Education for Sustainable Living:
Exploring the Landscape of one Urban High School’s Sustainability Practices and Values

by

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Abstract

Education for Sustainable Living (ESL) requires a whole-system pedagogical shift that changes the discourse from a positivistic worldview into one founded on ecological principles. The emerging environmental and sociopolitical challenges of the 21st century are complex, and schools present an important platform embracing sustainable changes. This participatory action research surveyed staff attitudes and student values from one Manitoban urban high school, to better understand the school culture of sustainability. In addition, a school wide Equity Conference was profiled for contributions to ESL through student exit slips; and a focus group with teachers where survey data was discussed also became part of the data corpus. The intent of this research was to understand on a deeper level how sustainability projects and initiatives are related to a culture of sustainability school wide. From these findings, recommendations to improve a whole-school approach to sustainability are provided.

Keywords: Educating for Sustainable Living, Transformational School-Wide Change, Participatory Action Research.
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Dedication

I would like to dedicate this dissertation first and foremost to my husband Neil and my two sons Erik and William, who share my love of nature and bring me immense happiness everyday. Also, a special thank you to my grandmother Annabelle, who completed her Masters of Education many years ago and has taught me countless valuable life lessons.
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2. Four Pillars of Sustainability [Image] (City of Nanaimo, 2015)
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Chapter 1

“The great challenge of our time: to create sustainable communities – that is to say, social and cultural environments in which we can satisfy our needs and aspirations without diminishing the chances of future generations” (Capra, 1996, p. 4).

The 21st century has several key emerging ecological and sociopolitical global challenges to face, and therefore sustainability can no longer be regarded as an idealistic notion for a select few to follow (Hopkins, 2011, Oct). Globalization has launched us into the age of global citizenship, and schools have an important role to play in shifting the paradigm towards sustainable living. There have been many benefits of globalization such as exposure to cultural diversity, interconnectedness of people and the sharing of information around the world. But it has not come without a huge cost to Indigenous people, or as Anthony Giddens points out, the detraditionalisation of local cultures, as well as manufactured risks to humans on a global scale such as climate change (Giddens, 2003). The problems have been numerous; the spread of infectious disease, inequity between countries, unethical corporate practices and pollution to the air, water and soil. The Western cultural context we currently live in is one of consumerism and ultimately has put the worth of goods and services over the wellbeing of people. All of these injustices are what led to the United Nations Decade of Education for Sustainable Development, 2005-2014, and the journey is far from complete. Now that we have reached an end, we enter a second phase, as we are only just beginning to understand what is required of schools in building this capacity (Hopkins & McKeown, 2002, p. 13).

The original definition of sustainable development is credited to the founder of the Worldwatch Institute, Lester Brown (Capra, 2007, p. 10). It is now widely accepted by United Nations Educational, Scientific and Cultural Organization (UNESCO), and government officials
that sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. 37). This definition did not become part of the global consciousness until it was adopted by the United Nations in 1987, and more recently by the Manitoba Government in 2011, from what has come to be known as the Brundtland Report.

Education for Sustainable Living (ESL) is complex as it raises questions about equity, environmental stewardship, respect for all species, Indigenous rights and engaging in democracy across borders and generations. Although a vast amount of literature on ESL exists, the complexities of the issues that encompass sustainability are not well understood. Despite this reality, there is a sense of urgency that sustainability becomes the central concern for the educational vision of the school through which all other issues are understood (Babiuk, Falkenberg, Deer, Giesbrecht, & Singh, 2010, p. 221). UNESCO (2002) describes such a transformation to be “essentially a process of learning” (p. 7) rather than a destination. Thus schools have a pivotal role to play in this transformation.

Goals of the Study

Educating for sustainable living requires schools to build on their current strengths for transformational change and to take a collective responsibility for monitoring and evaluating ESL initiatives. There were three goals I wished to achieve in this research. The first goal was to begin an inquiry with school staff and students as to what transformations should occur at the school level. The second was to foster within the school a meaningful participatory dialogue surrounding ESL that might not have occurred otherwise. The third was to examine existing initiatives such as the Equity Conference hosted at our school. I wanted to profile this event for
contributions to Education for Sustainability (EfS) and also assess its effectiveness in transforming the values of students involved in sustainability learning opportunities.

**Purpose and Rationale of the Study**

The purpose of this study was to help engage our school community in purposeful dialogue about ESL and to reflect on the sustainable processes within our school, hopefully leading to transformational and holistic social change. By purposeful dialogue I refer to discussions during the focus group guided by existing frameworks and literature (Eco-Globe Schools, 2015; ESD Leadership Council, 2013; Kozak & Elliot, 2014). In addition, this sort of dialogue has the intent of seeking recommendations for better practice in sustainable living pedagogy. My rationale was that this research would help our school assess the impacts of our current innovations in order to inform future actions for sustainability, addressing the important need for evaluative studies in ESL (Davies et al., 2008; Tilbury, 2011).

**Research Questions**

This study was guided by the following research questions:

1. How are current school initiatives contributing to sustainable living?
2. What processes and learning opportunities are required to ultimately improve our whole-school approach to sustainability?

**Significance of the Thesis**

An expert review of the literature on Education for Sustainable Development (ESD) conducted for UNESCO revealed that one essential question remains to be explored in educational research: “[W]hat is the extent and depth of connection between the choice of processes in ESD initiatives and actual contributions to sustainable development?” (Tilbury,
Tilbury’s insight was the catalyst that lead to my research topic. Our school was justifiably in need of documenting and reflecting upon our existing ESL initiatives in order to verify if there is a link between processes and outcomes in ESL. This knowledge is instrumental to improving a holistic school-wide approach to sustainability (Enrenfeld, 2008). This study attempted to address the problem of a disconnect between innovations and contributions of ESL in addition to contributing to the literature in EfS (Davies et al., 2008; Tilbury, 2011). By conducting participative action research, a meaningful understanding of ESL emerged in the context of one urban Manitoban school. In addition, this study completed a first cycle of action research involving critical reflection leading to action that can be a model for continued cycles of action with staff and students. The triangulation of data collected included surveys, exit slips and reflective dialogues from a matrix interview and focus group. I compiled a list of recommendations based on the analysis of the data and backed by the literature, which can inform future sustainable processes and learning opportunities at our school. The analytical look at the processes of sustainable living within the culture of our school can now inform future practice involving pedagogy, building capacity, partnerships and governance, adding to the discourse on how to assess the impacts of ESL in schools.
Chapter 2: Literature Review

Due to the complex interconnected nature of ESL, I review here the local and global contexts of educating for sustainability. I will also present ESL curriculum and pedagogical exemplars that are relevant to education in Manitoba. Theoretical perspectives are examined here in relation to their connection to ESL, focusing on transformational learning theory, reflective practice theory and values clarification. A vital part of the cyclical nature of participatory action research is to engage in a democratic reflective process to inform future practice. This allows for a constructed meaning from both theory and practice that is rooted in one’s core values.

Concepts of Sustainable Living

The pillars of sustainability have been open to interpretations from various perspectives. There have been many other terms related to ESD that, although similar in meaning, reveal an attempt to conceive terminology that best reflect the intents and purposes of what I herein refer to as education for sustainable living (ESL). Krueger and Agyeman (2005) coined the term “actually existing sustainabilities (AESs),” which refers to existing policies and practices that could meet the needs of ESD though not intentionally linked to sustainable development (p. 411). Huckle and Sterling (1996) as well as Gayford (2003) use the term Education for Sustainability (EfS). This term appeals more to those like Suzuki (2013) who suggests that development is ultimately unsustainable, and that the environment should be seen as paramount. It should be noted that ESD is “used most often at the international level” (Hopkins & McKeown, 2002, p. 13); however the primary term used in this research is Education for Sustainable Living (ESL) or simply Sustainable Living (SL). Simply put, it is ensuring that there
is “enough, for all, forever”; enough of the essentials of life, for the inhabitants of the Earth, for the many generations to come (Waxmann, 2015, p. 246).

Traditionally, sustainability has involved three interconnected pillars. The Manitoba Government often refers to the three pillars as follows:

- **Society (Human Health and Wellbeing):** An understanding of social institutions and their role in change and development, as well as the democratic and participatory systems which give opportunity for the expression of opinion, the selection of governments, the forging of consensus and the resolution of differences.

- **Environment:** An awareness of the resources and fragility of the physical environment and the effects on it of human activity and decisions, with a commitment to factoring environmental concerns into social and economic policy development.

- **Economy:** A sensitivity to the limits and potential of economic growth and their impact on society and on the environment, with a commitment to assess personal and societal levels of consumption out of the concern for the environment and for social justice (MacDiarmid & Buckler, 2014).

The Manitoba Government varied the terminology slightly to Environment, Human Health & Well-being and Economy (MacDiarmid & Buckler, 2014). Suzuki (2013) suggests there should instead be a nesting view of ESL, where firstly we prioritize the environment, and secondary to ecological vitality is human health and wellbeing and lastly, the economy. Despite the labels we place on these pillars, there is a common understanding that these are not distinctly separate areas of sustainability; rather they are complex interconnected issues that need to be addressed holistically (see Figure 1).
UNESCO argues for a fourth pillar of culture, which was first proposed in 2003 (Selby, 2010). The city of Nanaimo adopted such a model of understanding in their view of ESD (see Figure 2). The need for this perspective in sustainability is to ensure democratic solutions by including Indigenous cultures. Selby (2010) defines this pillar further as “the study of globalization, colonization, oppression and systems of privilege” (p. 4). In the 21st century, our greatest challenge will be re-imaging ourselves as stewards of the Earth rather than consumers. We need to look no further than the first people of our land as the original keepers of the nation’s flora and fauna. Western cultures can learn a lot from the Aboriginal values and awareness of caring for our world. Saul (2014) suggests that relationships between Indigenous and non-Indigenous people of Canada will allow for “opening up a more creative and accurate way of imagining ourselves. A different narrative” (p. 15). Babiuk et al. (2010) see the relevance of traditional aboriginal perspectives in education, and make the recommendation that Manitoba teachers incorporate these perspectives throughout the curriculum (p. 221). The European philosophy and structure within schools is what Saul (2014) notes as “one of the biggest barriers
to reconciliation between Aboriginal and non-Aboriginals in Canada” (p.10), in particular at the University level. Important work still needs to be done in changing the discourse of schools to be more inclusive and engaged in Aboriginal perspectives through dialogue and consultation with members of the Indigenous community (Saul, 2014).

It is ironic that UNESCO and other government officials have made attempts to reduce such a complex topic as sustainability into a simplistic diagram, although it makes for a good starting point for future discussion. Despite the over-simplification, these types of diagrams address the real need to educate for ESL. Only a decade ago, 17 percent of 3060 Canadians surveyed could actually explain what the term sustainability means (McAllister Opinion Research, 2006). Hopefully, with increased education and discussions on the topic, more people will become aware of the meaning of sustainability and its importance for our future.

Figure 2. Four Pillars of Sustainability (City of Nanaimo, 2015) From City of Nanaimo.
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ESL Global Context

James Lovelock presents a scientific view of the planet known as Gaia Theory according to which the Earth is viewed as a complex self-regulating system in balance. Lovelock (2009) explains:

The ideas that stem from Gaia theory put us in our proper place as part of the Earth system – not the owners, managers, commissars, or people in charge. The Earth has not evolved solely for our benefit, and any changes we make to it are at our own risk. (p. 10)

The path to sustainability has been a rocky one, but networks of leaders are emerging hopeful. After a failure to reach an agreement at the 2009 UN Copenhagen climate summit (COP 15), the World People’s Conference in Cochabamba, Bolivia brought together 32,000 participants from around the world all concerned about the need for a global shift in consciousness. In *The Rights of Nature: The Case for a Universal Declaration for the Rights of Mother Earth*, several prominent thinkers of sustainable living made the case for the honouring that Nature has rights, just as human beings have human rights. This document is based on the premise that societies built from the old colonial mindset are exploitive to nature because they place humans as separate from, and above nature (Ayma et al., 2010). Ecuador was the first to adopt the Rights of Nature into their constitution in September 2008, granting ecosystems legal rights rather than enshrined solely in property laws. This came from a national referendum, after many generations being witness to the vast ecological degradation from extraction and corporate mining practices throughout the country (Ayma et al., 2010, p. 66).

A prosperous future for our children and grandchildren should not be compromised by our present actions. Capra (2007) points out that we do not need to reinvent sustainable communities from scratch, as Indigenous knowledge can teach the ancient ways of knowing
required to live in specific biomes sustainably (p. 10). Wurm and Heyward (2001) caution that half of the 6,700 languages spoken globally could disappear in the coming century. Many Indigenous languages in Canada are also at risk (Saul, 2014). Loss of language and ethnocide equates to the loss of ancient naturalistic wisdom of immeasurable worth (Davis, 2009). In discussing the need for a whole system shift in the way communities think and act, Sterling (2004) sees the paradigm in education changing from a mechanistic worldview to one rooted in an ecological view (p. 25). He goes on to say that rather than preparing students for an economic life, they should be prepared to participate in all dimensions of sustainability, which include the social, cultural, environmental and economic. Despite the large-scale changes required in education, schools are often complacent to the existing pedagogy and address ESL through more outcomes in already saturated curricula (McKernan, 2008). “At present, humanity doesn’t seem to know what to do, since appropriate responses are likely matters of knowing differently, not merely knowing more” (Davis, Sumara & Luce-Kapler, 2008, p. 8). Currently the positivistic paradigm of education features core values of selection and exclusion, competition, specialization in subject areas, socialization, standardization and accountability (Sterling, 2001, p. 470). With each crisis moment, contrasting values are emerging such as inclusion and valuing of all people, learning throughout life, cooperation and collaboration, autonomy-in-relation, integrative understanding and responsibility (Sterling, 2001, p. 470). Others have noted the importance of clarifying our values to realign with nature, returning to our basic biological needs for food, shelter, clean water and community (Eisenstein, 2011; Suzuki, 2013). Wals (2007) reminds those with a conviction for sustainability, that feeling with the heart is important to sustainable living, as the complex emerging problems of the 21st century have many dimensions and cannot be grasped with analytical frameworks of the mind (p. 181).
**ESL Curriculum**

In light of the global dialogue surrounding the changes required in ESL curriculum, Sterling (2004) describes a whole system approach to sustainability practice as follows:

Instead of (higher) education being largely confined to instruction and transmission, it becomes: much more a participative, dynamic, active learning process based more on generating knowledge and meaning in context, and on real-world/situated problem solving. (p. 64)

In order to incorporate ESL meaningfully in this way, teachers must be reflective and responsive. Curriculum should be seen as a process-inquiry, rather than prescriptive outcomes (McKernan, 2008). There has been a long history of notable scholars discussing the consequences of overloaded curriculum documents that threaten teacher autonomy and freedom (Arendt, 1961; Coulter & Wiens, 2008; McKernan, 2008; Stenhouse, 1983). When ESL is taught as cursory knowledge it runs the risk of becoming what Ursula Franklin (2006) calls “monocultures of the mind.” Redman (2013) notes that traditional education efforts have been insufficient in eliciting transformative change due to the reality that “many programs focus on fact-heavy, teacher-centered techniques while neglecting the practices that behavioral and sustainability scholars highlight as central to creating change” (p. 1). Biemer, Dixon, and Blackburn (2013) provide an excellent compliment to ecological footprints (which show our impacts on the Earth), where we can teach students to have an ecological handprint, exemplifying the environmental good we can do. They point out, if all students were to engage in such projects, “the collective environmental handprint is a worthy aspiration” (Biemer et al., 2013, p. 146). In contrast to this, if pedagogy around sustainability does not translate into sustainable actions and values of the learner, the practice of teaching ESL may in fact have a
damaging effect. According to Anne MacDiarmid of Manitoba Education, there is a difference between eco-literacy, eco-fatigue and eco-anxiety, yet good intentions of teachers can lead to a wide variety of outcomes if not cautious about the approach that is taken (2013, July). Despite where one falls on the philosophical spectrum, when we engage students in sustainable lifestyles during their school experience or help students find the farsighted solutions to poverty, hunger, Indigenous rights, increasing energy demands or environmental degradation, we help them to become “solutionaries” (Weil, 2012).

In this period of transitioning we find ourselves in, a decentralized leadership movement is challenging the current dominant Western views of consumerism and forming a new ethos. One where connections between people, wellness and a respect for nature are paramount (Eisenstein, 2011). David Suzuki reminds us “we must begin to see ourselves as part of our environment, not separate from it” (2007, p. 263).

Education for Sustainable Living is not the sole responsibility of schools as noted by United Nations Economical Commission for Europe (2005):

ESD is a lifelong process from early childhood to higher and adult education and goes beyond formal education. As values, lifestyles and attitudes are established from an early age, the role of education is of particular importance for children. Since learning takes place as we take on different roles in our lives, ESD has to be considered as a "life-wide" process. It should permeate learning programs at all levels, including vocational education, training for educators, and continuing education for professionals and decision makers. (p. 5)

Crane (2013) emphasizes the importance of bottom-up sustainability conceptualizations and actions rather than large-scale policy responses. However, the problem remains that grass-
roots innovations and student action projects in schools are not easily measured or quantified as attempts to do so “fail to capture the holistic qualities of life” (Enrenfeld, 2008, p. 100). Therefore these sustainability processes are continuously out competed by quantities of content specific outcomes such as math, science, literacy, technology and skills based instruction because there is mounting pressure to do so in the age of accountability. To compensate, the very societal problems that are often avoided in education are attempted to be solved through policies and procedures brought on through political avenues. Perhaps another guiding question worth exploring is if schools can be “intrinsically transformational” through a democratic process (Sterling, 2001, p. 469).

**Pedagogical Exemplars in ESL**

The second research question in this study addresses the issue of which processes and learning opportunities are required to improve sustainability within the school. The following four pedagogical exemplars were used as a foundation from which to draw recommendations for the school, in conjunction with the data collected from staff and students. I have reviewed exemplars that make recommendations from an educational systems approach and exemplars that include school-based recommendations. I have also reviewed exemplars for curriculum, teaching and learning.

In order to address the need for a whole-system approach, the Sustainability and Education Academy (SEdA) mapped out five domains that oversee sustainability (ESD Leadership Council, 2013). The following are the detailed descriptions of each:

- Governance: Includes strategic planning, asset management, policies and school improvement plans, financial support, monitoring and evaluation.
• Curriculum, Teaching and Learning: Students acquire and demonstrate the knowledge, skills, attitudes and life practices that contribute to a sustainable future. ESL resources are provided for staff, pedagogy develops inquiry, critical thinking, active citizenship, active learning, systems and future thinking, problem-solving in a local and global context.

• Capacity Building: System and school administrators demonstrate commitment and leadership in the implementation of ESL across the system. ESL professional development is provided for all staff. Human resources policies, practices and development plans are aligned with sustainable development principles.

• Facilities and Operations: Sustainable principles are applied to the design, construction, and renewal of division buildings and all aspects of facility management, procurement, resource use and transportation. School outdoor spaces are developed for outdoor learning.

• Partnerships: Opportunity to engage parents and the community in the practice of ESL principles and in addressing local sustainability issues through community projects and/or partnerships (School Plan Template Manitoba Education, 2014).

Incorporating all of these domains into a sustainability plan allows for a big picture view for systemic change. Capra (2007) suggests that solving problems this way should rely on decentralized leadership to address parts of the problem, but bring people together in “networks of support and conversation” (p. 13).

Learning for a Sustainable Future is a Canadian charitable organization that develops resources and training for ESL. In their latest resource, Connecting the Dots: Key Strategies that Transform Learning for Environmental Education, Citizenship and Sustainability, Kozak and
Elliott propose seven strategies for transformative learning for sustainable living (2014). The following recommendations present excellence in pedagogy for teachers wishing to “create learning experiences to engage citizens and reflecting the complexity of life” (Kozak & Elliott, 2014, p. 4): (a) Learning locally, where the community becomes the classroom and learning is grounded in experiences outside the school door, involving the natural, built and cultural environments; (b) integrated learning that crosses subject lines and skills, and allows for the development of deep understanding that includes environmental, social and economic dimensions; (c) acting on learning, acknowledging the need in learners to apply what they have learned to enhance the community and the learning experience itself; (d) real-world connection that makes learning authentic through sourcing information, communicating to audiences and working with community partners; (e) considering alternative perspectives, purposely presenting different views requiring critical thinking; (f) inquiry, where learning follows what the student needs to know and results in the “uncovering” of curriculum through the skillful facilitation by the teacher; and (g) sharing responsibility for learning: that leads to able, independent learners (Kozak & Elliott, 2014, p. 4).

A research report compiled by Babiuk et al. (2010) was presented to Manitoba Education and Canadian Council of Learning, which includes recommendations from a Manitoban context, and documents several current existing projects for sustainable living in the Province. The recommendations of interest for this study are those for school based educators. Recommendations were from four areas:

- Promoting Education for Sustainability: (a) Allow EfS to be the central educational vision for the school; (b) focus on responsibility for future generations; (c) incorporate
Aboriginal perspectives; (d) promote that sustainability requires personal and systemic change; and (e) consider the concept of a UNESCO school when implementing ESL.

- Pedagogy of Education for Sustainability: (a) Engage students in cross-grade projects; (b) allow students to conduct authentic research and present their findings; (c) restructure the school timetable to allow for cross-interdisciplinary projects and opportunities for research.

- School-University Partnerships for Teacher Development: Educators should engage in meaningful school-university partnerships for continuous professional development with a focus on ESL.

- Role in and Form of Professional Development: Shift all professional development toward education for sustainability through which all other educational issues are understood (Babiuk et al., 2010, pp. 221-224).

Goleman, Bennett and Barlow (2012) describe five pedagogical practices in order to educate to become “ecoliterate,” a term that refers to cultivating the practices required to live sustainably (pp. 10-11). These include, (a) developing empathy for all forms of life, encouraging students to expand their sense of compassion to other forms of life, by shifting from our society’s dominant mindset (which considers humans to be separate from, and superior to the rest of life on Earth); (b) embracing sustainability as a community practice, which emerges from knowing that organisms do not exist in isolation and that the quality of the web of relationships within any living community determines its collective ability to survive and thrive; (c) making the invisible visible, thus assisting students in recognizing the myriad effects of human behavior on other people and environment; (d) anticipating unintended consequences, by assuming that the ultimate goal is to improve the quality of life, so students can adopt systems thinking and
“precautionary principle” as guidelines for cultivating a way of living that defends rather than destroys the web of life; and (e) understanding how nature sustains life, and how it is imperative for students to cultivate a society that takes into account future generations and other forms of life (pp. 10-11).

These eco-literate practices take the view that learning, rather than simple and non-reflective, is instead complex, critical, and epistemic (Sterling, 2001, p. 471).

All four pedagogical exemplars touch upon the importance of educating for sustainable living. Other parallels that exist are the importance of acting on learning, inquiry learning and forming meaningful partnerships (Babiuk et al., 2010; ESD Leadership Council, 2013; Kozak & Elliott, 2014). None of these exemplars were used in their entirety in order to answer the research questions, as they were blended to best suit the emerging patterns from the data after analysis was complete.

