario K7L 3N6. Retain the second copy for your records.

Student’s Name (please print): ________________________________

Name of Teacher (please print): ________________________________

The table below is to allow you to choose which data collection activities you wish to consent to.

Please initial where you are willing to grant permission for use of your child’s data. Please remember that you can change these permissions prior to project completion by telling your child’s teacher or me, Serena Manson at serena.manson@queensu.ca.

<table>
<thead>
<tr>
<th>Areas where your child’s data could be used</th>
<th>Use of Photographs of your child</th>
<th>Use of Videotape of your child</th>
<th>Use of samples of work</th>
<th>No permission granted</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Viewing for research purposes only</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Publication in a journal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Presentation at a conference</td>
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<td></td>
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<tr>
<td>(4) Demonstration on a Website/DVD</td>
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</table>

I understand that confidentiality will be maintained to the extent possible and that neither your name nor your child’s name nor your child’s school name will be associated with the photographs, video footage and classroom artifact samples.

Parent signature: __________________________________________

Date: ______________________________________________________

If you would like a copy of the results of the study please provide your email or postal address below:

Email address: ______________________________________________

Postal address: ______________________________________________
Appendix C: PARTICIPANT AND SITE CRITERIA

The following site criteria must be met:
• The outdoor teaching program must be in a public elementary school for students, Grades K to 6
• The teaching and learning occurs in a publicly funded school
• The program is considered to be exemplar in its class
• The program must have an English medium
• Lessons from the schoolyard and community must be integrated within the program, not one-offs
• The school is in an urban or semi-rural area

The following site criteria would be ideal:
• The school/programs span K to Grade 12
• Teachers access the schoolyard and/or community daily for teaching and learning
• All variety of subjects and content skills are taught from the site

The following participant criteria must be met:
• The participant is a certified teacher
• The participant teacher teaches in a publicly funded school
• The participant teacher teaches a variety of subjects and content skills beyond the classroom walls
• The participant teacher has been teaching beyond the classroom for at least two years
• The participant teacher can speak to the curriculum and pedagogy at the school
• The participant teacher teaches in English

The following participant criteria would be ideal:
• The participant teacher has been teaching beyond the classroom for at least 5 years
• The participant teacher teaches beyond the classroom in all seasons
Appendix D: SAMPLE INTERVIEW QUESTIONS

Interview Guide / Potential Questions

- General demographic questions…
  - What is your academic background?
  - How long have you been teaching for?
- How would you describe the approach to teaching beyond the classroom that you take with your students?
- Please describe how you came to integrate the curriculum with the local natural and built environments.
  - Have you always integrated lessons outside of the classroom?
  - What was the turning point? Is there one person who inspired you?
- Please tell me about the curriculum or framework that you use and how it guides your lessons and teaching practice.
- How would you describe your teaching philosophy and/or pedagogy?
- Will you please describe some of the benefits of teaching beyond the classroom that cannot be realized in the classroom?
- Will you please describe how your teaching beyond the classroom changes with the seasons.
- How does teaching beyond the classroom benefit your teaching?
- How does teaching beyond the classroom nurture you?
- How does it nurture your students?
- Do you recall a time when teaching beyond the classroom detracted from your teaching?
- How do your students react to lessons beyond the classroom?
- How would you describe the level of student engagement in these lessons?
- What benefits do you see for your students in experiencing lessons beyond the classroom?
- What do you see as some of the social or affective benefits for students in having lessons outside of the classroom?
- Do lessons beyond the classroom detract from your students’ learning? If so, how?
- Would you say that teaching beyond the classroom improves learning outcomes? Please describe.
- What challenges have you met with in teaching beyond the classroom?
- How did you overcome these challenges?
  - What advice do you have for other teachers who want to teach beyond the classroom but are facing similar challenges?
- How do you go about planning for this curriculum?
  - Please describe the process, players and resources
  - Are there certain curriculum resources that you find to be of great benefit for your work?
- How do you go about integrating the standards based curriculum expectations and testing with your curriculum?
- Please describe the professional development that supports your practice.
  - What professional development is needed for teachers?
- How have parents reacted to the work you are doing?
- Would you like to share anything else that would help me to fully understand the approach that you take in teaching beyond the classroom?
Appendix E: Observation Guide

Teaching/Activity Observation Guide

Purpose:
* To develop and understanding of the context
* To describe the context, the natural and built environments
* To develop and understanding of the curriculum and pedagogy
* To describe teacher and student engagement

<table>
<thead>
<tr>
<th>Date:</th>
<th>Location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Name:</td>
<td>Observer:</td>
</tr>
</tbody>
</table>

Routines and Schedules:

<table>
<thead>
<tr>
<th>Location of class:</th>
<th>Description of the physical space:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Task/ Event</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>
Describe how the natural/built environment is used during the lesson:

Evidence of problem solving, collaboration and student agency in the natural setting:

<table>
<thead>
<tr>
<th>Class Activities and Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of class:</td>
</tr>
<tr>
<td>Description of the physical space:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
</table>

Other observations and notes of interest:
Appendix F: Deep Economy Discussion Questions

Deep Economy

Reading 5 (Chapter 3: pp 95-128)

Questions (Base your answers to these questions on the reading.)
1. What is meant by "hyper-individualism"?

2. Provide evidence from the book that we are becoming more "individualistic".

3. In what ways has our current economy damaged our "sense of community"?

4. "Three-quarters of Americans confess they don't know their next-door neighbors." Do you?

5. Look up and explain "the law of diminishing returns".

Discussion Questions (Be prepared to discuss these in class.)

- "When we had a lot of community and not much stuff, it made sense that we aimed for stuff. But why do we keep aiming for it?"

- What is the value of friendship?
  - Would you rather lose your new iPod or a close friend?
  - As an adult, would you rather live in a mansion with no friends or in a neighborhood where you visit with neighbors on a weekly basis?

- We are at the halfway point of this book. What are your thoughts so far? Is he making sense? Are the problems real? Are the solutions doable? Is a shift to "local" enough?

Next Reading: pp 129-155
Appendix G: Fall Harvest Celebration Program

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the
ROOT

MHS FALL HARVEST CELEBRATION '13