**ESL in Manitoba**

Babiuk et al. (2010) made several key recommendations for ESL from a Manitoban context based on the responses received from educational leaders across the province. These authors laid the ground work for several key findings for sustainable living education, which included recommendations intended for government, school divisions, school-based educators as well as faculties of education. In Manitoba curriculum, education for sustainable development (ESD, as the provincial documents refer to) is one of nine *Essential Elements for All Curriculum*, which is being embedded throughout K-12 curriculum (Buckler & MacDiarmid, 2013). Manitoba has been applauded for its response to the call to action for ESL (McKeown & Nolet, 2013). Babiuk et al. (2010) conducted comprehensive research on the existing Manitoba context of ESL, reporting on several individual research projects. This highlights that many school
divisions are working on ESL initiatives and support systemic changes through new innovations. Since the Sustainable Development Act (SDA) implemented in 1997, there have been efforts in the public sector and through private partnerships to develop Manitoba sustainably (McKeown & Nolet, 2013, p. 95). Many Manitoban educational leaders attend a new program called Sustainability and Education Academy (SEdA), which is run by York University through the Faculty of Education. By virtue of this learning experience that approaches ESL through a whole-system approach, Manitoba took 24 steps in order to create ESL opportunities. This included declaring the mission and goals of the education system as fully congruent with ESD; holding SEdA programs for all senior education leaders; and requiring school divisions to create plans for reorienting education and operations to address sustainability for all schools within their geographic jurisdiction. Other notable changes were establishing a Faculty of Education ESL committee to explore embedding ESL in pre-service and in-service teacher education programs; and making ESL a budget priority that is actually expanded for in-service and exemplary programs during a time of education cutbacks (McKeown & Nolet, 2013, p. 32).

Three case studies of ESL research in Manitoba demonstrate some of the challenges and benefits that arise in shifting pedagogy towards sustainable living. The following examples of local educational research acknowledge that despite certain obstacles, reflective practitioners can allow for progress in sustainable living education.

Freedman Tetrault (2008) investigated the risk and protective factors that a group of 150 middle years science teachers identified as constraints and contributors to sustainable science education. It was concluded that “lack of time” and “lack of resources” were barriers to ESL (p. 122). Freedman Tetrault (2008) used knowledge developed from a teacher survey to develop a resource for teaching middle years science through a sustainability perspective. The study made
recommendations for a closer alignment of ESL processes to the curriculum (Freedman Tetrault, 2008, p. 155).

Maxwell (2009) took a similar approach to Freedman Tetrault, and conducted a mixed method study involving four Manitoba teachers and six classes of students by developing and implementing sustainability learning experience for Senior Years Chemistry and Current Topics in Science students. Teachers noted a high level of student engagement and attributed this to students appreciating the opportunity to discuss social justice issues (Maxwell, 2009, p. 230). Maxwell (2009) presents the basis of the systems thinking approach in this study by drawing on the works of Capra (1982), Jickling (2001) and Howard (1999). Systems thinking requires reflection in order to consider the big picture holistically, rather than attempt to understand the fragmented parts.

Jacques (2012) conducted a qualitative phenomenological case study by interviewing six educators to explore what led them to their values and beliefs for sustainability. It was discovered that these core values were gained from home or being in nature as children (p. 117). The findings also suggested that intrinsic motivation played an important role for raising awareness and incorporating experiential learning into their practice. This speaks to the importance of decentralized leadership in the sustainability movement, and forming networks of individuals who share this motivation. Jacques (2012) noted that the majority of ESL projects within schools are often organized by a small group of committed students and one or two staff members (p. 6). This is significant as there is the risk that if these individuals leave the school for whatever reason, the current ESL initiatives will be lost. The International Institute for Sustainable Development (IISD) therefore encourages the development of sustainability plans in order to keep the initiatives going if staff or students leave the school (2009). Learning for a
Sustainable Future (LSF) provides free learning strategies for environmental education, with the goals of establishing real-world connections and to inspire young engaged citizens (Kozak & Elliot, 2014).

**Gap in the Literature**

In an expert review of the processes of learning for sustainability commissioned by UNESCO, Tilbury (2011) points to a gap in the research on ESL where “ESD literature has only recently begun to feature evaluative studies that map the outcomes, outputs and impacts of ESD projects and programs” (p. 42). As a result, ESL processes and learning opportunities have not been communicated in enough detail and fail to evaluate the impacts of how goals related to ESL are achieved (Tilbury, 2011, p. 8). The two recommendations for future research are that data collection processes focus on actual experiences rather than reviews of the literature; and data collection tools be based on focused questions that will capture greater detail about learning processes and learning opportunities.

It is worth noting that none of the thirteen case studies of ESL innovations reviewed by Tilbury (2011) studied behavioural outcomes. Tilbury was correct in doing so, as behaviorism and cause and effect views of change are not inaccurate, but are simply inadequate for understanding ESL (Davis et al., 2008, p. 94). Therefore, behaviorism in ESL fails to address the shift in learning frames that come from disorienting dilemmas that Mezirow (2000) emphasizes in transformational learning. Tilbury (2011) recommends the use of democratic citizenship processes as a much more effective means for change than forced conformity (p. 54). Which raises the questions: What is paramount for schools in order to lead to excellence in sustainability? And how do we achieve these goals as a process rather than an event? To the student, education in the very moment of its occurrence is life itself. Yet there is a growing
divide that exists in the public discourse as to whether a school’s inherent need is to prepare students to serve the work force and support the economy versus expanding one’s way of knowing to become moral individuals contributing to the common good of society.

**Theoretical Context**

This research was guided by three main theoretical frameworks, intertwined in several stages of the research, from design, to data collection and interpretation of findings. One of these is reflective practice theory. John Dewey noted that it is not the experience that teaches us, but reflecting on the experience (Dewey, 1910). Due to the complexities of educating for sustainable living there should be “active persistent, and careful consideration” of our beliefs and the actions we take that support them (Dewey, 1910, p. 6). Ghaye (2000) notes that reflective practitioners engage in what he calls a reflective conversation, often called introspection that can capture the essence of one of the key processes of ESL, namely collaboration and dialogue (Tilbury, 2011). In order to evoke whole school transformation, reflection depends on connection with others through meaningful relationships and to be systemic and disciplined, and requires reflecting on social pedagogy that evokes change (Rodgers, 2002). Critical reflective practice has its roots in phenomenology and critical theory (Eby, 2000), which were both included in this study to some extent. For instance, teachers’ perceptions and experiences of educating for living sustainably were collected through a matrix interview and focus group; teachers were invited to explore their thoughts on existing school actions and directions needed for ESL. From a critical theory lens, this study seeks to improve through reflective assessment the current school practices to make them even more sustainable.

Schon (1983) argued that in order for reflective practice to create new knowledge, it requires the art of drawing from theory and practice. Schon (1983) felt this sort of reflection-in-
action (thinking while doing) was learning in a meaningful way from being part of an experience. In addition, teachers engage in another reflective practice; reflection-on-action (after-the-fact thinking) which he felt set teaching away from the positivistic paradigm into a more context-based professional artistry. In the context of ESL, Killion and Todnem (1991) initiated a third type of reflection called reflection-for-action, which predicts the impacts of specific interventions on learning (York-Barr, 2006, p. 87). This sort of predictive practice, often used in participatory action research, is important for future thinking as well as sustainability school plans.

Various models show how reflection can be used in experiential learning (Gibbs, 1988; Kolb 1984). According to Quinn (1988, 2000) these models can be summarized through three processes: retrospection (thinking-back), self-evaluation, and reorientation (Finlay, 2002, pp. 7-8). Reorientation is closely linked to ESL when considering curriculum, teaching and learning as it allows the teacher practitioner to guide future practice based on new knowledge acquired through the enquiry.

Another theoretical lens used in this research is Values Clarification. In recent years, scholars and educators have focused on values clarification in order to engage in a deeper form of reflection that can address the broader social justice issues (Fook & Gardner, 2006; Korthagen, Kim & Greene, 2013). Quinn (2000) highlights that self-change is the most effective process for improving professional practice. Values clarification focuses on people’s strengths when seeking to improve a school’s sustainability practices, where individual change from core reflection leads to the collective cultural shift within the school. I have incorporated this reflective process throughout this study through the open-ended questions in teacher and student surveys, and the student reflection exit slips, as well as in the focus group and matrix interviews.
Korthagen (2013) discusses how our core values inspire us as teachers and gives us meaning. Our core values for sustainable living when shared with others can become a springboard for a school mission, which includes identity, motives and core qualities. Reflection surrounding what inspires us and what gives us meaning can bring us more focus on present practice and lead to personal growth within our own teaching practice and sustainable school practices as a whole (Korthagen, 2013).

The third theory I used here is Transformational Learning Theory. Jack Mezirow, like Korthagen (2013) understood that in the context of sustainability, personal transformation is key in allowing individuals to be autonomous agents of change. “In modern contemporary societies we must learn to make out our own interpretations rather than act on the purposes, beliefs, judgments, and feelings of others” (Mezirow, 1997, p. 5). Mezirow explains that transformation begins with a “disorienting dilemma” which leads to “critical self-reflection, which results in a reformulation of meaning perspective to allow a more inclusive, discriminating, and integrative understanding of one’s experience” (Mezirow, 1990, p. xvi). Mezirow (1978) initiated a whole body of knowledge surrounding how transformative learning can lead to changes in one’s frame of reference. According to this author, a frame of reference includes “cognitive, conative, and emotional components as well as the dimensions of habits of mind and points of view (Mezirow, 1997, p. 6). Mezirow (1997) explains that habits of mind are more permanent than points of view, due to the false assumption that one’s feelings and beliefs are superior to another. Frames of reference or “meaning perspectives” that form our worldview are initiated at a young age through our cultural upbringing and influences of primary caregivers (Mezirow, 1990, p. 2). These perspectives are the assumptions an individual makes about the world around them, and this informs their perspectives (Mezirow, 2000, p. 16). A habit of mind is an ethnocentrism, and
can only be challenged when we transform our entire frame of reference (Mezirow, 1997). This can be done through critical reflection of our points of view, beliefs and interpretations, and can lead to significant transformation (pp. 6-7). Mezirow (2000) provides a summary of the ten processes of transformative learning theory:

1. A disorienting dilemma;
2. Self-examination with feelings of fear, anger, guilt, or shame;
3. A critical assessment of assumptions;
4. Recognition that one’s discontent and the process of transformation are shared;
5. Exploration of options for new roles, relationships, and actions;
6. Planning a course of action;
7. Acquiring knowledge and skills for implementing one’s plans;
8. Provisional trying of new roles;
9. Building competence and self-confidence in new roles and relationships;
10. A reintegration into one’s life on the basis of conditions dictated by one’s new perspective (p. 22).

Lastly, there is the role of the facilitator in modeling this sort of critical reflection. Mezirow explains that rather than an authoritative role there is a shift towards becoming a “co-learner by progressively transferring her leadership to the group as it becomes more self-directed” (1997, p. 11). This is important in ESL, as teachers must be reminded that we must always teach for sustainability rather than to preach about sustainability.
Chapter 3: Methodology

Participatory action research was chosen as a way to bring together theory, and research in supporting teachers and students to examine their own perceptions and experiences of ESL, and to recommend through reflective assessment future innovations for sustainable transformations. Sustainability is an overarching theme in curriculum today; yet often a lack of time is cited as a barrier for educators to meet these goals (Freedman Tetrault, 2008). Participatory Action Research (PAR) allows for school communities to work together towards changing the ethos of the school culture to address complex issues that ethically cannot be ignored. According to Stringer (2008), “action research provides a process for developing a rich, engaging curriculum relevant to the lives and purposes of students, engaging their interests and abilities, and serving the broad human needs of community, society and the planet” (p. 160).

Both of my research questions were best answered through a PAR methodology, as this allows for a tapestry of many individuals reflecting on existing practice and moving towards sustainable processes and learning opportunities for ESL.

Research Context

A key characteristic of action research is that it incorporates a “look-think-act routine,” which is similar to traditional research “look = gathering data; think = analyzing data; act = reporting results” (Stringer, 2008, p. 37). Figure 3 shows a typical action research cycle that according to Stringer incorporates all of the following elements: “design, data gathering, data analysis, reporting and action” (2008, p. 30). The guiding questions are useful to understand the process that would occur within a school. Beginning the cycle in Figure 3 is the question, “Where are we now?” In the phenomenological sense, I have chosen the two surveys as a way to
answer this question and assess the existing perceptions and values of the students and teachers. Core values within the data can then be a springboard to align sentiments around sustainability with future thoughts and actions (Korthagen, Kim & Greene, 2013). Within this research cycle, there is also a period of collaborative reflection in the focus group and matrix interview. The act of reflecting on experience becomes the means for new points of view that can transform habits of the mind and ultimately lead to new implementations for sustainable living (Mezirow, 1997). The function of this methodology is to connect the research literature and effective practices to the particular context of a school (Stringer, 2008).

![Action Research Cycle](image.png)

**Figure 3.** Action Research Cycle (Educational Leadership Project, 2015). From Educational Leadership Project. Copyright 2015 by Copyright Holder. Reprinted with permission.

PAR provided the perfect avenue in which to address my research questions as I was able to invite into this study stakeholders of the school and work within the parameters of the existing school culture to initiate change. Global challenges require cooperation and collective learning
at many levels; through family interactions, school programming and academic research.

Although actions for sustainability may take on many forms, PAR has been an important part of the grassroots sustainability movement globally at the academic level in the past decade. McNiff and Whitehead (2011) note that action research is the most effective methodology for investigating curriculum in order to improve social situations and in offering justification for further action (p. 14). This has greatly helped to inform the teaching profession and to identify characteristics of excellence in teaching for sustainable living. Purposeful dialogues that arose during the Equity Conference as well as between educators of the focus group are examples of disorienting dilemmas where there is room for individual self-examination and critical assessment of assumptions (Mezirow, 2000). This methodology also gave staff and students the opportunity to participate in the discourse of educational research for sustainable changes within school communities.

**Research Site**

The school division in which this school is located is very supportive of ESL initiatives. There have been several divisional days that encompass the pillars of ESL and there has been planning time provided to teachers for ESL initiatives through divisional days and at meetings. This allowed the meaningful time for dialogue on outdoor education, inclusion, social justice and Aboriginal perspectives, to name a few topics. In addition, the school administration is also very supportive of ESL, and helped to support and find additional funds for our new community garden and outdoor classroom. They have also provided financial support for the new breakfast program available to all students, benefitting those most in need, and look to elaborate on the existing composting initiatives.
The high school involved in this participatory action research is located in Winnipeg and has 52 teachers and approximately 820 enrolled students in grades 9-12. Although there is no data collected based on family income levels, it is apparent from relationships formed with students and discussions amongst staff, that there are students at the school living across the spectrum of socio-economic classes. The school is located in a new suburb of the city and it seems most students are from middle class families. Available school demographic data indicates that there are currently 28 students who have self-declared as Aboriginal and 13 children in care of Child and Family Services (Seven Oaks School Division, 2015). Divisionally, there are approximately 20% of the school population self-declared as Aboriginal (O’Leary, 2015).

In 2008, the school in this study relocated to a new green building that is Leadership in Energy and Environmental Design (LEED) silver certified. LEED buildings can qualify for silver, gold or platinum certification, upon the completion of a checklist based on school eco-design criteria, and can increase to higher ratings based on points scored (Graduate Educational Information Service, 2013). The Government of Manitoba has now mandated that all new schools built in the province be LEED silver certified, but they strive for gold standard when possible (Buckler & MacDiarmid, 2011). The LEED certification is an example of an SL policy in place. The limitation is that it does not actually gauge the existing culture of the school.

Student groups centered on ESL, show how the school is involved in processes and learning opportunities for SL. Since 2009, the school has offered an extra curricular Social Justice Club (SJC) run by several staff members and a flexible student membership that varies throughout the year. The club began as a way for staff to intentionally engage students in Education for Sustainability outside of their classes of instruction. Some staff expressed that the
current high school curriculums are too outcome laden and do not offer the freedom for substantive student action projects, and hence the SJC addressed this need. The club’s mission statement is to encompass the principles of ESL while making a difference, one project at a time. At its maximum, there were approximately 80 students engaged in the school SJC through various student action projects throughout the year. Students from the Social Justice Club are involved in choosing the initiatives and student action projects. Some projects are yearly events such as the 30 Hour Famine, Food Drives for Winnipeg Harvest, and Habitat for Humanity. Students may also choose to be fulltime members or to participate in select initiatives. In the same way, staff may choose to volunteer their time for portions of the year, or certain projects as they arise. All participation in the club is voluntary, and no credit is given to students for participation. Each year club membership grows as more students and staff realize the importance of sustainable living within our school and broader community.

Since 2012, there has been the formation of several other focus groups in collaboration with the SJC. These include the Manitoba Association of Rights and Liberties (M.A.R.L.Y.) leadership group, environmental club, gay-straight alliance, animal rights group and anti-bullying group. It is also promising to see new Manitoba curriculums such as the Grade 12 Social Studies Course, Global Issues: Citizenship and Sustainability being offered, which is inquiry based and allows for students to initiate change through a Take Action Project.

**Personal Context**

I have been part of the Social Justice Club committee since its initiation, comprised of students, teachers, and educational assistants, with the support of administration. In this role, I have set goals around new student initiated projects, and sought out opportunities to attend a wide range of conferences related to ESL.
In 2012, I attended the Green Schools National Conference in Denver, Colorado. While at the conference I had an opportunity to attend a session with Manitoba Deputy Minister of Education, Gerald Farthing (2012, Feb), who spoke of his vision for sustainability in Manitoban schools. It was the first time I had heard about the framework designed by the province known as Eco-Globe Schools, which includes three levels of sustainability; awareness, action and transformational. This was a great opportunity for our school to document our Social Justice Club initiatives. I feel like one of the most powerful aspects of profiling ESL efforts and measuring positive changes is that the movement becomes intentional and resilient. Intentional in that ESL becomes a very real part of the school culture, and that the entire staff and student body is aware of what initiatives and efforts are ongoing. The resilience that documentation provides is that if one or two leaders of the movement leave the school, it does not affect the ability for the sustainability to carry on.

Since returning from the Green Schools conference, I have nominated our school as an Eco-Globe school at the Awareness Level, and more recently, in May 2013, we nominated our school at the Action Level. The submission chart (Appendix A) highlights the various action projects and initiatives that have come to be part of our school culture.

However, to suggest that documents and policies alone are enough to create meaningful change is misinformed, since long lasting change comes when all stakeholders are involved in a grassroots approach in changing curriculum (Crane, 2013). Democratic participatory procedures that seek to involve stakeholders in meaningful change have been discussed at length by Peter Oliva (2001), “[t]o varying degrees, the democratic process is accepted more and more in school systems” (p. 58). In this sense, I concur with Crane (2013) in that encouraging democracy in
ESL curriculum is a much more successful approach than implementing policies and procedures from a top-down systems approach, as it engages the people who matter most in creating change.

I believe that schools should be centered around equity and work towards educating children holistically. Too often, in the pursuit of academics as knowledge retention, the child’s wellbeing, forming real-world connections, acting on learning and inquiry are forgotten or greatly diminished. Lorraine Bellon Cella (2013) wrote an article in Education Week that echoed my exact thoughts on what is at stake. In her own words, “my greatest worry is that teachers will fade into the deadly, robotic, fit-the-rubric nonentities and receive high scores, but offer nothing of substance to students, nothing to carry with them for a lifetime” (Cella, 2013, p. 2). As school systems place a priority on academic measures, teachers give in to the pressures of teaching in such circumstances, rather than as Korthagen points out, the holistic development of the whole child (Korthagen, 2013, p. 190). Like Cella, my dream is to have students carry with them throughout their lives something much more meaningful than a transcript of high test scores. I would like to see all students leave school with a sense of their place in the world, a conviction for equity and a joy of learning.

Research Participants

In order to have a democratic process, the initial goal of my research was to include as many participants with different perspectives as possible, including students, staff and administration into the various components of this study. In order to have participants with the most intimate knowledge of the school, I wished to include only current staff and students, excluding past students, parents or community members. The relevance of including current staff and students was important to my first research question, which looked at contributions of current school initiatives. Through a phenomenological experience, current staff and students
were asked to apply their perceptions and reflect upon the second research question, which asked to recommend future processes and learning opportunities to improve sustainable living.

The community and families of the students were considered as potential participants when designing this study, as they would also greatly contribute to the school culture. However, since they are not on campus, they would have difficulty answering the first research question in this study. In addition, as a first cycle in this action research, it was important to collect data first from those with the most intimate knowledge of the school in order to establish a baseline (Swayze, Buckler, & MacDiarmid, 2014). In future cycles of this action research, which may happen beyond this study, the obvious next steps would be to include other stakeholders such as parents and surrounding community.

I had originally wanted the school principal, as the leader of the school, to participate and be a part of the matrix interview and focus group. Although my original intent was to include administration in this study, I had removed the principal’s invitation into all components of this PAR in order to address concerns over the issues of power that may be present between administrator and teachers. This may have altered the results of this research, as the administration has unique perspectives and experiences related to the systemic functioning of the school. The principal will be presented with the recommendations that result from this study based on the findings in the data.

I had envisioned having students from the Social Justice Club take a more active participatory role in the research, by having them invite students from various classes into the study. Babiuk et al. (2010) highlighted the importance of allowing “students to do relevant and authentic research and present their findings” (p. 223). Others have validated the benefits of students conducting research as it allows for the creation of new knowledge rather than simply
learning about existing knowledge (Rallis & Rossman, 2012; McNiff & Whitehead, 2011; Stringer, 2008). However, to comply to all ethical considerations, student participation was limited; they participated by answering the student survey and exit slips, mostly online, unless technological barriers were present, and I used a third party recruiter for recruiting students.

Participants were from three sub-groups: (a) Students who had participated in the Equity Conference (N=172) and who were invited to participate in this research. From these, N=30 students completed the Student Sustainable Living Values Survey, and N=24 students completed the Equity Conference Student Reflection Exit Slips; (b) teachers participating in the online Teacher Sustainability Survey (N=10); and (c) teachers dedicated to ESL initiatives participating in a matrix interview and focus group session (N=8).

**Students.** Student participants were recruited by a research assistant, to conform to ethical requirements. Students who agreed to participate submitted their assent forms and their parents or guardians’ consent forms to the same research assistant, guaranteeing their anonymity. Students were invited to participate in an online Student Sustainable Living Values Survey and to complete a Student Reflection Exit Slip after attending the Equity Conference. The research assistant emailed student participants the online surveys and exit slips. Of the over 350 students who attended the Equity conference, a total of 172 students from volunteered classes were invited to participate in the study. Students could choose to participate in the online Student Sustainable Living Values Survey prior to the Equity Conference, and/or to complete an exit slip following the conference.

Student participants were from seven different classes from a variety of subject areas. Most surveys and exit slips were completed online, however some students completed these in print due to technological barriers. The print surveys and exit slips were handed out by the
research assistant and collected during the same class period. The exit slips were all done in print, as all participants of the equity conference (N=172) completed one, although only exit slips from students who had provided proper assent and consent to participate in this phase of the data collection were included in the data.

Thirty (N=30) students from grades 9 through 12 completed the Student Sustainable Living Values Survey from March to April 2015. From these, n=15 students were in grade 9, n=8 students in grade 10, n=3 students in grade 11, and n=4 students in grade 12. Two students completed the survey in writing.

Twenty four (N=24) students from grades 9 through 12 completed the Student Reflection Exit Slip, all of them in writing. From these, there were n=14 grade 9 students, n=6 grade 10 students, n=3 grade 12 students, and n=1 grade 11 student.

**Teacher participants.** All teaching staff (N=52) at the school received a letter of informed consent inviting them to participate in a Teacher Sustainability Survey. The invitation was sent by the school secretary by email and a print copy of the consent form was delivered into the teachers’ school mailboxes. With the principal’s permission, I attended a staff meeting to further explain the study and answer questions related to the research. Only teachers who had returned their written consent in a sealed envelop to my school mailbox were included in this research. The survey link was emailed to them by the research assistant once the proper consent was received. N=10 teachers completed the online survey. Teachers were from a variety of teaching disciplines and years of teaching experience: n=3 teachers from the humanities, n=5 teachers from math and science, and n=2 teachers from trades and technology.

In addition, teachers participating in the Equity Conference could volunteer their class of students for the purposes of recruitment, which they did by written consent through the same
invitation previously sent to them by the school secretary. \( N=8 \) teachers volunteered their classes.

Teachers also had the opportunity to self-nominate to participate in the focus group and interview session, by indicating an interest on their consent forms. The intention was to include those who have contributed to ESL at our school. Eight teachers indicated they would like to participate in the matrix interview and focus group session, all of them fulfilling criterion for inclusion; thus all were selected to participate. After the matrix interviews, the participants joined a focus group to respond to questions related to the results of the teacher and student surveys. Teachers participating in the focus group were also from a variety of teaching disciplines: \( n=2 \) teachers from the humanities, \( n=2 \) teachers from math and science, \( n=3 \) teachers from trades and technology, and \( n=1 \) teacher from the performing arts. There were six female participants and two male participants; years of teaching experience varied on the spectrum from teacher candidate all the way to seasoned teacher, having more than a decade of teaching experience.

**Principal researcher.** My role in this participatory action research was three-fold. I was the principal investigator, and in this role I coordinated and carried out the three phases of this research with help from my research assistant, following the research agreement in place with the Nursing and Education Research Ethics Board. My completion of the tri-council ethics course was completed prior to this research (certificate in Appendix B), as well as gaining ENREB approval after applying to the board (Appendix C). As researcher, I analyzed the data collected in this study, aiming at making recommendations based on the results of this analysis and a review of relevant literature. I am also responsible for the dissemination of the results of
this research to all institutions and participants who have indicated they would like a copy of the final report.

Another role I played in this research was that of a teacher in the school where data collection took place. In this role, I have worked with the teacher participants and not only have known them as colleagues, but on a personal level as well. In addition, I have probably taught some of the student participants or I have been their mentor through the Social Justice Club. The possible ethical concerns associated with the power-over relationship I have with these students were addressed by using a research assistant, so that I did not know the identity of the student participants throughout the duration of this study.

Finally, I was also a participant in the sense that I am personally interested in ESL at this school and shared my personal views and assumptions regarding ELS initiatives in our school. Whereas I have strived to remain intentionally objective when analyzing the data, attempting to avoid my own biases influencing the recommendations I provided as the final product in this study, I recognize the influence of my triple role in this study at several levels. As researcher-teacher-participant, I strived to avoid any coercion that potential participants may have felt regarding their participation in this study. I did so by disclosing that they were under no obligation to participate, and by having a third party approach students and teachers on my behalf, thus minimizing power-over issues. During the focus group and matrix interview session, I sought to coordinate participants’ interactions, without imposing my own views and opinions on the matter, even though I am committed to ELS in our school and I am recognized as such by my colleagues, including those who participated in this study.
Research Design

An innovative design used in this study involved three phases of research— awareness, action, and transformation— with reflection occurring along each phase of the research. The names for the phases within this innovation are modeled after the three levels of sustainability offered through the Government of Manitoba Eco-Globe framework. I connected these levels to the steps involved in the cyclical nature of action research beginning with reconnaissance and reconceptualization (Mckernan, 1996, p.17). The first phase was an exploratory reconnaissance to reflect on teacher and student values and beliefs related to ESL, thereby gaining awareness of what is already being done at our school. This helps to reinforce a cycle of hope rather than the cycle of cynicism that leads to apathy (Jones & Johnson, 2007). The awareness phase of this research included data collection focused on raising the awareness about the school culture relating to ESL.

Phase 2 involved reflective practices and dialogues amongst teaching staff as part of planning for action (Educational Leadership Project, 2014). The last phase of this action research, the transformative phase, was to inform future practice based on the findings from the previous two phases of the research. Table 1 shows each step in these innovations, which were essentially a first cycle of many in action research for sustainability. The recommendations I provided as a result of my interpretation of the findings of this study and a review of the literature on effective ESL initiatives may be useful in developing a school sustainability plan. This, however, comes at a key time as the province of Manitoba is encouraging every school and post-secondary institution to have a sustainability plan in place by 2015 (ESD Leadership Council, 2013). Although writing the ESL plan is not a part of this research, hopefully the recommendations that come from this participatory action research can be useful in informing
future school plans in a democratic way. It is also unclear at this point if our school will be able
to self-nominate as an Eco-Globe school at the transformational level.

Table 1

*Three Phases of Innovations in the Research Design and Timeline*

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<th>Phase</th>
<th>Innovation</th>
<th>Timeline</th>
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| 1. Awareness (Reconnaissance) | a) Created space for critical reflection of ESL beliefs and practices through student and teachers surveys (which include values, attitudes, processes and learning opportunities) in order to profile ESL at our school.  
b) Analyzed how school initiatives such as the Equity Conference, are contributing to sustainable living through Student Reflection Exit Slips. | January-April 2015 |
| 2. Action                      | Engaged in dialogue and reflection with teachers using a Matrix Interview and Focus Group in order to assess strengths and core values related to ESL prior to developing recommendations for future practice. | June 2015       |
| 3. Transformation (Only the beginning) | Developed recommendations for future processes and learning opportunities to ultimately improve our whole-school approach to sustainability as we work towards becoming an Eco-Globe School at the Transformational level. | July-October 2015 |
However, it should be noted that this participatory action research will help us to reach this goal by having a more in-depth understanding of ESL at our school. The ultimate goal is for our school to become a sustainable school, in a continuous process of learning. Table 1 presents the three phases of the research and the innovative aspect of this design, as well as a timeline for when each phase was conducted.

**Literature map.** The literature map in Figure 4 displays the highlights from the literature review as well as how theory and practice are connected throughout my research design. The first main area of reading was focused on the gap in the literature and the importance of ESL. The second area was my chosen methodology in the context of ESL. This assisted in locating existing data collection tools such as the Teacher Sustainability Survey and the Student Sustainable Living Values Survey (Yam, Lam & Wong, 2010). Lastly, represented in the map is the theoretical context that situates the underlying epistemology of study into reflective practice theory, values clarification and transformative learning theory.
Why is there a need for Participatory Action Research for Sustainable Living in Schools?

**Gap in the Literature**
- ESD has only recently begun to feature evaluative studies that map impacts of ESD initiatives (Davies et al., 2008; Tilbury, 2011)
- Eco-literacy education essential (Goleman, Bennett, & Barlow, 2012)
- Curriculum as process-inquiry (McKernan, 2008)
- Eco-fatigue in students if approach is not carefully planned (MacDiarmid, 2013)

**Importance of ESD**

**Methodology: Participatory Action Research**
(McNiff & Whitehead, 2011)
- Grass-roots sustainability (Crane, 2013)
- PAR is a holistic approach, student action project not easily measured (Enrenfeld, 2008; Stringer, 2008)

**Theoretical Framework:**
1. Reflective Practice Theory
   - Theory and Practice (Schon, 1983)
   - Reflective Conversation (Ghaye, 2000)
   - Collaboration and Dialogue (Tilbury, 2011)
   - Systemic and Disciplined reflection (Rodgers, 2002)
   - Reflection for Action (Killion & Todnem, 1991)
   - Predict impacts of intentions (York-Barr, 2006)
   - Self-evaluation (Finlay, 2002; Quinn, 2000)

2. Values Clarification
   (Bradbury, 2008; Fook & Gardner, 2006; Korthagen, Kim & Greene, 2013; Quinn, 2000)

3. Transformational Learning Theory
   (Jack Mezirow, 1997; Redman, 2013; Sterling, 2004)

**Awareness (Look)**
Reflective Tools Used:
1. Student Sustainable Living Values Survey
2. Teacher Sustainability Survey
(Yang, Lam & Wong, 2010)

**Action (Think)**
Tools used:
1. Student Reflection Exit Slips after Equity Conference
2. Teacher Matrix Interview
3. Teacher Focus Group
   - Reflective dialogue (Finlay, 2002)
   - Self-evaluation and re-orientation (Quinn, 1988, 2000)

**Transformation (Act)**
- Recommendations for future processes and learning opportunities to improve education for sustainable living

Figure 4. Literature Map of Education for Sustainable Living.
Data Collection

Multiple sources of data were collected through five different research instruments, ensuring data triangulation could take place in order to gain a more reliable understanding of how to best address the research problem.

The different data collection instruments used were selected to help answer the research questions. Table 2 presents the explicit connection between data gathered and research questions.

Table 2

A Summary of Data Sources Used in Answering Research Questions

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How are current school initiatives contributing to sustainable living?</td>
<td>1. Open ended questions from Teacher Sustainability Survey and Student Sustainability Living Values Survey</td>
</tr>
<tr>
<td></td>
<td>2. Equity Conference Student Reflection Exit Slips</td>
</tr>
<tr>
<td>2. What processes and learning opportunities are required to ultimately improve our whole-school approach to sustainability?</td>
<td>1. Teacher Sustainability Survey</td>
</tr>
<tr>
<td></td>
<td>2. Student Sustainable Living Values Survey</td>
</tr>
<tr>
<td></td>
<td>3. Matrix Interview and Focus Group</td>
</tr>
</tbody>
</table>

The different data collection methods used for gathering information can also be classified following Wolcott’s (1992) three types of strategies: experiencing, enquiring and
examining (as described by Mills, 2007). Table 3 provides a summary of the data collection techniques that were used to gather a more complete picture of the ESL processes and student learning opportunities in existence at our school. Throughout the data collection, the goal was to share the vision for the next steps to continue on the path of sustainability.

Table 3

*Chronological Order of Events*

<table>
<thead>
<tr>
<th>Phase</th>
<th>Events</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Awareness</td>
<td>1. Planning Equity Conference</td>
<td>Experiencing</td>
</tr>
<tr>
<td></td>
<td>2. Teacher Sustainability Survey</td>
<td>Enquiring</td>
</tr>
<tr>
<td></td>
<td>3. Student Sustainable Living Values Survey</td>
<td>Examining</td>
</tr>
<tr>
<td></td>
<td>4. Analysis of past and existing ESL initiatives through open-ended questions on surveys</td>
<td>Enquiring</td>
</tr>
<tr>
<td>2 Action</td>
<td>5. Equity Conference</td>
<td>Experiencing</td>
</tr>
<tr>
<td></td>
<td>6. Student Reflection Exit Slip</td>
<td>Enquiring</td>
</tr>
<tr>
<td></td>
<td>7. Matrix Interview and Focus Group</td>
<td>Enquiring</td>
</tr>
</tbody>
</table>

The two surveys used in this study were adapted from the instruments developed by Yang, Lam and Wong (2010). In their research, they developed two tools for identifying secondary teachers’ and students’ beliefs about ESL in China. The Teacher Sustainability Survey (Appendix D) is a 4-point Likert scale survey used to assess teacher attitudes in regards to ESL and to what extent they embed sustainable living curriculum into their practice. The survey took approximately 10 minutes to complete, and it could be accessed online through an URL link sent by email to participants.
The Student Sustainable Living Values Survey (Appendix E) was aimed at understanding to what extent students at the school are eco-literate and if they experience ESL in their school activities. The total amount of time required from students to complete this online survey was approximately 10 minutes. Students could access the survey at home through their email account and complete the survey online. For students with technology limitations, a paper copy was provided in class by the research assistant.

Other data collection instruments used in this study were a matrix interview and focus group, effective tools to gain insights into how to best teach for sustainability (Finlay, 2002, p. 17). After survey results were compiled, teachers who had self-nominated to participate in the matrix interview and focus group session were selected and met for a face-to-face semi-structured matrix interview. This democratic interviewing technique ensured that all members had a chance to be the interviewer and the interviewee. Participants were assigned a number and instructed to take turns asking the various pre-selected questions and recording information in writing from other group members. Questions were open-ended enough to allow new ideas to be brought into the dialogue, leading to the semi-structure nature of this interview. Each question was allotted a time of 3 to 4 minutes. It is through this process that an enquiry of eight questions were used in an interview matrix technique (available in Appendix F). All participants of this session were emailed a copy of the interview questions at least one week prior to the date of the meeting in order for them to adequately reflect on the questions. The interview and matrix interview sessions combined took three hours. During the interview and focus group, I was an active participant, again reinforcing the democratic nature of this research tool.

The matrix interview was followed by a focus group discussion based on the results of the teacher and student surveys, where participants could share their perceptions, opinions,
beliefs and recommendations. This part of the session was thirty-seven minutes long. Focus group participants were presented with the results of the two surveys a week before this meeting in graphic and bulleted format after these were rendered anonymous.

Debriefing was done by a round table discussion based on the following three guiding questions:

1. What information in the survey results/findings surprised you? What resonated with you? What concerns you most?
2. What staff attitudes and student values emerged that were not expected?
3. What processes and learning opportunities are required to ultimately improve our whole-school approach to sustainability?

Another data collection instrument used was the Student Reflection Exit Slips (Appendix G) completed by students who participated in the Equity Conference and who agreed to participate in this part of the research. The Equity Conference (Appendix H) is a sustainability school initiative chosen to be profiled in this study for its contributions to ESL. The Equity Conference was hosted on April 28, 2015 at the school and was started as a way for students to learn more about Aboriginal perspectives and discuss systemic racism that Indigenous people still face today. Over 350 students from grades 9 to 12 and from more than 13 different classes attended this conference. The day began with a welcome from elder Mary Courchene and an address from Kevin Lamoureux, the keynote speaker. The conference also included breakout sessions, which were designed to be small enough so that students would feel comfortable participating in the discussions, and guests could share their stories in an intimate setting. Indigenous performers, The Asham Stompers and the WK Indigenous group performed. Breakout sessions with several community leaders were eye opening. Inspirational individuals
such as Michael Champagne, Jenna Wirch, Bernadette Smith, Nancy Macdonald, Diana Bernardo, Lindey Courchene and the Silent No More students from Maples Collegiate led breakout sessions.

In order to have a better understanding of the impacts of the Equity Conference related to sustainable living, students from teacher-volunteered classes were invited to complete a Student Reflection Exit Slip after participating in the conference. The exit slips asked students to reflect on the following six questions:

1. What did you take away from this experience?
2. How has it changed the way you view this issue (equity)?
3. What are your hopes for the future in regards to this cause?
4. Is there anything that you can do to further this cause? Explain.
5. Has learning about this topic changed your values related to sustainability and equity? If so, in what ways have your opinions changed?
6. Are conferences such as this one useful to students at our school? Why or why not?

The estimated time needed to complete the Student Reflection Exit Slip was 10 minutes. The results were rendered anonymous by removing all identifiers such as grade or name, if included.

Limitations of the Study

There are several limitations of this study that should be noted. Due to the fact that the student participants in this research are those who chose to participate, they may already be interested in sustainability and might have a certain bias towards ESL. Students who care about sustainable living may be more likely to rank higher in sustainability values than the student body as a whole. I made an effort to democratically include the voices of a diversity of students
through subject area courses, although the data collected does not necessarily reflect the attitudes and values of the entire student population. Similarly, teaching staff that responded to the survey may be the ones that were the most motivated by ESL. There were several sustainable living projects occurring within the school during the research period, which are not included in the data, due to the fact that this research is solely voluntary and teachers could choose not to participate. Only the Equity Conference was profiled for its contributions to ESL. In future studies, there is potential to profile a variety of ESL initiatives. It should also be noted that parents and the broader community were not included in this research, which would be a good area for future studies in order to broaden the scope of participation. This study was limited in its length to ten months, and, accordingly, should be considered as a snapshot of comprehensive understanding of ESL in practice rather than a longitudinal enquiry. Since this study focuses on the specific meaning in context of one school in Manitoba, it is limited in its generalizability. This research has the potential to be transferable to other educators interested in building their school ESL capacity through grassroots changes.

A challenge that was unanticipated in the chosen methodology of PAR were the changes made due to ethical considerations from ENREB. For example, I had originally envisioned for students, administrators and myself to participate in this participatory action research, however this was greatly limited due to ethical concerns. Most of the research correspondence with students and staff shifted towards a more impersonal and unauthentic correspondence through the school secretary and research assistant via online technology in order to reduce risk of coercion and issues related to power-over relationships. This was likely a contributing factor for participation rates being lower than expected, thus also limiting the study results in significant ways.
Participation rates for the student and teacher surveys were lower than the established participation rates averages as per literature. Nulty (2008) compared data from the results of eight studies on overall participation rates of adults in online versus paper surveys, and found the average participation rates for online surveys was 33% versus a 56% response rate for paper-based surveys. Paper-based surveys were not an option in this study due to ethical considerations related to participants' anonymity. To some extent, I attribute the lower participation rates to research design limitations involved in the process of obtaining consent from potential participants. For example, students had to complete and return assent forms and get their parents or guardians to complete and return consent forms; I speculate that in many instances, students just forgot about giving the forms to their parents or bringing them back to school. In addition, participants were invited into this study by third party recruitment, and in the case of teachers, this was done by email. There were no reminder emails sent out; and the fact that potential participants were required to access the surveys through a link sent to their emails, having to complete the surveys online, on their spare time, possibly increased the probability of people forgetting about the survey. These may have been contributing factors in decreasing participation rates.

The purpose of the survey is an important factor when considering the lower response rates in this study (Coates et al., 2006; Bennett & Nair, 2010). In the case of both surveys, the purpose was to allow students and teachers the opportunity to share their opinions on current and future school initiatives related to sustainability. Furthermore, the surveys served as a way to assess the existing school sustainability culture, establishing a baseline, which is an important step in order to guide future recommendations for teaching and learning within the school (Swayze, Buckler, & MacDiarmid, 2014). For the stated purposes, responses from any and all
students and teachers would be equally significant, but involved individuals would be the ones who could contribute the most, especially given their experience and interest in the topic. Moreover, as the purpose of this study is not to establish cause and effect relationships or to find generalizable patterns, but rather to investigate a particular case, the response rates obtained do not invalidate results, as I was not seeking saturation through data analysis.

**Data Analysis**

The goal for including multiple perspectives through data triangulation in this study was to build a sense of trustworthiness that the data depicts a democratic understanding of the research questions. A mixed methods approach was used to interpret the various forms of raw data. Table 4 depicts a summary of how all the data collected was summarized to reach interpretations for meaningful understanding. For example, the survey questions that used a 4-point Likert scale were analyzed using descriptive statistics, seeking trends such as the frequency and mode (N). This process showed the mode of each question and any consensus present in the individual trends in responses (Lincoln & Guba, 1985). Open-ended survey questions, focus group interview transcripts and student reflection exit slips were analyzed using a grounded theory approach, allowing me to generate the themes emerging from the data through a process of inductive coding (Hesse-Biber & Leavy, 2006).

Once the coding of the data was complete, I compared them to the literature. The data analysis showed the mode as well as the various categories of responses from the participants. These responses were then compared to the frameworks of pedagogical exemplars, which led to the final recommendations for the school improving its sustainability practices.
Table 4

Summary of Data Analysis Techniques Used for each Method of Data Collection

<table>
<thead>
<tr>
<th>Research Instruments</th>
<th>Data Analysis Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Teacher Sustainability Survey</td>
<td>• Descriptive statistical analysis of responses to the Likert-scale questions</td>
</tr>
<tr>
<td>• Student Sustainable Living Values Survey</td>
<td>• Inductive thematic coding of responses to the open-ended questions</td>
</tr>
<tr>
<td>• Student Reflection Exit Slips</td>
<td>• Inductive coding for emergent themes</td>
</tr>
<tr>
<td>• Matrix Interview and Focus Group</td>
<td>• Inductive coding of the Matrix Interview transcripts and the Focus Group discussions for emergent themes</td>
</tr>
</tbody>
</table>

Criteria for Ensuring Research Quality. The validity of this participatory action research is assessed using Anderson, Herr, and Nihlen’s (1994) criteria for validity, as this evaluative tool is particularly suited to the teacher practitioner studying their own school. Since I have a certain position in favour of ESL in schools, attempts were made in the methodology to remain objective through critical subjectivity. The trustworthiness of this research is critically assessed for the following validities: democratic, outcome, process, catalytic and dialogic.

Democratic validity. Perspectives in this research included those of teachers and students. All participation in this research was voluntary. To triangulate the data collected and to ensure data accuracy, teacher interviews were conducted by a democratic interviewing technique known as a matrix interview. Each participant shared their interview notes in the form
of discussion of the transcripts. For both the matrix interview and focus group, transcripts were emailed out and further verified through participant member checking (Edward-Groves, 2013, p. 23). Students’ and teachers’ views were included through student and teacher surveys. The Focus Group was asked to carry out a discussion of the data results from both of these surveys. Lastly, students had an opportunity to share their opinions regarding the Equity Conference through a Student Reflection Exit Slip. Other relevant groups omitted from this study are community members and parents, the rationale being that staff and students would have the most intimate knowledge of ESL and would help to understand the existing school culture for this first cycle of action research.

**Outcome validity.** Outcome validity considers if the outcome of the research may be used in subsequent cycles of action. In this study the outcome was to come up with recommendations for the school that would lead to transformative school-wide change. This research was successful in involving teaching staff and students in sharing their views for a more sustainable school and profiling existing contributions, in order to ground the conclusions within this data. Five central recommendations were the outcome of this research. Several examples were used from the student and teacher data as evidence of their participation in the recommended outcomes.

**Process validity.** Process validity refers to how the study was conducted, if in a competent and dependable manner. This research had the intention of forming a joint enquiry within the school community involving teaching staff and students. The goal was to engage the school in a purposeful dialogue, what Edwards-Groves (2013) refers to as “an academic inquiry community” (p. 24). The methodology included triangulation from five data sources. One suggestion to increase the process validity would have been to involve students and
administrators into the participatory dialogue during the Matrix Interview and Focus Group. As mentioned previously, this option was discarded due to ethical concerns.

**Catalytic validity.** If the results from this research were to be a catalyst for further action, there is catalytic validity. This can only be ascertained afterwards, but my research has the potential to achieve catalytic validity insofar as it changes the paradigm for future action, as now the school stakeholders can understand what is the “extent and depth of connection between the choice of processes in ESD initiatives and actual contributions to sustainable development” (Tilbury, 2011, p. 104). Furthermore, the dialogues within the focus group allowed teachers to use the data results from the two surveys as catalysts for their thoughts for further action. It is suggested in the conclusions that five central recommendations are made in order to transform the school. This advice, if acted upon, certainly validates the catalytic nature of this study.

**Dialogic validity.** Lastly, dialogic validity allows for conversations with stakeholders in regards to the research findings. Participatory dialogues was one of the goals of this research in addition to being a key innovation for collecting data and reflecting on the results. During the Matrix Interview, two rounds of interviews took place where participants were both the interviewer and the interviewee. Using a dialogic approach, the findings were reviewed and shared with peers. Teachers in the focus group reviewed the data from both surveys and drew interpretations from the data. In addition, the transcripts from both the Matrix Interview and the Focus Group were submitted to Focus Group participants for member checking.

Based on criteria for validity established by Anderson, Herr and Nihlen (1994) this research is trustworthy and is up to the professional standards that Participatory Action Research requires. Certain ethical considerations expressed by ENREB may have reduced the democratic and process validities, as administrators and students were removed from their participatory roles
due to issues related to power-over relationships. The trustworthiness of this complete first cycle of action research is best exemplified through the triangulation of data sources as well as the dialogic nature that came from the Matrix Interview and Focus Group. Furthermore, the rationale for the methodological choices taken are rooted in Reflective Practice Theory, Values Clarification and Transformational Learning Theory.
Chapter 4: Results

Teacher Sustainability Survey Results

The Teacher Sustainable Survey of ESL measured 17 indicators of sustainability attitudes centered on the three pillars of ESL, in addition to providing an opportunity for teachers to respond to two open-ended questions. This quasi-experimental mixed methods survey set out to measure teacher’s attitudes of ESL with the goal of having a better understanding of the existing culture of sustainability in our school.

There was a 19% participation rate (N=10), from a total of 52 teachers who were invited to complete this online survey. The survey results below show the frequency of responses as well as the mode, displayed through bar graphs. The graphs indicate the frequencies of responses for each of the 4-point Likert scale items for each question in the first four parts of the survey. Responses for part 5 of the survey, the open-ended questions, received a different treatment, explained later.

Results from the 4-point Likert scale items on the survey. The significance of the teacher survey in answering my first research question is two-fold. First, the data shows that teachers vary widely in their confidence in teaching ESL, despite having a good understanding of it. Also, the teachers’ comments suggest that teaching sustainability as a body of knowledge within their classes is simpler and more easily achieved than to involve students in real life solutions through actions. Figure 5 presents the results of the first part of the survey, where questions were related to the relevance of ESL to people’s daily lives. All teachers (100%) believed they had a good understanding of ESL, and all of the respondents agreed to the importance and benefits of ESL for students’ and teachers’ lives.
Figure 5. Results from Part 1 of the Teacher Sustainability Survey – Relevance of ESD to Daily Life (2015).

The majority of teachers (90%) agreed to taking the students’ sociocultural background into consideration when developing ESL curriculum, and this same number of teachers believed cultural background should also be taken into consideration when teaching ESL. Most educators
(90%) also agreed the provincial curriculum on ESL should be used in school, and that students would benefit academically from participating in international and provincial ESL-related educational experiences.

Figure 6 summarizes the second part of the survey, focusing on students’ needs in the future. Teachers unanimously agreed (100%) that students should be allowed to choose the topics of study according to their interests; however, only 70% of them believed students should have a right to make suggestions and decisions on matters concerning the school syllabus, while 80% of them indicated students should be able to self-manage their learning. All teachers (100%) asserted that teaching controversial topics in ESL can be beneficial in developing critical-thinking skills in students.

Figure 6. Results from Part 2 of the Teacher Sustainability Survey – Students’ Needs in the Future (2015).
The third part of the survey, integrating teaching, questioned teachers on their opinions on inclusion of such teaching practices as Aboriginal Education, participatory learning and sustainability action projects, as well as if they felt Winnipeg is inclusive of all races. Teachers’ responses are summarized in Figure 7. The majority of respondents (70%) indicated that Winnipeg is not inclusive of all races, and most teachers (90%) believed topics related to Indigenous knowledge and Aboriginal perspectives should be incorporated into the classroom. In Seven Oaks School division, Aboriginal Education has been a focus for the past few years in professional development. Through professional dialogue and meeting with Indigenous leaders, teachers in this division have been learning about the legacy of residential schools and colonization in education. I speculate that professional development is partially responsible for the high agreement among teacher participants for including Aboriginal Education in schools. All teachers surveyed (100%) agreed that participatory learning and teamwork is beneficial to
student learning, while most survey participants (80%) responded that involving students in sustainability action projects proved to be more useful in ESL teaching practices.

Part four of the survey questioned teachers about their current teaching practices; participant responses are provided in Figure 8. The majority of teachers (80%) currently incorporate ESL in their teaching, which corresponds to the same percentage of teachers (80%) indicating that they have ESL topics embedded into their curriculums.

Figure 8. Results from Part 4 of the Teacher Sustainability Survey – ESD in Current Teaching Practices (2015).

Results from the open-ended questions on the survey. The coded responses from the first open-ended question on the teacher survey are presented in Figure 9. N=2 participants did not provide an answer to this question. Data from this survey question was interpreted and organized into five codes. The first code, Greening the School, encompasses teachers’ responses involving staff and students developing sustainable living actions, such as, composting, installing solar panels, creating a community garden, and cleaning up the neighborhood. The second code, Teacher-Planning Time and Training, incorporates suggestions for more professional development on ESL, as well as training and planning for inclusion and the diversity of student needs. The third code, Building Curricular Connections to ESL, includes responses where teachers have identified the potential to improve sustainability pedagogy to existing units of
study. Greater Student Involvement in Sustainable Action Projects is the fourth code, which includes recommendations to have greater student buy-in for composting, growing food in the circle garden, and being active participants in waste reduction. The fifth and last code, Creating a School Culture of Sustainability, can be understood as a set of values, beliefs and norms that represent the identity of the school.

Figure 9. Codes of Responses for the Open-Ended Question 1 from the Teacher Sustainability Survey (2015).

Included in the first code are educators’ responses for what sort of school actions they envisioned taking place in the future. Teachers would like to see a “composting program that students buy into,” and expansion of the school garden (Teacher Sustainability Survey Responses, 2015). Other suggestions for greening our school included cleaning up our neighborhood, and installing solar panels for the school. There was a sense that more could be done in terms of waste management and “improving how the café handles waste” (Teacher Sustainability Survey Responses, 2015).
The second code includes comments on teachers wanting more professional development on ESL and incorporation of projects within the school and community. A teacher also commented that planning could explore social justice and wellbeing through a “more in depth look at what inclusion is and how it benefits all those involved” (Teacher Sustainability Survey Responses, 2015).

In the third code, some teachers noted that growing produce for foods class or the school cafeteria could be used in grade 10 Geography in the “Food From the Land Unit” (Teacher Sustainability Survey Responses, 2015). Another teacher remarked the potential for interconnecting knowledge of nutrition to growing vegetables in the school garden for Foods class.

To increase student involvement in sustainable action projects, it was said that we must work on student engagement with the community garden, increase the use of the composting bins, and empower students to change their actions to live more sustainably. One teacher stated, “[o]ur school could be more involved in spreading the awareness of sustainability, educating the community, and help support others locally and globally through fundraisers” (Teacher Sustainability Survey Responses, 2015).

The fifth code includes responses that suggested the need for creating a school culture of sustainability, such as, addressing apathy in students by raising “awareness of current local and global sustainable issues” (Teacher Sustainability Survey Responses, 2015), and addressing the need to make sure all students have a sense of belonging in the school. There was also mention of a need to stop the “inequality, inequity, prejudice and discrimination” that are faced by some students, “especially for our ‘at-risk’ students” (Teacher Sustainability Survey Responses, 2015).
The codes for the responses to the second open-ended question on the teacher survey are represented in Figure 10. N=2 participants did not provide an answer to this question.

Responses were interpreted and organized in three codes: Raising Awareness of how Choices Impact Sustainable Living, Building Curricular Connections to ESL, and More Time Required in Order to Improve ESL in Practice.

The first code relates to teachers making connections between lifestyle choice or consumer choice to the impacts on people and on the planet. Building Curricular Connections to ESL refers to lessons where teachers have incorporated sustainability pedagogy into the topics of the curriculum. The third and last code suggested lack of time for planning was a limiting factor in allowing ESL to be meaningfully incorporated into the curriculum.

Figure 10. Codes from Responses for the Open-Ended Question 2 from the Teacher Sustainability Survey (2015).

The responses grouped under the first code include comments on how teachers educate for sustainable living within their classes: “Education on local production of foods and the influences of global issues on humanity and the Earth. Educating students on the impacts of
poor sustainable approaches that have led to where we are today” (Teacher Sustainability Survey Responses, 2015). Another teacher remarked,

- I mainly approach this from a consumer choices point of view, and from a civics point of view. I.e. students learn how the products they buy affect the environment, animals, and people. How to make informed buying choices, and how to write to the elected officials to influence policy. (Teacher Sustainability Survey Responses, 2015)

Other teachers seemed more confident in finding curricular connections and incorporating ESL into their practice, as illustrated by some of the responses included in Code 2:

- “I try to help students see the interconnectedness of all things with each other in the world. Students would read news articles, do research or debate about any of these topics;” and, “I teach geography mainly from the perspective of environmental and cultural impacts of human activities” (Teacher Sustainability Survey Responses, 2015).

The third code includes statements indicating that more time for planning is required in order for meaningful ESL pedagogy: “I would like to have the time to talk to other teachers and see how they successfully incorporate ESD into their curriculum.” Similarly, “I try to but I never have the time to make it meaningful. I just graze the surface of the topic” (Teacher Sustainability Survey Responses, 2015).

**Students Sustainable Living Values Survey Results**

The Student Sustainable Living Values Survey measures 17 indicators of sustainability values centered on the three pillars of Educating for Sustainable Development in addition to providing an opportunity for students to respond to one open-ended question. This non-experimental mixed methods research set out to measure students’ values of sustainable living with the goal of having a better understanding of the existing sustainability culture of our school.
There was a 17% participation rate from a total of 172 students who were invited into this study. The survey results below are displayed through bar graphs, which indicate the frequencies in response to each of the items in the 4-point Likert scale used. Some of the students who completed the survey in print indicated both agreement and disagreement simultaneously, therefore a small amount of neutral responses were recorded.

**Results from the 4-point Likert scale items on the survey.** The results from the first part of the student survey, Respect and Care for the Community of Life, are seen in Figure 11. Students’ values were in agreement for the first five questions in part of the survey. All student respondents (100%) indicated we should pass on to future generations the things that support the long-term prosperity of humankind. The majority of students (93%) perceived that being in nature lead to a sense of wellness.

Figure 11. Results from Part 1 of the Student Sustainable Living Values Survey – Respect and Care for the Community of Life (2015).
Figure 12 presents the data from part 2 of the student survey, on Ecological Integrity. The majority of students (77%) accepted that humans are severely destroying the environment and that this usually leads to disasters. Most students (87%) felt that if status quo continues, severe ecological disaster would emerge. Fewer students (66%) feel the human population is approaching the Earth’s limits.

Figure 12. Results from Part 2 of the Student Sustainable Living Values Survey – Ecological Integrity (2015).

Part 3 of the survey asked students questions related to social and economic justice, as seen in Figure 13. Interesting insights were obtained on how students view the terms
opportunities and inclusion in regards to the questions focused on racism. The fact that 80% of students were in agreement with the claim that everyone has equal opportunities, yet only 66% suggested that Winnipeg is inclusive of all races suggested students were identifying systemic racism at play. During the focus group session, teachers pointed out that students would have difficulty in articulating why this occurs, and mentioned this can end up leading to racial stereotypes if not critically examined. However, it should be noted that this data was collected prior to the Equity conference, which set out to achieve the goal of educating about systemic racism amongst other important topics. The equity conference results will be discussed later on.

Figure 13. Results from Part 3 of the Student Sustainable Living Values Survey – Social and Economic Justice, (2015).

When contrasting students’ views on Canada being an inclusive country (80% student agreement) versus 93% of students agreeing that social inequality leads to poverty, it became evident that the majority of students do not understand that poverty can systemically target a
particular race. This is further substantiated by 66% of students feeling that Winnipeg is inclusive of all races, when the literature shows a growing discrepancy between First Nations people and other Canadians in all socio-economic indicators of well-being. This points to the need for race relations education in school, and will be discussed later on.

There was a very different response to racial inclusion in our city from teachers, where only a minority (30%) agreed that Winnipeg is inclusive of all races. As mentioned previously, professional development for teachers could have increased awareness on this topic.

Democracy, nonviolence and peace was discussed in part 4 of the survey, and results are shown in Figure 14. Most students (90%) pointed out that schools should engage in values education for the future; the mode indicates that over half of the participants, 53% were in agreement, while 37% strongly agreed with this statement. A strong majority, 97% of students expressed that promoting lifelong learning is an important goal for education for sustainable development.

![Figure 14. Results from Part 4 of the Student Sustainable Living Values Survey – Democracy, Nonviolence and Peace (2015).](image)

Part 5 of the survey included students’ experiences with ESL at school, and the results are represented in Figure 15. In our school, 74% of student participants indicated they have learned about sustainable development topics in their classes this year; while only 23% of students
indicated they have not. Yet, the majority of students (90%) remarked sustainable development subject matter should be more embedded into student learning. Building curricular connections is one of the major themes seen throughout the results, in the teacher and student surveys, matrix interview and focus group responses alike.

Figure 15. Results from Part 5 of the Student Sustainable Living Values Survey – ESD in School Experiences (2015).

Results from the open-ended question on the survey. Results from the open-ended question on the student survey are seen in Figure 16, which presents the codes from students’ responses to this question. N=13 students did not answered this question. Data was interpreted and organized in six codes: Greening the School; Meaningful Action Project Opportunities; Sustainable Living more Embedded into Curriculum; Opportunities for Students to Teach Others about Sustainability; Incentives for Students to be more Sustainable; and Safe and Inclusive School Culture.

Several students made specific recommendations for greening the school, including, “[c]omposting, [c]omposting, [c]omposting” and, “to have an effective and sound waste management and disposal system” (Student Survey Responses, 2015). One student suggested having “more activities that will help the environment around us,” which included meaningful
action project opportunities such as “clubs and fundraisers that will help raise money” (Student Survey Responses, 2015).

Figure 16. Codes from Responses for the Open-Ended Question from the Student Sustainable Living Values Survey (2015).

In Sustainable Living more Embedded into Curriculum, a student indicated that, “in classes we should be taught why and how sustainable living will affect our future” (Student Survey Responses, 2015). One student discussed that there are some limitations in the way teachers run clubs such as the Social Justice Club. A student pointed out that students should have opportunities to teach others:

We learn/do many things in the club, which I really enjoy, but I find that we don’t get many opportunities to share what we’ve learned or what we’re passionate about with the whole school. If we had more opportunities, the knowledge would reach not only the 12-20 students in the club, but it would reach and benefit the school in its entirety. My idea is
that we could present our knowledge, causes, etc. at an assembly and different events throughout the year to reach all students. I think it would capture [students’] attention better than a newsletter, although that’s still a good way to spread the word. I just think the more people we can reach out to, the better! (Student Survey Responses, 2015)

Code 5 represents responses related to incentives for students to embrace SL. One student noted, “free drink with (reusable) cup would be great for our future,” while another mentioned “more punishment” as an incentive to changing student behaviors (Student Survey Responses, 2015).

Included in the last code, Safe and Inclusive School Culture, are students’ suggestions that our school should focus on “respect with one another” and, “the school becoming more safe” (Student Survey Responses, 2015). Although it is unclear exactly what these students meant by the terms safe or respectful, many added to this discussion. Another student indicated our school would be more sustainable “if people were included in all of the grades and not be judged,” while other participants noted, “be kind, don’t be stupid” and, “call people out when they are racist” (Student Survey Responses, 2015). Lastly, the comment was made, “I feel that our school needs to see both sides of a story of right and wrong or else our school will have a lot of otherness” (Student Survey Responses, 2015). Many of these responses are indicative of the lessons learned during the Equity Conference. Although the student survey was intended to be completed prior to the Equity Conference, some students completed the survey afterwards. For example, the mention of fighting racism, being kind and questioning “otherness” in terms of fighting prejudice, were the key themes presented by the keynote address delivered by Kevin Lamoureux at the conference. These topics were also the main messages conveyed during the breakout sessions that day.
Equity Conference Student Reflection Exit Slip Results

The Student Reflection Exit Slips were designed to ask students six open-ended questions to allow them to reflect on the value of the Equity Conference and on the changes that may have occurred in their own values or learning after participating in the Equity Conference at the school. There was a 14% participation rate from a total of 172 students who were invited into this study. The results from the Student Reflection Exit Slips are displayed below, with quotes from students’ responses to illustrate each code.

I generated seven codes from the data when analyzing the students’ responses from the Student Reflection Exit Slips (Figure 17). These are as follows: Learning and Personal Change; Being Non-Judgmental in Ending Racism; The Need to Educate and Raise Awareness; Aboriginal Perspectives; Hopelessness/Incapable of Change; Taking Action; and No Gain from the Conference.

Figure 17. Codes from Responses to the Equity Conference Student Reflection Exit Slip (2015).

The first code includes responses expressing the learning or personal change that students gained from this event. Many students pointed out how participating in the conference changed them: It “has changed my opinions, and what I really believe in,” and, “I got to learn what equity means and that saying equal or doing what is equal is not always right. We need to pay more attention on what’s happening in our surrounding” (Equity Conference Student Reflection Exit
Slip Responses, 2015). Another student remarked, “this changed the way I view other people and it makes me feel compassion,” presumably towards people who are victims of racism, prejudice or inequity (Equity Conference Student Reflection Exit Slip Responses, 2015). Many comments also suggested that students learned the difference between the meaning of equity and equality: “I learned that not everyone wants to be treated the same; they would rather have the same opportunities as others.” Another student expressed “I’m hoping that everyone in the future will be treated fair and not just equal. Also, for everyone to get the same privileges as much as possible” (Equity Conference Student Reflection Exit Slip Responses, 2015).

The Equity Conference also provoked many students to mention the importance of being non-judgmental of differences in others as illustrated by responses grouped under Code 2. Kevin Lamoureux gave the keynote address at the Equity Conference and spoke on the topic of otherness. His main message was that we can all work on being more tolerant and extending kindness, fairness and empathy in order to end prejudice and racism. Students indicated they heard this message by commenting on their exit slips, “you shouldn’t judge people by what they look like or their skin colour,” and, “to stop racism and stereotypes or at least lower the cases of racism and bullying, I hope the world knows how to not judge others before you get to know them” (Equity Conference Student Reflection Exit Slip Responses, 2015).

Students discussed the importance of education in addressing racism as seen in Code 3. “I would teach people what to do and not to do;” or, as another student suggested, “I will tell people the right thing to do and educate them” (Equity Conference Student Reflection Exit Slip Responses, 2015). One student even suggested how to raise awareness with others: “be patient with those who are closed minded because they can easily change their minds/open their minds in a short amount of time” (Equity Conference Student Reflection Exit Slip Responses, 2015).
Although the conference aimed to address all forms of racism, there was a strong incorporation of Aboriginal perspectives brought in through a variety of Indigenous leaders and activists, as seen in Code 4. Students discussed what they learned from the First Nations guest speakers with comments such as, “Aboriginal people in Canada don’t always get more privilege than any other race. They sometimes even have less privilege than others” (Equity Conference Student Reflection Exit Slip Responses, 2015). One student voiced, “I learned more about their culture and things aren’t always as they seem;” while another student pointed out, “I was aware of the issues happening in the North end and had no opinion on those situations of otherness and racism, but after the conference, I now have an opinion and a higher respect of Aboriginals” (Equity Conference Student Reflection Exit Slip Responses, 2015).

An interesting observation from the data is seen within Codes 5 and 6. Some students were left feeling they were incapable of initiating change or rather a feeling of helplessness in how to create change (Code 5), whereas others were inspired to take action (Code 6). This will be discussed more in depth later on. Hopelessness was exemplified by the following statement, “I honestly do not know if I can do anything or know where to begin to help this cause other than educate myself even more” (Equity Conference Student Reflection Exit Slip Responses, 2015). Similarly, another student expressed a sentiment of not knowing how to initiate change, “If I could help, I would. But all I can think of is to talk to people about it” (Equity Conference Student Reflection Exit Slip Responses, 2015). On the other end of the spectrum were the students who felt this conference was a call to taking action, as represented by responses such as, “[i]n the future I hope to make the same kind of contribution to this cause as well as go experience what Michael [Champagne] is doing with my own eyes;” another student mentioned
how he or she would “join causes,” which will help solve this issue (Equity Conference Student Reflection Exit Slip Responses, 2015).

Whereas the majority of students remarked that conferences such as the Equity Conference are meaningful to students at the school and that they have learned something from it, when asked if their values had changed related to sustainability and equity after this conference, some students felt they did not experience any change (Code 7). One student pointed out, “[i]n my life it honestly has not because I stick to my beliefs and values.” Another student expressed that there was no gain from the conference because, “[i]t didn’t change my values as I already knew the importance of it and today continues to show that” (Equity Conference Student Reflection Exit Slip Responses, 2015). I will discuss this interesting finding in the next chapter.

Matrix Interview Results

The Matrix Interview included eight teacher participants, all of which were involved with ESL initiatives within the school. A total of eight questions were asked in two rounds of interviews. Participants interviewed each other and recorded answers in this democratic interviewing technique. There was an opportunity to share results after the two rounds were completed, which allowed for member checking of the data gathered during the session.

After reading the transcripts several times, I began coding inductively. Figure 18 presents the six codes generated from the teacher matrix interview responses analysis: Curriculum; Teaching and Learning; Promoting ESL as a School Culture; Acting on Learning; Partnerships and Real-World Connections; Facilities and Operations; and Professional Development (PD), Structures and Governance.
Many teachers discussed the importance of curriculum, teaching and learning when educating for sustainable living. Increasing curricular connections to ESL were mentioned in both the student and teacher surveys. Specific recommendations were stated during the matrix interview, such as, collaborating on more school wide sustainability initiatives, implementing further ESL extracurricular opportunities, and creating curricular ESL support documents or finding existing ones. Other suggestion included planning integrated curricular sustainable learning opportunities within clusters or through Teacher Advisory Groups (TAG).

![Themes from the Matrix Interview](image)

**Figure 18. Codes from the Matrix Interview (2015).**

The point was raised that students can be an integral part in promoting sustainable living initiatives related to wellness. One teacher made the comment, “student voice is powerful and creates strong connections, we need to promote how to use it properly” (Matrix Interview Transcript, 2015). This echos the recommendation by students for opportunities to teach others about sustainability (Student Sustainable Living Values Survey Responses, 2015). Educators
noted that there should be an emphasis on promoting a “culture of wellness” for all staff and students. There are several ways in which the school could improve wellness as noted by teachers: Increasing place-based education and outdoor learning; helping support people locally and globally through fundraisers; educating safe ways to commute by bike; developing initiatives that help marginalized students be successful and included; and encouraging a sense of belonging and student connectedness.

Teaching staff also made several recommendations on how to increase action on learning for sustainability by encouraging active participation from staff and students. Teachers stated examples such as, incorporating ESL themes into period days; building a greenhouse with students; and having composting available school-wide. Increasing involvement in sustainable action projects was also a key theme from both the teacher and student surveys. In the matrix interview, this theme included suggestions such as, incorporating the school garden into various curriculums; developing with students a successful composting program; and greening the neighborhood environment. It was pointed out by teachers that these projects may also be the incentive that is needed to increase teacher and student “buy-in” to sustainability. Student survey results also pointed out the need for incentives for students to be more sustainable (Student Sustainable Living Values Survey Responses, 2015). Teachers mentioned that incentives may include volunteer credits for students and increased preparation time for teachers.

Partnerships and real-world connections were discussed as a way to help teachers to come up with sustainable solutions by gaining knowledge, skills and attitudes on sustainable living. It was noted by teachers that our community has a variety of resources that may help us in planning and implementing sustainable living initiatives. The following were specific suggestions offered: More connections and projects with seniors surrounding the school;
working more closely with Indigenous communities; building democratic involvement through letter-writing and political engagement with various levels of government; and more student involvement with aid to our sister school in Uganda. In addition, partnerships could be made with sustainable living organizations, post-secondary institutions, businesses with a sustainability focus, or government and organizations that provide support documents and learning initiatives.

Teachers remarked how ESL could be improved upon through the existing facilities and operations. Examples included using the physical LEED building as a teaching tool and having students conduct research in order to first assess and then reduce the school’s footprint. Reducing the school’s footprint could include actions such as, using natural sunlight rather than existing lighting when possible; installing dual-flush toilets and solar-panels; putting sinks on timers; and installing sufficient bike racks and a bike storage compound for commuting purposes.

The last code includes responses related to professional development (PD), structures and governance. Comments were directed mostly at the need for meaningful and regular PD surrounding ESL within the school. The focus group and matrix interview participants mentioned that PD opportunities should reflect the fact that educators are on a continuum of understanding in sustainability, and should offer different learning opportunities accordingly. Teachers also mentioned there should be incentives, encouragement and support provided to staff in order to engage in ESL and lead to school-wide buy-in. Teachers indicated lack of time as a major barrier for planning ESL into the existing school day. The following were specific suggestions that teachers offered to address finding more time within the existing school day as an incentive for ESL: Building into the schedule a small amount of ESL time at the start of the day, 20 to 30 minutes that could double as contact time in order to allow students to gain the
skills required to implement student action projects; re-envisioning Wednesday morning meetings as ESL collaboration time; or incorporating ESL themes into existing period days to increase whole-school learning opportunities. Students could choose which initiative to join, insofar as all staff surveyed (100%) believed that student choice is important. Teachers also remarked that educators should report on the progress of their chosen initiative at the end of the year in order to reflect, improve pedagogy, and to communicate outcomes with others in a collegial way, which could be achieved through the already existing Annual Reflection of Professional Learning (ARPL). These reports could be included in a school newsletter or in the report to the community.

Another proposed solution for increasing preparation and implementation time for ELS-related initiatives included scheduling a certain amount of time per week (1 to 2 hours) for staff and students to run an existing program or initiative, or to develop a new one around an ESL theme through Teacher Advisory Groups (TAG). This time could be a way to re-imagine how to incorporate TAG into the schedule, where students are involved in planning and implementing ESL initiatives with their teacher advisor. It was noted the importance of a transition towards a four-period day in order to reduce the demands of many curricula and creating more time for integrating ESL into existing curriculum.

More specifically on the theme of Governance, a recommendation was made to re-envision and promote a mission statement that communicates sustainability as the central concern for the school. Teachers raised the point that the school should establish sustainable living as the central goal for the school plan, in order to reassess and report on goals yearly. Many educators also stated there should be increased student voice within the school’s governance. One way of incorporating student voice would be to consider the formation of a
School Sustainability Plan (SSP) team, consisting of not only staff as is currently done, but also students to oversee the school plan. It was indicated that future policies at the school could focus on reducing the school’s ecological footprint, increasing student health and wellbeing, as well as creating a culture of sustainability in the local and global contexts. For example, creating a policy for buying fair-trade clothing and sports equipment when possible could work towards fair wages and educating students about sweatshops. Another example could be a policy to increase the amount of healthy, sustainable and local food being served, and decreasing the amount of paper and plastic waste in the school cafeteria.

One teacher was vocal in asking that the school or school division secure proper funding and support to ESL initiatives that have been identified by the school requiring further supports or actions. One such example is the need to hire someone to transport compost regularly to the biovator from the school. This could mean hiring an ESL coordinator to oversee and assist in all sustainability initiatives.

Lastly, teachers suggested the grade 9 orientation as a perfect opportunity for promoting sustainable living as a school culture. Teachers suggested we use this orientation day to introduce our school as a sustainable school and how we want students to be involved in making this transformation throughout the next four years. Sustainable living as a school culture was an overarching theme voiced by students and staff throughout this study, and relies on making ESL a central educational priority and ensuring knowledge, skills and attitudes lead to supporting individuals in making this transformation.

Focus Group Results

The Focus Group consisted of eight teacher participants, all of which where also involved with the Matrix Interview and ESL initiatives within the school. Three open-ended questions
were asked to the group, and participants were encouraged to answer them in a round-table discussion.

The results from the focus group pointed out what staff and students envision for the future plans of the school. One teacher from the focus group voiced the concern that the teacher and student surveys conducted as part of this study attracted only participants who already had a good understanding of SL, and therefore left others out. An interesting point was raised that perhaps some staff chose not to participate because they “don’t have a good understanding of these topics, or are not comfortable doing it” (Focus Group Transcripts, 2015). One teacher felt that the majority of teachers at the school tend to think of the environment when discussing sustainability. The focus group participants also expressed that both teachers and students are likely to misunderstand how socio-economic factors and wellbeing are integral to sustainability, and that more efforts need to be made to raise awareness of this connection. Although, no one in the focus group or teacher survey voiced outright a lack of understanding in sustainable living, there was an indication that more PD was required in order to lead to a deep understanding of what meaningful ESL looks like in practice (Teacher Sustainability Survey Responses, 2015).

Another educator in the focus group remarked that teachers know that ESL is important, and they feel like they should be teaching sustainability topics that are “very relevant, very important.” A barrier could be that when asked to weave these topics into curriculum, “they don’t want to admit that they don’t have the knowledge to teach it” in an integrated way (Focus Group Transcripts, 2015). Other recommendations by teachers, however, suggested the PD committee should look at establishing an integrated approach of “how-to educate for sustainability,” rather than the “why we should educate for sustainability” (Focus Group Transcripts, 2015).
As mentioned previously, the majority of students (74%) have learned about sustainability in their classes this year, and as many as 90% of students surveyed indicating that sustainability should be more embedded into student learning. In addition, the majority of students indicated that school-wide events such as the Equity Conference were meaningful in educating for sustainability (Equity Conference Student Reflection Exit Slip Responses, 2015). Based on the data from the teachers in the focus group discussions, pedagogy for ESL should be well planned out in order to facilitate the complexities of topics. Teachers can be mindful of student voice by embedding sustainability into cross-grade projects, school-wide conferences, or having students engaged in research and presenting their findings (Babiuk et al., 2010).

However, there is also a need to do so in a careful manner, because, as suggested in the Equity Conference Student Reflection Exit Slip Responses (2015), some students may be left with a feeling of hopelessness and that they are incapable of creating change. It is interesting to note that when students were asked what they could do to further the cause of equity, the majority of students reported the most significant thing they could do was to change their own actions and thoughts by not judging others, which is one of Jack Mezirow’s founding ideas (1997).

The focus group also spent some time discussing the Teacher Sustainability Survey Results when building curricular connections to ESL and involving students in the planning process. The results suggest a strong support from teachers for student voice, but less support for students to make suggestions and decisions on matters concerning the school’s syllabus. One teacher summarized the issue as follows: “Participation is great, but as actual power migrates over to students, people start getting cold feet” (Focus Group Transcripts, 2015). It was noted that due to the pressures on teachers to follow their content-laden curricula, it is difficult to have
students involved in planning course content. A more inquiry-based curriculum would allow for meaningful ESL teaching, a claim echoed by scholars such as McKernan (2008).

Another difficulty pointed out by teachers referred to teaching practices; as one teacher stated, “translating our [principles] into action, people either seem uncertain or unwilling to make that leap” (Focus Group Transcripts, 2015). This same uncertainty was expressed by students who felt a sense of hopelessness for how to end racism and their trepidation on how to create change (Equity Conference Student Reflection Exit Slip Responses, 2015). Teachers also remarked that this is similar to how students, when given an opportunity for meaningful choice within the curriculum, often are unsure of what to do, or “they don’t know” as they have rarely been given this opportunity (Focus Group Transcripts, 2015). Again there is a recurring theme of uncertainty, not only by students, but by some teachers as well, in terms of how to create solutions. A recommendation that arose was that as educators, “we have to develop the tools and structures to teach students how to do that [initiate change], and that has to start in kindergarten and up” (Focus Group Transcripts, 2015). This teacher speaks of building the capacity for students to know how to initiate change, and knowing what actions or solutions would be meaningful given the problem at hand. This would address student uncertainty and refocus efforts on empowering students to take action.

Commenting on the results from the student surveys, a teacher expressed the difficult situation that arises for educators when “kids are trying to look at their own values system, which goes against what they’ve been taught at home or subjected to,” and how it can be difficult for teachers to facilitate discussion on such sensitive topics (Focus Group Transcripts, 2015). This relates to the need for considering alternative perspectives, allowing students to present different views and examine critically their current values (Kozak & Elliott, 2014). The Equity
Conference provided such an opportunity for critical reflection on values, as one student noted, “I find that my eyes have been opened even more about the issue of lack of equity in Winnipeg” (Equity Conference Student Reflection Exit Slip Responses, 2015).

The unique values system that each student develops at a young age further suggests the great need for opportunities to analyze such complex concepts with other students. Basic knowledge can sometimes lead to students’ own misconceptions and false-assumptions about the world around them. During the focus group one teacher had this to say in regards to students exploring the topics of racism and equity: “There is an ongoing responsibility on our part to be involved here,” a “personal ongoing responsibility” to be inclusive of all people in society (Focus Group Transcripts, 2015). The Equity Conference achieved its goal in leading to better understanding of inclusion through equity. One student remarked in their exit slip, “I learned that equality is not always as good as equity because some people may need a little more to get started in what they are doing” (Equity Conference Student Reflection Exit Slip Responses, 2015).
Chapter 5: Discussion

The results from this study presented an in depth look at the current discourse on ESL within the school through triangulation of the student and teacher surveys, exit slips and reflective dialogues from the focus group and matrix interview. Teaching staff’s and students’ values and attitudes are greatly supportive of sustainability, but it was noted through their suggestions that further action can be taken.

Themes From the Results

A major theme within the results was the need to greatly increase student involvement in active learning for sustainability through action projects across curriculum areas. Raising awareness about equity, inclusion of all students, and Aboriginal perspectives were also noted as themes from the Equity Conference. With this in mind, there is a need for building on existing teacher planning time and training, and developing long-term professional development in sustainability to not only gain a deeper knowledge on how to implement action projects, but to also have the opportunity to plan, develop and collaborate with others to achieve this goal. The results also indicated the need for re-envisioning the existing timetable within the school day in order to build capacity and facilitate the time needed to change curriculum, teaching and learning, and support meaningful partnerships. Another theme from the results included the need for addressing sustainability through governance and leadership by shifting the school’s priority to focus on ESL in order to create a school culture of sustainable living.

Raising awareness about equity, inclusion, and Aboriginal perspectives. The results of the student exit slips are evidence that many students learned to differentiate between equity and equality at the Equity Conference. The results of the surveys indicated the differences
between how teachers and students perceived racial inclusion in Winnipeg; where 66% of students felt Winnipeg is inclusive of all races and only 30% of teachers did so. In the context of schooling, equity relies on the inclusion and engagement of all students; however, as Battiste (2013) points out, we problematically rely heavily on a Eurocentric education, in which conventional schooling and teacher-centered, fact-based techniques are used, which, as noted by Redman (2013), are not sufficient in creating transformative change. Teachers indicated a difference between the opportunities provided to students and actual engagement of some of our students in school. As one teacher noted:

There’s a disconnect between you know, between the key terms, opportunity and inclusion. So, again, while most people feel that opportunity exists for everyone, this in itself can kind of serve as a way to marginalize people because then you essentially blaming individuals for experiencing systemic racism. So, you say, oh yes, they have the same opportunities, now it becomes their own fault when they [students] don’t realize those opportunities. (Focus Group Transcripts, 2015)

Students also envisioned having a safe and inclusive school culture where “people are included in all of the grades and not be judged” (Student Sustainable Living Values Survey Responses, 2015). One teacher mentioned, “there needs to be a more in depth look at what inclusion is and how it benefits all those involved” (Teacher Sustainability Survey Responses, 2015). Battiste (2005), as cited in Barnhardt and Kawagley (2005), noted why, further to the devastating effects of colonization, Indigenous students are particularly vulnerable to be excluded in schools:

Students in Indigenous societies around the world have, for the most part, demonstrated a distinct lack of enthusiasm for the experience of schooling in its conventional form – an
aversion that is most often attributable to an alien institutional culture rather than any lack of innate intelligence, ingenuity, or problem-solving skills on the part of the students. (p. 10)

In particular, teachers demonstrated concern for students who are not being successful in school, quoting their personal responsibility in regards to equity and inclusion in school.

As seen in the results, one way the school strives to build equity is through providing a breakfast program for students, where there is an opportunity to teach students to have a healthy outlook on life, with a focus on healthy eating. This connects to understanding how nature sustains us (Golemen et al., 2012).

The Truth and Reconciliation Commission of Canada (2015) specifically requests the following calls to action in education:

- Providing sufficient funding to close identified educational achievement gaps within one generation.
- Improving education attainment levels and success rates.
- Developing culturally appropriate curricula.
- Protecting the right to Aboriginal languages, including the teaching of Aboriginal languages as credit courses.
- Enabling parental and community responsibility, control and accountability, similar to what parents enjoy in public school systems.
- Enabling parents to fully participate in the education of their children.
- Respecting and honouring Treaty relationships (p. 2).

As noted from one educator during the focus group, teaching from an anti-race perspective includes naming relationships of power and privilege in society. This cannot be
isolated to content, but includes building relationships between different groups in society. This relates to considering alternative perspectives and pedagogy for ESL (Babiuk et al., 2010; ESD Leadership Council, 2013; Kozak & Elliott, 2014). Marie Battiste (2013) suggests that despite the innovations in decolonization of education, there is still more work to be done: “The existing curriculum has given Aboriginal people new knowledge to help them participate in Canadian society, but it has not empowered Aboriginal identity by promoting an understanding of Aboriginal worldviews, languages and knowledge” (Battiste, 2000, p. 192).

Furthermore, in the quest for sustainability, encouraging all students to embrace an Indigenous way of life can be instrumental in the conservation of ecosystems (Goleman, Bennett & Barlow, 2012). The ecological crisis we face requires an understanding of our inclusiveness with nature, that we are a part of it, not separate from it. The diversity of cultures we see in Canada is somewhat unique, in that we have come to live all together with our unique differences, but it has also left us without a common story (Atleo, 2011). Such a story is important for building mutual understanding across cultures and different ways of knowing while embracing the commonalities we share. Our connections to nature and our desire for wellness and equity could very well be as Atleo suggests, a “generic Aboriginal one,” since these values are so deeply ingrained into the heart of Indigenous culture (Atleo, 2011, p. 89). It should be noted, that treaties are also instrumental in providing a legal framework to give all Canadians a right to a clean and healthy environment, as within these agreements are the protections of lands and traditional territories. As one of the teacher participants suggested, teaching how to live more lightly on the planet could include seeing how sustainability varies between different families and Indigenous societies around the world associated with varying ecological footprints.
An investigation like this may lead to insights on solving problems in local and global contexts (ESD Leadership Council, 2013).

The Equity Conference was a learning opportunity for students to consider Aboriginal perspectives and the systemic racism that is present in our society today. Students raised an interesting point when asked what they could do to further the cause of equity; the majority of students reported the most significant thing they could do was to change their own actions and thoughts, which is one of Jack Mezirow’s founding ideas (1997). Mezirow (2000) noted that students have their own perspectives and make assumptions about the world around them (p. 16). As discussed in Chapter 2, Mezirow suggests there are often ten processes involved in transformative learning theory (2000), beginning with a disorienting dilemma. The results showed how the Equity Conference acted as a disorienting dilemma where students self-examined their feelings of “fear, anger, guilt or shame” (2000, p. 22). As one student wrote, “I took away all of the negativity I felt” (Equity Conference Student Reflection Exit Slip Responses, 2015). Students questioned their assumptions and perceptions about the way things are, as with the case of this student, “I learned more about their [Aboriginal] culture and things aren’t always as they seem” (Equity Conference Student Reflection Exit Slip Responses, 2015). Mezirow indicates that once assumptions no longer fit within existing frames of reference, this leads to a need for change, an “exploration of options for new roles, relationships, and actions” (2000, p. 22). There is a need for considering alternative perspectives, allowing students to present different views and examine critically their current values (Kozak & Elliott, 2014).

Learning and personal change was exemplified in this student’s comment, “I learned how racism can really have bad lifelong effects on victims. It proves the importance of working against it” (Equity Conference Student Reflection Exit Slip Responses, 2015). The use of the
word “proves” suggests this student has new found conviction for change, or as Mezirow would suggest, evidence to change “our points of view, beliefs and interpretations that can lead to significant transformation (Mezirow, 1997, pp. 6-7). Many students remarked that personal change meant keeping their own prejudice in check: “This changed the way I view other people and it makes me feel compassion. I’ve learned to not judge people by their appearances” (Equity Conference Student Reflection Exit Slip Responses, 2015). John Ralston Saul (2014) notes that the most pressing issue in Canadian schools today is working towards a new narrative of the relationship between Indigenous and non-Indigenous people. Saul (2014) cautions that schools must be very aware of their Eurocentric colonial roots when including Aboriginal perspectives in curriculum, so that all Canadians can understand our shared reality:

If we are not careful, informed and conscious, we can easily slip back into passive forms of sympathy when confronted with the suffering of First Nations children or poverty on reserves or family problems coming out of the destructive effects of the residential schools or failures in leadership. This is not an honest reaction. This is the modern shape of deeply ingrained attitudes going back to those old European-derived attitudes of superiority. (p. 16)

According to Saul, sympathy from outsiders is the new form of racism and must be replaced with a strong conviction to protect rights for all (2014, p.16). Based on the responses on the Equity Conference Student Reflection Exit Slips, there was no expression of sympathy but there was evidence of students identifying the injustice and denial of rights of Aboriginal people, such as in this student’s comment: “I honestly learnt about everything, some of the things that I learnt about were the Indian Act and that Canada is the last place that has it” (Equity Conference Student Reflection Exit Slip Responses, 2015).
Guiding students towards action. Within the broader domain of curriculum, teaching, and learning, lies a whole variety of complex topics for sustainability that exists beyond equity. Although the results suggested that sustainability initiatives such as the Equity Conference were meaningful to the majority of students, it was not the case for all participants. The results from this study presented a dichotomy; some participants benefitted from ESL initiatives which lead to a shift in values and a transformation in frames of reference (Korthagen, 2013; Mezirow, 1997); whereas some staff and students were left feeling overwhelmed about what could be done or unsure of how to best initiate change. Anne MacDiarmid (2013) refers to such phenomena as "eco-fatigue," which can in fact have a detrimental effect on ESL in schools, as participants are left feeling hopeless rather than empowered to change.

The Equity Conference was instrumental in guiding most students through the first five processes of Mezirow’s transformative learning theory. However, the conference did not follow up with student actions for equity. Ultimately, what was not facilitated by teachers or the conference itself were Mezirow’s last five steps: “planning a course of action, acquiring knowledge and skills for implementing one’s plans, trying of new roles, building competence and self-confidence in new roles, and reintegration into one’s life on the basis of condition dictated by one’s new perspectives” (Mezirow, 2000, p. 22). As indicated in the results, for some participants these last steps were a natural progression leading to the intrinsic need for taking action based on their new perspectives: “In the future I hope to make the same kind of contribution to this cause” (Equity Conference Student Reflection Exit Slip Responses, 2015). However, others reached only as far as Mezirow’s fifth stage, that of exploring possibilities such as identifying the need to educate and raise awareness on Aboriginal perspectives. However,
exploration of possible actions are not the same as taking action, and the consequences of each cannot be assumed to be the same.

Referring back to the dichotomy I presented before, I should note that for those left feeling hopeless, it is likely they only reached Mezirow’s second phase of self-examination, as exemplified by a student who commented, “I honestly do not know if I can do anything or know where to begin to help this cause” (Equity Conference Student Reflection Exit Slip Responses, 2015). One teacher within the focus group mentioned that student apathy could be addressed by raising awareness of current local and global sustainability issues. However, I argue that awareness is not enough, due to the fact that apathy is in fact related to hopelessness. If students feel they cannot initiate change, why would they feel motivated to learn about the challenges facing humanity? Moreover, whereas awareness may be a prerequisite for taking action, it does not follow that students will feel empowered to take action once they have learned about sustainability issues, as the very sentiment of hopelessness expressed by students indicate.

Following Mezirow’s steps of transformation, I infer that if teachers had come away from the conference with a plan to engage their students in a meaningful student action project to promote equity, that it may have reduced or eliminated this sentiment. Students whose self-examination led to feelings of hopelessness may have been empowered and gained self-confidence in creating change through guided action. This is supported by several academics who note the importance of involving students in sustainable action projects, which are also extremely important in transformational change, as it creates opportunities for being involved in solutions (Babiuk et al., 2010; ESD Leadership Council, 2013; Goleman, Bennett & Barlow, 2012; Kozak & Elliott, 2014).
Also noted in the results were the need to intentionally include students who might not see themselves as leaders in such initiatives. One teacher discussed how this was done at the school by inviting a diversity of students to attend the Horizons Leadership Conference.\(^1\) The participants gained social skills and leadership skills, which benefited a variety of students not just the natural leaders within the school.

We need to engage students in similar ecological projects that leave them feeling empowered to change. Having students embrace ecological handprint projects and learning outdoors are not only great ways to incorporate a more inquiry-based education, but can be instrumental in increasing wellness and reconnecting students to nature (Biemer et al., 2013; Louv, 2005). School-wide projects such as vertical gardening or the community garden allow students to act on sustainable solutions (Babiuk et al., 2010; ESD Leadership Council, 2013; Goleman et al., 2012; Kozak & Elliott, 2014).

Teachers noted a variety of additional examples of how curriculum could incorporate sustainable actions. In the Winter months, plants and rescued animals or pets in the classroom can be used to build empathy for all life forms (Golemen et al., 2012). Teaching with Aboriginal perspectives could be done by teaching what different Indigenous people used as sources of food and how to live off the land. This could lead to students selecting and germinating seeds, including Indigenous plants in the Spring, and then adding them to the community garden. These initiatives incorporate Aboriginal perspectives on ESL in addition to having students participate in actions for learning (Babiuk et al., 2010). Building an aquaponics tank with students was another idea, which leads to an understanding of how nature sustains us (Golemen

\(^1\) Horizons Leadership Conference is a one day conference to build student leadership capacity in order to improve schools and communities, hosted by the Canadian Student Leadership Association.
et al., 2012). Another educator suggested learning locally within the community. For example, one teacher told the story of how when out on a nature walk with students, an oil slick was discovered in a local pond, which led to discussions around urban pollution (Kozak & Elliott, 2014). Such teachable moments could be the springboard for teacher-guided student action projects that could promote the sense of empowerment and model solutions that potentially could help students envision their role in changing the status quo.

Establishing partnerships. Also evident from the results was how teachers could benefit from partnerships in facilitating sustainability topics with a diverse group of learners (Focus Group Transcripts, 2015). Educators in the Focus Group and Matrix Interview emphasized the untapped resource of the many seniors who live around the school who could be an important source for partnership and collaboration on ESL initiatives. One example of this was a collaboration between teens and seniors in a bridging-the-gap day, where seniors were able to connect to youth and learn about technology from teens; they built relationships, explored online resources and had lunch together. This initiative aligns well to the strategies of acting on learning and real-world connections suggested in the literature (Kozak, Elliott, 2014).

Teachers also acknowledged the numerous other partnerships that could be helpful in collaborations, including members of the Indigenous community, sustainable living organizations, and Government that may offer support documents and learning initiatives. According to Saul (2014), developing meaningful partnerships with members of the Indigenous community are essential in incorporating Aboriginal perspectives into the classroom and building relations and understanding between Treaty people. Lastly, increasing partnerships between teachers within the school would be beneficial to ESL in the integrating learning across subjects or between grades, and in supporting inquiry learning.
Enhancing teacher planning time and training. Teacher and students at this school envision a more sustainable future by greening the school, building curricular connections to ESL, increasing student action projects, and shifting the school culture to be more sustainable. However all of these goals require well planned innovations to achieve transformation. Time, or lack there of, as the case may be, was one of the most cited barriers for teachers in this study to achieve meaningful ESL implementation (Matrix Interview Transcripts, 2015), a finding that corroborates claims in the literature (Freedman Tetrault, 2008). For instance, students wished to have more school-wide conferences to learn about ESL; however, teachers noted that planning such conferences requires time and collaboration. Teachers and students also suggested the need for real-world connections, by having students teach others about sustainability, and establishing partnerships within the community. The results were very thorough in providing specific suggestions from teachers for increasing the time available within the school day to support ESL. One such suggestion from teachers echos the literature by indicating that PD could focus solely on education for sustainability through which all other pedagogy is explored (Babiuk et al., 2010, p. 223).

Governance to create a school culture of sustainable living. The existing culture of the school is dependent upon the sum of its individuals; their attitudes, beliefs, values, perceptions, actions and inactions. Furthermore, the community can shape the culture of a school through its perceptions and relationships with the school. Therefore the students’ and teachers’ hope for a culture of sustainability essentially involves transforming the actions and beliefs of many.

Sterling (2001) advocates for schools to attempt to be democratic and “intrinsically transformational” in shifting the culture of a school (p. 469). Capra (2007) views how
encouraging the sustainable living of many can be brought about through large-scale networking of support and dialogue (p. 13). By inviting many staff and students into this conversation, this research achieved, and supports the grassroots approach that Crane (2013) advocates for in creating sustainable schools. At the most recent Seven Oaks Divisional Day, John Ralston Saul (2015) discussed the importance of educational staff to reflect upon the narrative of the school. By creating a vision and common purpose in creating meaningful change, goals can be within reach. This would be best perceived as taking a reflection-for-action approach through collaboration and dialogue to re-imagine the school future actions (York-Barr, 2006). As suggested by one teacher, once the narrative is understood, re-visiting the school mission may be a logical next step to formalize this intent.

Enrenfeld (2008) criticizes Crane’s views as being difficult to quantify or measure, and often presents the need to govern and strategically plan for sustainability through the domain of Governance, as outlined by the ESD Leadership Council (2013). The findings of this study suggest that students’ and teachers’ views validate both Crane and Enrenfeld’s views for creating change. On one hand, the student exit slips responses demonstrated individual change and learning from ESL. Teachers also expressed in various ways how individual learning and collaboration with others was important. But there were also some who echoed Enrenfeld’s views for a more protocol-based approach. One teacher noted that some teachers are already focused on waste-reduction; for example, in the woodshop, little to no waste is generated and all scrap wood is collected and donated. This is an example of reducing footprints in the facilities and operations (ESD Leadership Council, 2013). This does not mean that the school as a whole would not benefit from guiding protocols on waste reduction, recycling of many products and technology related goods, and composting. As seen in the results, teachers provided specific
feedback on governance such as, re-visiting the school mission statement and timetable, long-term planning for sustainability and evaluation, policies for sustainable living, and financial support.

As discussed above, all of these themes were of importance in this study, and were incorporated into recommendations for future actions of the school. It is also important to note that this was only the first cycle of action research, and as the natural evolution and progression of sustainable actions are implemented, further action research should re-assess and evaluate changes within the school culture.
Chapter 6: Conclusions and Recommendations

The findings of this research provide evidence of several current ESL school initiatives that are contributing to sustainable living. These initiatives are a great starting point for further action and demonstrate the commitment and values of staff, students, and administration towards fostering sustainable living. The processes and learning opportunities required in order to be school-wide and transformational in the approach to ESL are diverse but can be achieved if there is resolve to do so.

Goals Achieved

This study set out to achieve three goals. The first goal was to begin an inquiry as to what transformations should occur in the school. In going back to my chosen methodology, I had set out to begin this inquiry by doing one complete action research cycle. The phases and goals achieved through the interpretation of the data are summarized in Table 5, drawing upon the six phases in the Action Research Cycle (previously seen in Figure 3).

Table 5
Goals Achieved in Each Phase of the Action Research Cycle

<table>
<thead>
<tr>
<th>Phases</th>
<th>Goals Achieved in this Study</th>
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<tr>
<td>1. Where are we now?</td>
<td>This study examined the current school culture through the Teacher Sustainability Survey and the Student Sustainable Living Values Survey.</td>
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<tr>
<td>2. Where do we want to be?</td>
<td>The goal in this study was to lead our school to be school-wide in our transformation towards ESL.</td>
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<tr>
<td>3. How will we get there?</td>
<td>This research asked two research questions, which were</td>
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The second goal in this research was to start a meaningful participatory dialogue with teachers and students surrounding ESL that might not have occurred otherwise. The teacher dialogue was really exemplified in the Matrix Interview and Focus Group. One student remarked, “[t]hank you for creating this survey and opening the doors for students’ opinions!” (Student Sustainable Living Values Survey Responses, 2015). Students were able to have a voice in this study through their contributions to the student survey and exit slips.

Lastly, this research achieved the goal of profiling existing initiatives such as the Equity Conference and its contributions to ESL and also assessing its effectiveness in transforming values. The Equity Conference Student Reflection Exit Slips were instrumental in achieving this goal. I was also able to profile other existing school initiatives in ESL by comparing initiatives
highlighted in the Matrix Interview with current strategies outlined in exemplars of pedagogical practices of ESL in the literature.

**Central Recommendations for ESL**

The following five key recommendations have been carefully considered, arising from the analysis of students’ and teachers’ contributions to this study, and corroborated by findings from a review of the literature on ESL pedagogy. The five recommendations correspond to four of the SEdA domains (ESD Leadership Council, 2013). It should be noted that the domain of Facilities and Operations has been incorporated into the domain of Governance.

**Recommendation for curriculum, teaching and learning.** The consensus from both teachers and students surveyed at the school is that ESL should be a “central educational concern” within the pedagogy of the school (Babiuk et al., 2010, p. 217). All teachers surveyed felt that sustainability education affects students’ decisions in the future, and also believed that participatory learning and teamwork can improve students’ learning standards. The majority of students (97%) agreed that the thoughts and actions of the current generation would affect future generations. Currently 74% of students surveyed at the school have learned about sustainability topics in classes during the last semester, however 90% of students would like sustainability as a subject matter to be more embedded into student learning. Based on the results from the teachers in focus group discussions, pedagogy for ESL should be well planned out in order to facilitate the complexities of topics. This can be done through cross-grade projects, or by having students engage in research and present their findings (Babiuk et al., 2010). School-wide learning initiatives are also important, as the majority of students indicated that conferences that address important sustainability topics are of value.
This call for incorporating sustainability pedagogy has been discussed at length by many who have presented exemplar models in terms of how to implement ESL into schools (Babiuk et al., 2010; ESD Leadership Council, 2013; Goleman et al., 2012; Kozak & Elliott, 2014). Many have researched the importance of ESL and emphasize that educational leadership for sustainability is crucial in the 21st Century (Babiuk et al., 2010; Capra, 2007; Davies, 2009; Eisenstein, 2011; Giesbrecht & Singh, 2010; Hopkins, 2011; Hopkins & McKeown, 2002; Lovelock, 2009; Suzuki, 2013; Tilbury, 2013; UNESCO, 2002; Wals, 2007). The first central recommendation focuses on the important need to involve all staff and students in making a school-wide transformation by advancing current practice in curriculum, teaching, and learning.

Recommendation: Empower students and staff to be involved in sustainable solutions by gaining knowledge, skills, and attitudes on sustainable living through planning and implementing sustainable living initiatives. Examples include:

- Encourage and provide incentives for students to be involved in sustainable action projects.
- Integrate learning across subjects or between grades and support inquiry learning.
- Facilitate outdoor and place-based learning, where the local community becomes the classroom.
- Cultivate Aboriginal perspectives of sustainable living while involving the Indigenous community.

Recommendations for building capacity. Based on data collected from participants, even teachers who have a good understanding of sustainability vary widely in their confidence of teaching for sustainability. This study also acknowledged that teachers’ understanding of ESL was on a continuum and therefore school PD should focus on different learning opportunities
based on prior knowledge and experience (Babiuk et al., 2010, p. 104). All teachers surveyed mentioned that the knowledge, skills and values of sustainable development learned from PD can be used in their daily lives and teaching. PD opportunities should look at ways of “inviting people into that conversation, rather than creating judgment” (Focus Group Transcripts, 2015).

It was suggested that PD could include different learning opportunities available to staff based on existing knowledge. Where some teachers may want to take the time to learn about sustainable living and gain knowledge of certain issues, others could have more of a time-based, rather than a curriculum-based PD, in order to plan, develop, and collaborate on projects around an ESL theme.

As seen in the results, teaching sustainability as a body of knowledge through raising awareness of how choices impact sustainable living, and building curricular connections to ESL are currently the most common approaches teachers use at this school. Yet when teachers and students were asked about how to best foster sustainability in the future, both suggested implementing meaningful sustainable action projects. The most cited barrier from teachers was not having enough time for planning and collaborating, as well as the time required to instruct already overloaded curricula. One consequence of overloaded curriculum is that, “[if] ESD is seen as another, separate part of the curriculum, ESD is seen as an add-on. Teachers will not be able to do it all if they see ESD as an add-on” (Babiuk et al., 2010, p. 107). In response to this demand, many of the ESL initiatives and projects have moved out of the classroom and into various clubs; “ESD is not being integrated into the official curriculum” (Babiuk et al., 2010, p. 109). In future curriculum development by the province, an inquiry-based curriculum would be better suited for teachers to meaningfully incorporate ESL action projects, as noted by scholars such as McKernan (2008).
In order to advance ESL pedagogy, there are two forms of capacity building that can take place at the school level. The first is by establishing that all professional development has a focus on sustainability, through which all other pedagogy is explored (Babiuk et al., 2010, p. 223). The second way is to re-examine the school timetable to accommodate sustainable initiatives and schedule meaningful time for planning, implementing and promoting initiatives. This would address head on the biggest barrier currently facing all ESL initiatives, that there is simply not enough time for meaningful experiential learning. A Manitoba assistant superintendent gave the following thoughts on this topic: a challenge for ESL is that teachers require regular scheduled time for ESL initiatives to think critically about their practice and evaluate their work in ESL repeatedly over the course of the year (Babiuk et al., 2010, p. 112). In order to address this, students were dismissed early one day a week, allowing teachers to collaborate in this way.

**Recommendation:** Build the capacity of educators with all professional development focusing on education for sustainability through which all other pedagogy is explored. Examples include:

- Sustainability PD should have two goals: To gain a depth of knowledge on ESL; and to provide an opportunity to plan, develop and collaborate with others in order to facilitate excellence in teaching of complex topics.

**Recommendation:** Revisit the school timetable to accommodate sustainable living initiatives and build-in meaningful time for planning, implementation, and promoting initiatives. Examples include:

- Create common staff and student meeting time within the schedule for the purpose of ESL.
• Incorporate ESL themes into period days and increase whole-school learning opportunities.

• Support ESL initiatives within Teacher Advisory Groups (TAG).

• Four-period days rather than five-period days.

**Recommendation on building partnerships.** All the four exemplars in ESL pedagogy documented in this study referred to the need for forming meaningful partnerships within the community. The terminology and focus varied slightly between each exemplar, however partnerships were an integral part to incite transformation at the school-wide level. The varying terminology is as follows: School-University Partnership for Teacher Development focuses on the need for continuous PD for teachers on ESL throughout their careers (Babiuk et al., 2010, p. 218). The strategy of Real-World Connections emphasizes sourcing information from various groups, working with community partners and allowing students to communicate to audiences (Kozak & Elliott, 2014, p. 6). Embracing Sustainable Living as Community refers more to the community of life and maintaining partnerships with all life forms as a way through which we understand that we are not separate from, but rather, are a part of nature (Goleman et al., 2012, p. 10). Lastly, SEdA points to the domain of Partnerships to engage the broader community in ESL and to collaborate with existing experts (ESD Leadership Council, 2013, p. 5).

**Recommendation: Increasing community involvement and building meaningful partnerships for ESL initiatives.** Potential partnerships include:

• Seniors within our community.

• The Indigenous community.

• K.C.C. Primary School, our sister school in Uganda.

• Government and organizations that provide support documents for learning initiatives.
• Industry that offers grants and supports to develop ESL projects.

**Recommendation for governance.** ESD Leadership Council (2013) and Babiuk et al. (2010) both see the need for whole school systemic change. Changing the discourse in schools into one of sustainability requires governance and the promotion of ESL through a systems approach in terms of advancing policy and shifting philosophy. Crane (2013) advocates for a grass-roots approach to sustainability. However, supportive governance can greatly aid in creating supports, funds and policies to support grass-roots initiatives (ESD Leadership Council, 2013). The second edition of The Manitoba Guide for Sustainable Schools recommends the formation of a School Sustainability Plan (SSP) team to help with long term school planning (Swayze, Buckler & MacDiarmid, 2014). Such a team may be useful in including all stakeholders into the governance of ESL.

During the Matrix Interview, the second most frequent topic of discussion was the need to promote ESL as a school culture. Educators also pointed to the importance of increasing student voice when it comes to governance on ESL issues. “Student voice is powerful and creates strong connections, we need to promote how to use it properly” (Matrix Interview Transcripts, 2015). Student voice could also be a way of promoting ESL in the school. Within the domain of governance, I also have included the recommendations for the facilities and operations, as policy and implementation surrounding the physical building requires a governing body to make these decisions.
Recommendation: Advance sustainable living philosophy school-wide as the central educational responsibility, in which to develop a new school mission statement as well as advancing policy, operations, and implementation of supports. Examples include:

- Re-envision and promote a mission statement that communicates sustainability as the central concern for the school.
- Establish ESL as the central goal for the school plan, in order to reassess and report on goals yearly.
- Consider the formation of a School Sustainability Plan (SSP) team consisting of not only staff but students as well, to oversee the school plan.
- Develop policies at the school that focus on reducing the school’s ecological footprint, increasing student health and wellbeing, as well as creating a culture of sustainability in the local and global contexts.

Expected Outcomes of Recommendations

There have been five recommendations made for school-wide transformation for sustainable living. Of these, I anticipate several outcomes if implemented; these are presented in Table 6. The importance of anticipating expected results and describing indicators of change comes from SSP template described in the Manitoba Guide to Sustainable Schools and is backed by reflection-for-action pedagogy (Swayze et al., 2014; York-Barr, 2006).
### Expected Outcomes of Recommendations

**Recommendation on Curriculum, Teaching, and Learning:**

*Empower students and staff to be involved in sustainable solutions by gaining knowledge, skills, and attitudes on sustainable living through planning and implementing sustainable living initiatives.*

<table>
<thead>
<tr>
<th>Expected Outcomes (Indicators of Change)</th>
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<tr>
<td>• Increase in the number of students involved in sustainable action projects.</td>
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<td>• Students learning outdoors and in the community.</td>
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<td>• Teachers involved in integrated learning across subjects and between grades.</td>
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<tr>
<td>• Students have an understanding of Aboriginal perspectives and the school is actively engaged in Indigenous cultural teachings such as language, ecology and respect for nature.</td>
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<tr>
<td>• The school is a hub of sustainable learning for the community. Students educate others on their learning and report on their findings.</td>
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<tr>
<td>• Students help to maintain and clean the community environment.</td>
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<tr>
<td>• Increase in the number of classrooms that show evidence of sustainability action projects such as vermi-composts, vertical gardens, and solar panels.</td>
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<tr>
<td>• All curriculum subject areas are integrating ESL in meaningful ways.</td>
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**Recommendations on Building Capacity:**

*Build the capacity of educators with all professional development focusing on education for sustainability through which all other pedagogy is explored.*

*Revisit the school timetable to accommodate sustainable initiatives and meaningful time for planning, implementation, and promoting initiatives.*

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<tr>
<th>Expected Outcomes (Indicators of Change)</th>
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<tr>
<td>• Students are involved in social justice initiatives, community involvement and environmental stewardship.</td>
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<td>• Students have concern and care for addressing local and global injustice, and care for the wellbeing of others.</td>
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<tr>
<td>• Staff and students share a vision for sustainable living and understand that this incorporates environmental and socio-economic indicators of wellness.</td>
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<tr>
<td>• Teachers and students meet regularly to co-plan and carry out ESL initiatives.</td>
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<td>• All PD focuses on building knowledge, skills, and values of sustainable living.</td>
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<td>• Period days become school-wide learning opportunities centered on themes related to sustainable living.</td>
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<tr>
<td>• Teacher Advisory Groups have a clear purpose and strive to build relationships and lifelong skills through student action projects.</td>
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**Recommendation for Establishing Partnerships:**

*Increasing community involvement and building meaningful partnerships for ESL initiatives.*

| Expected Outcomes (Indicators of Change) |  
|--------------------------------------|---|
| Seniors are regularly working with students in and out of classrooms, building relationships between the school and community. |  
| Students meet many Indigenous community members, hear stories and learn teachings from elders. |  
| Students are involved with initiatives at the local, national and global level through various partnerships. |  
| Students are learning from members of the community and are being introduced to various external organizations and businesses involved in sustainability. |  
| Students know how to be politically engaged, and feel compelled to voice their opinion on issues they care about. |
**Recommendation on Governance:**

*Advance sustainable living philosophy school-wide as the central educational responsibility, in which to develop a new school mission statement as well as advancing policy, operations, and implementation of supports.*

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<tr>
<th>Expected Outcomes</th>
<th>Indicators of Change</th>
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<td></td>
<td>• The school mission statement reflects the outcomes achieved through the implementation of the five core recommendations.</td>
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<td>• An ESL school plan is in place and was developed using a SSP team consisting of staff and students.</td>
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<td>• There is an increase in numbers of students and staff who are commuting, using re-usable water bottle/mugs, composting, and reducing waste.</td>
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<tr>
<td></td>
<td>• The cafeteria is praised for its healthy and local food options. Students have incentives to bring their own re-usable containers to purchase food.</td>
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<tr>
<td></td>
<td>• The breakfast program offers a complimentary healthy breakfast options to all students.</td>
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<td></td>
<td>• Grade 9 Orientation is themed around our school as a sustainable school and communicates how we envision that students can play a role in transforming the school.</td>
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<td></td>
<td>• School clothing and gear is all sweatshop free and many products purchased for the school are recognized for being fair-trade.</td>
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<td>• There is a diversity of teaching staff within the school.</td>
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Looking Ahead

This collaborative inquiry is only the beginning of initiating change at the school for sustainable living. This study completed one full cycle of action research, but should be considered only a starting point of many cycles. As recommendations are implemented, there is a need to reflect, evaluate, and participate on future actions. The task of ESL is ongoing, as school cultures change over time and bring in new students with new perspectives.

Beyond this study, and after I have completed my Masters of Education, I will continue to practice and reflect on excellence in sustainability education. My hope is that there will be a shift where ESL becomes commonplace in schools globally. I will continue to collaborate with staff and students on planning period days and conferences that are meaningful in inspiring students towards sustainable living. I also hope to build on student voice within the SJC as well as to provide opportunities for students to assume leadership roles in educating others. An area that continues to challenge me is how to master the art of seamlessly integrating ESL and Aboriginal perspectives into all curricula, rather than teaching a series of lessons, a unit of study, or an inquiry project. Hopefully collaborating with others will provide insights into how to best achieve this.

Coda

This research comprises my Master’s thesis as part of the Masters of Education program, and I hope that the findings from this study are further implemented in our school. There should be an acknowledgement that the five sustainability recommendations developed in this participatory action research are fluid, and constantly open to further critical reflection and changes. With time, the hope is that the sustainability plan will be embodied by the members of the school community, through their values, actions, and life choices.
We owe it to generations to come to offer an excellent education that advances our capacities for sustainable living. It is important to reflect on the purpose of education for it can quickly turn into serving the economic system or the Eurocentric portion of society rather than valuing the rights of all and the environment. As the Native American proverb states, “we did not inherit the Earth from our ancestors. We are borrowing it from our children” (Monaghan, 2012, p. 45). It is a simple yet powerful statement that speaks to the importance of our legacy as educators.

As a final thought, school-wide transformation for sustainability requires the collective minds and actions of many. Encouraging democracy in ESL curriculum is a much more successful approach than to implement policies and procedures from a top-down systems approach, as it engages the people who matter most in creating meaningful change (Crane, Viswanathan & Whitelaw, 2013). In the words of Margaret Mead, “[n]ever doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has” (Keys, 1982, p. 79). I think the promise for a sustainable future lies in cultivating leadership from all walks of life through a grassroots approach. Teachers have a tremendous role to play in ESL, but so do students, community members, politicians, administrators, policy makers, workers, and all citizens for that matter.

There is no one person leading the movement towards transforming society’s culture into one focused on the wellbeing for all. Instead, we see a decentralized leadership emerging. Schools are the most equipped facilities that communities have to address the wide range of emerging challenges of the 21st century. The key is in sharing this innovation between the many leaders decentralized around the planet, and to engage all leaders in collaboration for the common good. I hope that my educational research is a small contribution to this movement. A
sustainable future filled with the joys of wellbeing and healthy environment is within sight if we harness the opportunities to do so.
References


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International Institute for Sustainable Development (IISD) and Manitoba Education (n.d.).

Guide for Sustainable Schools in Manitoba. Retrieved from


/full/10.1080/02602930701293231#abstract


Appendix A  
ECO-Globe Schools Criteria  
Submission Chart for the ACTION Level

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>In order to plan and guide ESD initiatives throughout the year, the school has an action plan with specific goals, timelines and descriptors of staff and student responsibilities.</td>
<td>1. Describe your school’s ESD action plan.</td>
</tr>
</tbody>
</table>

School Division: Seven Oaks School Division

School: West Kildonan Collegiate

Date: June 1, 2013

Completed by: Heather Eckton, other contributors have been removed for confidentiality purposes.

Title: Teachers and Vice Principal (Social Justice Club members includes staff and students)

Action – A school community at the action level includes ESD awareness and is characterized by a school community that practices ongoing sustainability.

Fill in the chart and attach documents as necessary to explain how your school fulfills all of the following criteria for the Action level.
EDUCATION FOR SUSTAINABLE LIVING

**ESD Action Plan:**
West Kildonan Collegiate believes in collaborating as a community of learners working together towards ESD. We believe that we can unite to change any adversities facing our school or the broader community. The environmental and social justice movement has always had power in numbers, where unity & solidarity can lead to significant & meaningful change.

Our school has a Social Justice Club committee comprised of students, teachers, custodial staff, educational assistants and the support of administration. Our club's mission statement is to encompass the principles of ESD while Making a Difference, One Project at a Time. At the beginning of each school year the Social Justice Club maps out a variety of ESD initiatives for the year. There are projects that are yearly events such as the 30 Hour Famine, Food Drives for Winnipeg Harvest and Habitat for Humanity. We also set goals around new student initiated projects, and seek out opportunities to attend a wide range of conferences related to ESD. Each year our club membership grows as more students and staff realize the importance of sustainable living within our school and broader community.

**ESD School Plan for 2013-2014:**
School priority: Continue to develop awareness of, and actions towards Education for Sustainable Development.

**Expected Outcomes for 2013-2014:**
- School would like to reach its goal of becoming an Eco-Globe school at the Action level.
- Increased use of composting, recycling and water bottle filling stations.
- Increase Community awareness of what the school is doing to promote ESD.

**Indicators of ESD:**
Action Level Goals:
- School culture has been transformed by an active commitment to ESD
- School infrastructure has changed to implement ESD principles
- School wide activities are governed by ESD principles
- Students to be more aware of the school's Eco-Globe status level
- Website for Social Justice Club

**Strategies:**
- Begin to use compostable cutlery for school events and encourage the Café to do the same
- Improve signage and access to composting bins in the Commons
- Students in Social Justice to help promote use of composting and E waste bins at assemblies, gr. 9 orientation, new student orientation, and video for TV in Commons
- Garbage Free Lunch Day
- Teachers to bring own mug to staff meetings
- Include updates from students about Social Justice club activities at staff meetings
- Teacher developing a website for the school that various groups can use to

<table>
<thead>
<tr>
<th>School priority: Continue to develop awareness of, and actions towards Education for Sustainable Development.</th>
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<tbody>
<tr>
<td><strong>Expected Outcomes for 2013-2014:</strong></td>
</tr>
<tr>
<td>➢ School would like to reach its goal of becoming an Eco-Globe school at the Action level.</td>
</tr>
<tr>
<td>➢ Increased use of composting, recycling and water bottle filling stations.</td>
</tr>
<tr>
<td>➢ Increase Community awareness of what the school is doing to promote ESD.</td>
</tr>
<tr>
<td><strong>Indicators of ESD:</strong></td>
</tr>
<tr>
<td>Action Level Goals:</td>
</tr>
<tr>
<td>• School culture has been transformed by an active commitment to ESD</td>
</tr>
<tr>
<td>• School infrastructure has changed to implement ESD principles</td>
</tr>
<tr>
<td>• School wide activities are governed by ESD principles</td>
</tr>
<tr>
<td>• Students to be more aware of the school's Eco-Globe status level</td>
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<tr>
<td>• Website for Social Justice Club</td>
</tr>
<tr>
<td><strong>Strategies:</strong></td>
</tr>
<tr>
<td>➢ Begin to use compostable cutlery for school events and encourage the Café to do the same</td>
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</tr>
<tr>
<td>➢ Include updates from students about Social Justice club activities at staff meetings</td>
</tr>
<tr>
<td>➢ Teacher developing a website for the school that various groups can use to</td>
</tr>
</tbody>
</table>
share what they have been working on or have accomplished

- Social Justice articles from students in the school newsletter
- Inform Community about what we are doing at events such as Community Christmas Dinner, Grad Community BBQ
- Encourage the use of Fair Trade suppliers for school clothing

**Data Collection:**

- Staff meeting agenda and minutes
- Photos and newsletter articles
- Website information
- Decrease in garbage, increase in compostable materials collected
- Clothing purchased with origin in mind

<table>
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<tr>
<th>Descriptor</th>
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<tbody>
<tr>
<td>The entire school community; administration, support staff, teachers, students and parents can all be involved in the planning and delivery of ESD initiatives.</td>
<td>2. Describe how ESD responsibilities are shared among members of the school community.</td>
</tr>
</tbody>
</table>

**ESD responsibilities and initiatives:**

The number of students interested in and involved in the Social Justice Club has increased dramatically. As a result, sub-groups were formed so student and staff could work together with the community and focus on specific areas in smaller groups.

**Environmental Club:** Tall grass prairie garden is one of our first examples of a school wide example of ESD since moving to our new location at 101 Ridgecrest is our tall grass prairie garden. This project was student initiated by a group of kids who care about the environment. We relocated to our new building in 2008, and in 2009 the Environmental Awareness Club decided they wanted to get involved with landscaping our new schoolyard. The first step was for students to meet with the landscape architect to discuss their ideas. Students decided they wanted to build a garden for our school. After discussions, they reached a consensus to feature native Manitoba species, as these plants would be able to survive the prairies harsh climate they had become well adapted to. They proposed their plan, wrote up a grant, and by the spring we had a plot of land that was ready to be planted. Our garden not only is a prime example of some of our beautiful Manitoba species of wildflowers, but it also encourages many species of pollinators such as Monarch butterflies to visit our garden from year to year.

**Rainbow Alliance:** The Rainbow Alliance is a club that celebrates diversity and promotes equality for all genders and orientations. Meetings provide a welcoming space for LGBTQ* and Allied students to socialize, educate themselves and others, and plan awareness-raising events such as Ally Week, Day of Pink, Day of Silence, Transgender Day of Remembrance and Pride Week. The Rainbow Alliance holds monthly movie nights to examine portrayals of LGBTQ* characters in film. This year, two students and two staff members from the Rainbow Alliance attended the OUTShine conference in Toronto.

**Animal Rights Group:** West Kildonan Collegiate initiated an Animal Rights group in 2012. The group started because of a desire to be of help to our fellow beings who
cannot advocate for themselves. In the Animal Rights group our goal is to learn about and build an awareness of different plights that both domestic and wild animals face. We hope to make a difference through education and fund-raising campaigns.

**Anti-Bullying Group:** This year, West Kildonan Collegiate started an anti-bullying club called "A bullying free zone" that aims at bringing awareness to our students about bullying so that we make sure that we maintain the respectful and safe learning environment that we have.

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<th>Descriptor</th>
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<tr>
<td>Students, staff and members of the community all participate in maintaining the school grounds and facilities and respect the sustainability guidelines set out by the school community.</td>
<td>3. Describe student, staff and local community involvement in the use and care of the school grounds and facility.</td>
</tr>
</tbody>
</table>

In the spring of 2012, students did a waste audit to determine the amount of recyclable and compostable waste in our garbage output. The findings were then presented at a staff meeting. From this audit, certain changes have been implemented at our school with the support of staff, administration and the school division. Our composting programs aims to reduce the amount of waste produced by our facility but also to educate the community as a whole about waste reduction.

**Composting Initiatives:**
- Introduction of composting bins and divisional pick up for composting to the Biovator (large scale composter).
- Increased number of recycling containers for paper, plastic bottles and electronics.
- Teachers have noticed an improvement in the use of recycling bins by students in their classrooms.
- A student volunteer has been gathering the recyclables from the classrooms, which has helped them to be used more effectively.
- Added an additional water bottle filling station resulting in having saved the number of plastic water bottles from being used and increasing student and staff water intake.
- We invite parents and community to bring in their e-waste for recycling program called Think Recycle.

**West Kildonan Community Garden Committee:** The gardening committee has started the planning process for Community Gardens in conjunction with community members and the River Ridge Senior’s Residence on the school grounds.

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<tr>
<td>A school at the action level strives to incorporate elements of environment, economy and human health and well-being in the development of their initiatives and school wide projects.</td>
<td>4. Describe how school wide initiatives and projects integrate environmental, economic and social themes. Describe in detail one example.</td>
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</table>
The West Kildonan Collegiate Social Justice Club is an excellent example of students coming together to raise awareness and take action of both ecological and ethical implications of our actions locally and globally. Several of our staff members help to facilitate the activities of the club, but for the most part the social justice club is student run and projects are student initiated. Even though we are under the heading of social justice, we continue to examine a wide range of topics related to the three pillars of sustainability. To name a few causes we care about; homelessness, climate change, fair trade, human trafficking, poverty, sustainable development, democratic process, letter writing campaigns, recycling, hunger and famine, waste reduction, child soldiers, international aid, and human rights. Here are three examples of school wide initiatives from the 2012-2013 school year.

**WKC Social Justice Club Talent Show:** In February of this year, student leaders from the MARLY conferences decided to put on a school wide Talent Show Fundraiser to raise funds for Because I’m a Girl. **Because I am a Girl** is a global initiative to end gender inequality, promote girls’ rights and lift millions of girls – and everyone around them – out of poverty. The talent show was a huge success, not only did we raise money for a great cause, but we showcased the diversity of student talent at our school.

**Change for Chomper:** Together with Manitoba Mutts Dog Rescue Centre, West Kildonan Collegiate helped raise funds for a loving puppy named Chomper. Chomper came into care when he was only 6 weeks old and he needed medical attention because he had demodex mange. Our Animal Rights group raised monies through a bake sale (human and dog treats) to help care for Chomper and provide him the much needed medical attention that he needed. There is a happy ending…Chomper found his forever home and became known as Dexter.

**30 Hour Famine:** This year a grade 11 student took the lead on planning, organizing and motivating students to join the 30 Hour Famine on April 12-13. Students and staff participated in the famine to raise awareness on access to food, to experience hunger first hand, and to raise money for Education in Darfur. Students participated in activities after school such as the World Trade Game, Yoga and Qigong, Arts and Crafts as well as slept in the school gym overnight. The following morning when the 30 hours were over, students were served what is known as a refugee breakfast consisting of Cornmeal, salt and water.

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<tr>
<td>ESD is supported by an interdisciplinary and collaborative approach which will require planning time, resources and access to professional development.</td>
<td>5. Describe how staff time has been allocated to ESD professional development and interdisciplinary planning.</td>
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</tbody>
</table>

**Seven Oaks Divisional PD Day:**
This year in Seven Oaks School Division, we had a divisional professional development day on Sustainable Development featuring guest speaker and author Wade Davis. The West Kildonan Collegiate Social Justice Club members that are also part of our divisional ESD club known as Unite to Change were invited to create a video that features the numerous ESD projects going on in our school division. This video highlights how various staff are supported in critical pedagogy initiatives throughout the various schools.

Please check out our video on YouTube:
“Unite to Change 7 Oaks School Division”
https://www.youtube.com/watch?v=BSSfheJq0JE

Focus Group Meetings:
West Kildonan Collegiate also has time set aside in our school timetable for staff of the Social Justice Club to meet for an hour on select Wednesdays at the start of the day. This time known as Focus Group, the focus of our meetings being strategic planning for the next event or initiative.

Inner City Science Centre:
The Inner City Science Centre (ICSC) is located at 45 Flora Avenue in Niji Mahkwa, a K-8 School, where the entire student body consists of Aboriginal inner city youth. This $150,000 state of the art science centre was the dream of Dr. Francis Amara when he and some colleagues were reflecting on how to best conduct outreach programs for the Faculty of Medicine in the Inner City and beyond. Currently there are 7 educators from our school division on educational leave with the ICSC. We are from both middle and senior years, representing various schools. Through educational leave funding we have a goal of completing a total of 6 workshops in order to become ICSC certified facilitators.

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<tr>
<td>A school committed to the action level of ESD cultivates supportive and ongoing partnerships with community groups or organizations.</td>
<td>6. Provide a detailed description of a partnership the school is involved in with an organization or community group.</td>
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</table>

West Kildonan Collegiate’s Social Justice Club has a wide range of community partnerships, which help to strengthen our outreach and knowledge of ESD.

MARLY: This is the second year that students from West Kildonan have participated in MARLY student leadership conferences which is in partnership with the Manitoba Association of Rights and Liberties. This year the conferences focused on Aboriginal Rights. As part of this initiative, students must work on a ESD project and present it at the MARLY Gala night in April.

We Day: This year 45 students from our school attended WE Day at the MTS centre and were inspired by keynote speakers such as Mikhail Gorbachev, Justice Sinclair and Hannah Taylor. Following We Day, students and staff organized Halloween for Hunger in October, 2012 and donated numerous hampers of food to Winnipeg Harvest.

Unite to Change (UTC): There are several students who are members of Unite to Change, our divisional ESD committee. This year four of our students help with the 5th Annual UTC Conference at Providence College in Otterburne, Manitoba. Our students helped to create the artifact for the day on the theme of locally grown food.

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<tr>
<td>ESD principles are interdisciplinary in nature, therefore a school at the action level will plan and implement cross disciplinary learning experiences.</td>
<td>7. Provide a detailed example of an interdisciplinary learning experience based on ESD principles.</td>
</tr>
</tbody>
</table>
School Structures that allow for an interdisciplinary approach to ESD:

**Period Days:** Period day is an alternative to the traditional timetable model offered at our school. Once a semester, we will have the same class of students for a full day of learning and student engagement. Since environmental education shows up in several curriculums at the high school level, period days allows for valuable field studies within ecosystems. Often students in Biology 40S and Science 20F will travel to Oak Hammock Marsh to participate in their wonderful educational programs specializing in ecological studies. Students sample and test water quality, learn about the biological significance of marshes as aquatic purifiers, and conduct invertebrate sampling in this biologically rich ecosystem. Students extend their learning from the marsh, by testing water quality testing locally by walking down to the Red River behind our school and conducting several tests using the Water Quality Index.

**Internships and Discovery Day:** Students may pursue internships at West Kildonan Collegiate as part of non-traditional learning. This has allowed students to learn hands on about careers and post-secondary education through an interdisciplinary approach. Students interested in ESD may speak to student services regarding possible internship placements related to sustainability. Discovery Day gives each student at our school, at each grade level, the opportunity to spend the day in an enriched and challenging environment, which has been individually selected to appeal uniquely to them. This again allows for students who have a keen interest in ESD to learn more about something of interest to them.

**Volunteer Opportunities (Habitat for Humanity):** Students may choose to participate in one of the various volunteer opportunities offered through our school. One example of this is our yearly Habitat for Humanity House Build. Students learn the value of construction, teamwork and giving back to the community.

**West Kildonan Collegiate Social Justice Club:** The social justice club meets once a week and sometimes more. By being a member of the social justice club, students learn from each other and staff about current events and human rights violations going on in the world. They also have a chance to participate in making a difference and raising awareness around the school.

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<tbody>
<tr>
<td>Action level schools provide many opportunities for students to take an active role in decision making related to ESD learning experiences, initiatives and projects.</td>
<td>8. Describe the role of student voice in ESD decision-making in the school.</td>
</tr>
<tr>
<td>At West Kildonan Collegiate, all the activities and initiatives in ESD that we take are entirely student driven. Students take the leadership roles in facilitating ESD programs. They take full control in the decision making of all the phases towards achieving ESD in the school starting from the initiation and planning phases of ESD programs until their successful completion.</td>
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</tbody>
</table>
Some of the Staff and Students from the Social Justice Club 2012-2013.

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<tr>
<th>Descriptor</th>
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<tbody>
<tr>
<td>9. Are there any other ESD initiatives that your school has undertaken that have not been reflected in the previous questions? If so, please describe.</td>
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</tbody>
</table>

Conference Attended in 2012-2013
- Unite to Change: 5th Annual Conference at Providence College in Otterburne, Mb (Oct 4)
- WE Day at the MTS Center with Social Justice Club students (Oct 30)
- Sustainability: Educating for ACTion (Nov 15-16)
- Seven Oaks School Division Divisional Day (Nov 26)
- Guest Speaker: Brian Rochat from the Canadian Centre for Diversity (Dec 12)
- Community Christmas Dinner at West Kildonan Collegiate (Dec 12)
- Habitat for Humanity Multi-Home Dedication (Jan 10)
- Open House featuring ESD Clubs/Committees (Feb 28)
- Human Rights Conference at Garden City Collegiate (Mar 13)
- Unite to Change Showcased at Premier’s Innovation Awards Night (Mar 14)
- Curriculum Mapping which allows for ESD interdisciplinary development WK PD (Mar 15)
- Students attended the Assiniboine Park Zoo for a workshop on Biofuels (Mar 19)
- Students toured the new science building at the U of W, which is designed to uphold sustainable practices (Oct 23)
- React to Racism Conference, students lead an artifact creation, University of Winnipeg (Mar 21)
- Day of Pink (Apr 10)
- School Screening of the film “Bully” (Apr 10-11)
- Blood Donor Clinic (Apr 15)
- Curriculum Mapping and Classroom Visits which allows staff to share ESD initiatives, WK PD (Apr 19)
- Peaceful Rally to Legislative Building for No More Blood in Our Cellphones (Apr 22)
- Youth Sustainability Conference at Sisler Highschool (Apr 24)
- Oak Hammock Marsh, Student Workshops on Water Quality Testing and Invertebrate Sampling (Apr 25)
- OUTShine, Staff and students attending Canada’s First National GSA Summit in Toronto (May 17-20)
- Students will be attending the Assiniboine Park Zoo for a workshop on Endangered Species of Animals (May 22)
- Inner City Science Centre: In Province PD Leave 7 Oaks School Board/SOTA Two staff members from WKC are part of this Educational Leave which is a total of 6 days each. (2012-2013)
- Habitat for Humanity House Build (Spring 2013)
Appendix B
Tri-Council Course Certificate on Research Ethics

Certificate of Completion

This document certifies that

Heather Eckton

has completed the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans Course on Research Ethics (TCPS 2: CORE)

Date of Issue: 25 May, 2014
Appendix C
ENREB Approval Certificate

University of Manitoba
Research Ethics and Compliance
Office of the Vice-President (Research and International)

APPROVAL CERTIFICATE

January 30, 2015

TO: Heather Murphy Eckton
Principal Investigator

FROM: Lorna Guse, Chair
Education/Nursing Research Ethics Board (ENREB)

Re: Protocol #E2014:106
“Education for Sustainable Living: Participatory Action Research”

Please be advised that your above-referenced protocol has received human ethics approval by the Education/Nursing Research Ethics Board, which is organized and operates according to the Tri-Council Policy Statement (2). This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- If you have funds pending human ethics approval, please mail/e-mail/fax (261-0325) a copy of this Approval (identifying the related UM Project Number) to the Research Grants Officer in ORS in order to initiate fund setup. (How to find your UM Project Number: http://umanitoba.ca/research/oral/mrt-faq.html#prf)

- If you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba Ethics of Research Involving Humans.


umanitoba.ca/research
Appendix D

Teacher Sustainability Survey of Education for Sustainable Development (ESD)

Heather Murphy Eckton has received permission to ask teachers in this school if they wish to participate in a project related to the school culture of Education for Sustainable Living. Participation is voluntary. If you wish to learn more about this study, please click on the link given below.

Link: ____________________________________________________________

(The information below will show when selecting the above link):

Dear Teacher,

I am inviting you to complete a short survey to find out more about our collective beliefs as a staff in regards to ESD. Please take 10 minutes to complete this survey and indicate if you agree or disagree with the following 19 questions. I am collecting this data as part of my Masters of Education thesis with the University of Manitoba. The survey results will be compiled for part of Participatory Action Research regarding processes and learning opportunities in ESD at our school and will be used towards developing recommendations for processes and learning opportunities for our school. Your answers will be kept confidential.

Sincerely,

Heather Eckton

*Sustainable development is the development that meets the needs of the present without compromising the ability of future generation to meet their own needs.
The World Commission on Environment and Development, Our Common Future (The Brundtland Report), 1987

Educating for Sustainable Development involves working towards a more sustainable way of living by teaching about the environment, human health & wellbeing, and economic equity.

Please indicate whether you agree or disagree with the following 15 statements.
*Survey Adapted from Yang, Lam & Wong (2010)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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<tbody>
<tr>
<td><strong>Part 1: Relevance of ESD to Daily Life</strong></td>
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<tr>
<td>1. I feel I have a good understanding of education for sustainable development (ESD).</td>
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<tr>
<td>2. Teachers should use the teaching resources offered by the province to conduct education for sustainable development.</td>
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<tr>
<td>3. The education for sustainable development that students</td>
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learn in schools affects their future decision-making ability.

4. Participating in international and provincial education programs for sustainable development is beneficial to the students’ studies.

5. Teachers should encourage students to establish a connection to their personal lives with the global and environment issues.

6. The knowledge, skills, and values of sustainable development learned from professional development can be used in our daily lives and teaching.

7. The social and cultural backgrounds of my students should be considered when establishing the contents of education for sustainable development.

**Part 2: Students’ need in the future**

8. The contents of education for sustainable development are rich and complex. Students should be allowed to choose the topics of study according to their interests.

9. Students should be able to self-manage their learning.

10. Students should have the right to make suggestions and decisions on matters concerning their schools’ syllabus and development.

11. Teaching controversial environmental, economic, and social justice issues can help students develop their critical-thinking ability.

**Part 3: Integrated teaching**

12. Teachers should incorporate topics related to Indigenous knowledge and aboriginal perspectives.

13. I feel that Winnipeg is inclusive of all races.

14. Participatory learning and teamwork can improve students’ learning standards.

15. All teaching measures have their own strengths and limitations, but student involved in sustainability action projects are more useful in the learning of sustainable development.

**Part 4: ESD in Current Teaching Practices**

16. I currently incorporate ESD in my teaching.

17. The curriculum(s) I teach have ESD topics embedded in the curriculum.

**Part B: Teacher Attitude Survey Continued**

Open Ended Questions:

1. What do you envision for our school’s future in order to be more sustainable?

2. How do you incorporate ESD into your practice? Any other insights?
Appendix E
Student Sustainable Living Values Survey

Dear students,

I am inviting you to complete a short survey to find out more about our collective values of the school community regarding sustainable living. Please, take 10 minutes to complete this survey and indicate if you agree of disagree with the following 18 questions. I am collecting this data as part of my Masters of Education thesis with the University of Manitoba. All responses used will be kept anonymous and confidential. The results will be used in developing recommendations for processes and learning opportunities in sustainability at our school.

Sincerely,
Heather Eckton

Student Name: _________________________________

Sustainable development is the development that meets the needs of the present without compromising the ability of future generation to meet their own needs.
The World Commission on Environment and Development, Our Common Future (The Brundtland Report), 1987

Sustainable Development involves working towards a more sustainable way of living by considering the environment, human health & wellbeing, and economic equity.

Please indicate whether you agree or disagree with the following 16 statements.
*Survey Adapted from Yang, Lam & Wong (2010)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</table>

**Part 1: Respect and care for the community of life**

1. When I am in nature, I feel a sense of wellness.

2. Every species in nature has the right to live.

3. We should pass on to our future generations the things that support the long-term prosperity of humankind and the ecological communities.

4. The thoughts and actions of the current generation will affect the future generations.

**Part 2: Ecological integrity**

5. When humans interrupt the force of nature, it usually leads to disasters.

6. The balance of nature is fragile and easily destroyed.

7. Humans are destroying the environment severely.

8. If everything continues to develop according to the current trend, severe ecological disasters will emerge.

9. The human population is approaching the limits of the Earth.
### Part 2: Social and economic justice

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<tr>
<td>10.</td>
<td>In Canada, inequality in social development results in the emergence of poverty.</td>
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<td>11.</td>
<td>To ensure the rapid growth of an economy, development should be the number one priority.</td>
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<tr>
<td>12.</td>
<td>In Canada, everyone has equal access to opportunities regardless of race, gender or culture.</td>
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<tr>
<td>13.</td>
<td>I feel that Winnipeg is inclusive of all races.</td>
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### Part 3: Democracy, nonviolence, and peace

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<tr>
<td>14.</td>
<td>It is necessary to foster, through education, students’ sense of morality and values for their own future development and their choices in life.</td>
</tr>
<tr>
<td>15.</td>
<td>Learning the knowledge, skills, and values that are useful to lifelong learning is an objective of education for sustainable development.</td>
</tr>
</tbody>
</table>

### Part 4: ESD in School Experiences

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>16.</td>
<td>I have learned about sustainable development related topics in my classes this year.</td>
</tr>
<tr>
<td>17.</td>
<td>Sustainable development is an important subject matter for curriculum, and should be more embedded into student learning.</td>
</tr>
</tbody>
</table>

### Part B: Student Values Survey Continued

**Open Ended Questions:**

1. What do you envision for our school’s future in order to be more sustainable? Any other comments/insights?
Matrix Interview and Focus Group Questions

Name: __________________________

Round 1 #: __________
Round 2 #: __________

Interview Matrix Technique (Adapted from Government of Canada, 2002).
*A democratic interviewing technique will be used. Questions were emailed out in advance so that participants can reflect on their experiences prior to the focus group. We will be conducting two rounds of this process.

Interview Procedure

1. Participants are provided with a recording tool for interview questions and are numbered off
   Group A: 1, 2, 3, 4 and Group B: 1, 2, 3, 4.
   During Round 2: Group A: 5, 6, 7, 8 and Group B: 5, 6, 7, 8
2. Participants write down their number and the question that corresponds to their number on
   the recording tool.
3. Participants will participate in six interviews during each round, three of which they will be
   the interviewer, and three of which they will be interviewee.
4. While in the role of interviewer, participants will ask their questions and carefully record the
   responses of their three interviewees in the spaces provided to first round, and use the
   second sheet for the second round. Validate using member checks if and when necessary.
5. There will be six rounds of interviews in total, 3-4 minutes per round. The **bold, italicized number is the interviewer**; the regular number is the interviewee.

Six of the questions have been adapted from Eco-Globe Transformation Level (Manitoba Education, 2014)

**Interview Questions Round 1:**

<table>
<thead>
<tr>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
<th>Round 4</th>
<th>Round 5</th>
<th>Round 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2, 3-4</td>
<td>2-3, 4-1</td>
<td>2-4, 3-1</td>
<td>3-2, 1-4</td>
<td>4-2, 1-3</td>
<td>2-1, 4-3</td>
</tr>
</tbody>
</table>

1. a) How do you incorporate ESD into your practice?
   b) In what ways are these initiatives contributing to sustainable living?
2. Can you think of any current school wide activities that are governed by ESD principles? (For example; period days, school events/fundraisers, purchasing of fair trade equipment/supplies, gardening etc.)

3. How are school initiatives such as the community garden, Social Justice Club and being a LEED silver building ultimately improving our whole-school approach to sustainability?

4. Describe the role of student voice in ESD planning, initiative, decision-making and learning. Do we do enough? Can more be done?

Round 1 Field Notes  Question # ________

First Interview (Field Notes)

Second Interview (Field Notes)

Third Interview (Field Notes)
Interview Questions Round 2:

<table>
<thead>
<tr>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
<th>Round 4</th>
<th>Round 5</th>
<th>Round 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-6, 7-8</td>
<td>6-7, 8-5</td>
<td>6-8, 7-5</td>
<td>7-6, 5-8</td>
<td>8-6, 5-7</td>
<td>6-5, 8-7</td>
</tr>
</tbody>
</table>

5. Do any school-wide activities at our school have a national or global focus?

6. How can we further support teaching and learning in order to put ESD into daily practice?

7. Give examples of how school infrastructure has changed to implement ESD principles (For example; school schedules, breakfast program, water and energy use, waste reduction and composting, etc.).

8. What do you envision for our school’s future in order to be more sustainable? (Goal: Envisioning & cultivating dreams for the school’s action plan).

Round 2 Field Notes  Question # _________

First Interview (Field Notes)

Second Interview (Field Notes)

Third Interview (Field Notes)
Part 2: Focus Group
Sharing of Survey Results

1. What information in the survey results/findings surprises you? What resonated with you? Concerns you most?

2. What staff attitudes and student values emerged that was not expected?

3. What processes and learning opportunities are required to ultimately improve our whole-school approach to sustainability?
Appendix G

Student Reflection Exit Slip

Dear Student,

I am conducting Participatory Action Research in regards to processes and learning opportunities in education for sustainable living at our school. Thank you for choosing to be a part of this research; your responses are greatly appreciated. I am collecting this data as part of my Masters of Education thesis with the University of Manitoba. Please, take 10 minutes to answer the following 6 questions based on your learning experience. All responses used will be kept confidential.

Sincerely,

Ms. Eckton

1. What did you take away from this experience?

2. How has it changed the way you view this issue (equity)?

3. What are your hopes for the future in regards to this cause?

4. Is there anything you can do to further this cause? Explain.

5. Has learning about this topic changed your values related to sustainability and equity? If so, in what ways have your opinions changed?

6. Are conferences such as this one useful to students at our school? Why or why not?
Equity Conference at West Kildonan Collegiate

When: Tuesday, April 28th 2015

Time: 8:30-3:15 PM

Guest Speakers:

- **Michael Champagne**: Aboriginal Youth Opportunities Founder and leader of “Meet Me At The Bell Tower” anti-violence rally.
- **Jenna Wirch**: Youth Engagement Coordinator for Aboriginal Youth Opportunities (AYO).
- **Nancy Macdonald**: Journalist with Maclean’s Magazine.
- **Bernadette Smith**: Community Activist who formed the group "Drag the Red".
- **Lindey Courchene**: EA, CATEP student and leader of the West Kildonan Indigenous group.
- **Kevin Lamoureux**: University of Winnipeg Professor and Seven Oaks resident academic.
- **Mary Courchene**: Elder and residential school survivor.
- **Silent No More**: A partnership between National Post, Centennial College and Maples Collegiate, featured the stories of 12 aboriginal young women. Eight of them will be joining us along with their teacher and Maples VP, Sherri Denysiuk.
- **Diana Bernardo**: Teacher and Equity Educator.
- **Special Guest Performance**: Asham Stompers
Appendix I
Letter to Superintendent

Research Project Title:
Exploring the landscape of one urban high school’s sustainability practices and values.

Principal Investigator:
Heather Murphy Eckton
[School Division Name] Masters Cohort
University of Manitoba

Student Supervisor:
Dr. Lilian Pozzer
Department of Curriculum, Teaching and Learning
University of Manitoba

Room 240, Education Building
71 Curry Place
University of Manitoba
Winnipeg, MB, Canada, R3T 2N2
Tel.: (204) 474-7845
Email: Lillian.Pozzer@umanitoba.ca

February 9, 2015

Dear [Superintendent name],

As a teacher at [school name] enrolled in the Seven Oaks School Division Masters cohort, I would like to request your permission to personally contact [principal name] in writing, to request his consent as principal of [school name] to conduct participatory action research within our school. The purpose of this study is to investigate student values and teacher attitudes regarding sustainability, in addition to profiling the school’s initiatives for their contributions to Education for Sustainable Development (ESD). From this research,
recommendations will be made for future practice, focusing on school processes and learning opportunities to improve the school’s approach to sustainable living.

I would greatly appreciate if you were to consider my request to conduct research at [school name]. I have attached here an authorization form through which you could grant me permission to contact [principal name] at [school name] in regards to this study, if you decide to do so.

I am available to meet with you in person to explain the research in more details or answer any questions or concerns you may have regarding this study. You can also contact me through phone and email (provided above).

**Summary of Research**

The area of research that I am interested in is Education for Sustainable Development (ESD) that leads to transformational change. It is through this interest that I will set out to address the following research questions:

1. How are current school initiatives contributing to sustainable living?
2. What processes and learning opportunities are required to ultimately improve our whole-school approach to sustainability?

Since 2009, the school has offered an extra curricular social justice club run by several staff members and a flexible student membership that varies throughout the year. The club began as a way for staff to intentionally engage students in Education for Sustainability outside of their classes of instruction. There are approximately N=80 students engaged in various student action projects throughout the year. In addition, many staff are using ESD pedagogy within their classes.

Our school is in need of documenting and reflecting upon our current ESD initiatives in order to see if there is a link between processes and outcomes in ESD, and to ultimately improve our whole-school approach to sustainability. By conducting participative action research, a meaningful understanding of ESD will emerge in the context of one Manitoban school and add to the discourse for how to assess the impacts of ESD in schools.

The data collection for this study will involve staff and students between February 2015 and June 2015. Teachers and students will be surveyed online for their attitudes and values related to ESD. In addition, students who are part of an ESD learning experiences and student action projects will be asked to reflect on their experiences through an online student survey and exit slip. Selected teachers will be invited to become part of a matrix interview and focus group where they will be interviewed for their perspectives. I anticipate a total of 30 teachers and 60 students will be part of this study throughout its various phases, and will require approximately 15 minutes of instructional time from participating classrooms.

Special care will be taken to guarantee the confidentiality of participants and data collected in this study. Staff responses are not considered anonymous, as their responses will be linked to their identities by email address. In order to maintain anonymity of student
responses in online surveys to the principal investigator, a research assistant will be responsible for emailing out surveys, and the responses will not be linked to email addresses. In order to maintain confidentiality, I will ensure that all other identifiers will be replaced by pseudonyms. It should be noted that the school where this research is taking place is not considered anonymous, as the principal investigator is a known member of staff. Finally, the staff involved in the focus group will not be considered anonymous, as they will be able to be indentified by others in the group. The size of this focus group is N=8 and all participants will be asked to pledge confidentiality. I will be the only person with access to identifiable data; any data used in dissemination materials (articles, conference presentations and publications, book chapters, books, and final reports and recommendations) will be altered to maintain confidentiality and anonymity (with the exception of the names of those staff members who willingly request their names to be acknowledged). Any printed documents will be stored in a locked cabinet in my office, and only I will see and access non-anonymized documents and data. Digital data will be securely stored on my personal computer on a password-protected hard drive. All data will be shredded after the conclusion of the project in June 2015, including surveys, exit slips and consent and assent forms. All digital data will be deleted by the end of the study as well.

Teachers, students and their parents/guardians will be offered an opportunity to be sent a copy of the final report of this research.

Participation in this research project is completely voluntary. Students and teachers may withdraw from participating at any time, even after having signed the consent and assent forms, with no prejudice or consequence. Participants may do so by contacting me by email, phone or in person. There will be no risk or harm to the participants greater than that which they may experience in the normal conduct of teaching and learning at the school. However, staff participating in the focus group will be alerted to the fact that they may be identified by other members, and therefore, a risk of identification exists. No compensation will be provided to participants. The benefit of participating in this research is that participants may include theirs perspectives for a more sustainable school, which will be used as part of recommendations for future practice.

This research project is not funded. This research has been approved by the Nursing and Education Research Ethics Board of the University of Manitoba (please see attached certificate). Should you or any participant have any concerns or complaints regarding this research, you may contact me or my supervisor at the contact information provided above, or you may contact Mrs. Margaret Bowman, the Human Ethics Research Coordinator at the University of Manitoba (Tel.: 1+204-474-7122; Email: Margaret.Bowman@ad.umanitoba.ca).

With your permission, I would like to contact [principal name], principal of [school name] in writing, to request their permission to invite teachers to participate in this research. I will request to have letters and consent forms distributed to teachers. I will request to speak briefly to students during their classes, should their teachers agree to participate in the research, to present the research and explain students’ participation in it, as well as
answer any questions they may have about this research. I will arrange for teachers’ consent forms, and student assent and parental consent forms to be distributed and collected by a research assistant, in my absence so that potential participants feel free to either assent or refuse to participate, without prejudice. The research assistant will be given a small honorarium for their time and will be a teacher who is not currently in a position of power with students or a graduate student.

Should you wish, I will provide you with a summary of the research findings once this project has been concluded. For this reason, I ask you to kindly provide contact information in the form below.

Thank you very much.
Sincerely,

Heather Murphy Eckton

**Research Project Title:**
Exploring the landscape of one urban high school's sustainability practices and values.

**Principal Investigator:**
Heather Murphy Eckton
[School Division Name] Masters Cohort
University of Manitoba

[School Name]
[Address]
[Contact Information]

**Student Supervisor:**
Dr. Lilian Pozzer
Department of Curriculum, Teaching and Learning
University of Manitoba

Room 240, Education Building
71 Curry Place
University of Manitoba
Winnipeg, MB, Canada, R3T 2N2
Tel.: (204) 474-7845
Email: Lilian.Pozzer@umanitoba.ca

I, [Full Name]____________________________________________________________ signed below, in my capacity as superintendent of [name of school division], authorize Heather Murphy Eckton to contact the principal of [school name] to request permission to conduct the above-mentioned research project at their school. My signature in this authorization form in no
way releases the researcher, sponsors, or involved institutions from their legal and professional responsibilities.

__________________________  ____________________
[Signature]  [Date]

Please, send me a summary of the findings of this research to the following email address:
Appendix J
Letter to Principal

Research Project Title:
Exploring the landscape of one urban high school’s sustainability practices and values.

Principal Investigator:
Heather Murphy Eckton
[School Division Name] Masters Cohort
University of Manitoba

[School Name]
[Address]
[Contact Information]

Student Supervisor:
Dr. Lilian Pozzer
Department of Curriculum, Teaching and Learning
University of Manitoba

Room 240, Education Building
71 Curry Place
University of Manitoba
Winnipeg, MB, Canada, R3T 2N2
Tel.: (204) 474-7845
Email: Lilian.Pozzer@umanitoba.ca

February 20, 2015

Dear [principal name],

I would like to request your permission to conduct participatory action research within our school. The purpose of this study is to investigate student values and teacher attitudes regarding sustainability, in addition to profiling the school’s initiatives for their contributions to Education for Sustainable Development (ESD). From this research, recommendations will be made for future practice, focusing on school processes and
learning opportunities to improve our school’s approach to sustainable living. I intend to collect data from staff and students from February 2015 until June 2015. Below, I present a summary of the research study, its purpose, proposed data collection methods, and other important information for your decision making process. I have already obtained authorization from [superintendent name] to contact you regarding this research project (please, see attached signed form).

I would greatly appreciate if you were to consider my request to conduct research at [school name]. I have attached here an authorization form through which you could grant me permission to conduct this research at [school name], if you decide to do so.

Should you agree with my conducting this research at our school, I would like your permission to ask our school secretary [secretary name] to please send an invitation email and consent forms to teachers (attached here).

I would also like to request your permission to speak to participating students during their classes or a Social Justice Club meeting, should their teachers agree to participate in the research, to present the research and explain students’ participation in it, as well as answer any questions they may have about this research. I would also like if I could be able to speak briefly at a staff meeting in regards to this project and answer any questions staff may have in regards to this research. I will arrange for student assent and parental consent forms to be distributed and collected by a research assistant in my absence so that students feel free to either assent or refuse to participate, without prejudice. With your permission I would like to ask a research assistant to help in this study. They would allow be asked to invite students into this study and collect the assent and consent forms without a power over concern. In order to maintain anonymity of student responses in online surveys to the principal investigator, a research assistant will also be responsible for emailing out surveys, and the responses will not be linked to email addresses. The research assistant will be an educator not currently involved with research participants or a fellow graduate student and will be given an honorarium of $100 for their time.

I would be happy to meet and discuss this project with you, to answer any questions you may have regarding this project.

Should you wish, I will provide you with a summary of the research findings once this project has been concluded. For this reason, I ask you to kindly provide contact information in the form below.

Thank you very much.
Sincerely,

Heather Murphy Eckton

Summary of Research
The area of research that I am interested in is Education for Sustainable Development (ESD) that leads to transformational change. It is through this interest that I will set out to address the following research questions:

1. How are current school initiatives contributing to sustainable living?
2. What processes and learning opportunities are required to ultimately improve our whole-school approach to sustainability?

Since 2009, the school has offered an extra curricular social justice club run by several staff members and a flexible student membership that varies throughout the year. The club began as a way for staff to intentionally engage students in Education for Sustainability outside of their classes of instruction. There are approximately N=80 students engaged in various student action projects throughout the year. In addition, many staff are using ESD pedagogy within their classes.

Our school is in need of documenting and reflecting upon our current ESD initiatives in order to see if there is a link between processes and outcomes in ESD, and to ultimately improve our whole-school approach to sustainability. By conducting participative action research, a meaningful understanding of ESD will emerge in the context of one Manitoban school and add to the discourse for how to assess the impacts of ESD in schools.

The data collection for this study will involve staff and students between February 2015 and June 2015. I will use the following instruments to collect data for this research:

(1) **Teacher Sustainability survey:** This is an online survey for teachers. They will be invited to participate through an email and I am requesting permission for our school secretary to send this invite to teachers in our school. Interested participants, will then sign and return the consent form (which will be deposited in their mailboxes) to me, by placing them in a sealed enveloped in my mailbox. I will then send an email to teachers who agreed to participate with the link to complete the online survey, which should take about 10 minutes of their time. The survey responses will not be anonymous, as their responses will be linked to their identities through email address. In order to maintain confidentiality, I will be aggregating the data and ensuring that all other identifiers will be replaced by pseudonym.

(2) **Teacher description of ESD learning initiative or project:** In addition to responding the online teacher sustainability survey, teachers may consent to having a research assistant speak to students during their class time for recruitment and participation in this study if they will be exploring an ESD topic. In this phase of the research, teachers will be requested to provide a brief description of an ESD learning initiative or project they implemented with their students, which will become part of the dataset for this research. A template for this description will be provided to teachers who agree to participate in this phase of the data collection procedures. Moreover, as part of their participation in this phase of the research, I will arrange for a research assistant to talk to students about this research (an oral transcript will be provided), as well as to distribute, read, and collect assent and consent forms from students and their parents, and to administered two online student surveys (one prior and one after the ESD activity), which should take 10 minutes each. Prior to this
happening, I will ask participating teachers to allow me to talk to their students for 10 minutes, in order to answer any questions students may have in regards to this project.

(3) **Student values survey:** The teachers who agree to participate in the second phase of this research (item 2 above), will arrange a time where I will speak to the class regarding my research, followed by a research assistant who will come to speak to their students for recruitment purposes. The research assistant will distribute printed copies of consent forms for parents/guardians (sent to parents through students) and assent forms for students in their classes. This survey will take approximately 10 minutes online, preceding the implementation of an ESD project or learning initiative, as previously negotiated with each individual teacher. Students will place consent and assent forms into an envelope, which the research assistant will seal and return to me. Only participating students’ with the proper assent and consent will be emailed the surveys and their responses will be included in the dataset. In order to maintain anonymity of student responses in the online surveys to the principal investigator, a research assistant will be responsible for emailing out surveys, and the responses will not be linked to email addresses. In order to maintain confidentiality, I will be aggregating the data and ensuring that all other identifiers will be replaced by pseudonym.

(4) **Student reflective exit slips after student action projects and learning opportunities:** This open-question online survey will be administered by the research assistant to participating students by email. In order to maintain anonymity of student responses in the exit slips to the principal investigator, a research assistant will be responsible for emailing out the exit slips, and the responses will not be linked to email addresses. In order to maintain confidentiality, I will ensure that all other identifiers will be replaced by pseudonym. This survey will take approximately 10 minutes to complete online, following the development of an ESD related project or learning initiative, as previously negotiated with each individual teacher. Only participating students’ will be emailed this survey and their responses will be included in the dataset.

(5) **Matrix Interview and Focus Group with teachers and program leaders:** Teachers who agreed to participate in this research (N=8), will be invited to a matrix interview session, where they interview each other and record responses in writing. As part of the same session, participants will then take part in a focus group meeting, where results from student and teacher surveys will be discussed (anonymized results from surveys will be previously shared with participants by email). The focus group session will be video-recorded using two fully digital camcorders (which record data directly in digital files format) to facilitate ascertaining the authorship of contributions during the discussion. The session will last approximately an hour and a half, over two meetings. Participants will be purposefully selected after having signed a letter of consent indicating they would like to participate in this phase of the data collection. All participants will have the opportunity to read anonymized interview and focus group transcripts, so they can review their contributions before these are used as data for this study.
In addition to the abovementioned instruments for data collection, the following public institutional documents will also become part of the dataset to be analyzed in this research, should you grant me permission for it:

**(1) Analysis of past ESD initiatives from school documents:** I will use institutional documents recording previously implemented/developed ESD initiatives in the school. These will include the eco-globe school submission chart and the school plan for 2014-2015.

**(2) Meeting minutes from SJC meetings:** Minutes from the Social Justice Club meetings (one of the ESD initiatives in the school) will become part of the dataset for this research. The minutes, used as a record for student action projects throughout the year, and to track number of meeting participants will be anonymized before becoming part of the dataset.

Special care will be taken to guarantee the confidentiality of participants and data collected in this study. However, students and staff responses will be linked to their email address and therefore cannot be considered anonymous. The confidentiality of the staff and students will be maintained, and I will ensure that all other identifiers will be replaced by pseudonyms. It should be noted that the school where this research is taking place is not considered anonymous, as the principal investigator is a known member of staff. Finally, the staff involved in the focus group will not be considered anonymous, as they will be able to be identified by others in the group. The size of this focus group is N=8 and all participants will be asked to pledge confidentiality. Teachers who may want to have their participation acknowledged by name will have an opportunity to do so, and they will be alerted to the fact that this will fully disclose their identity.

I will be the only person with access to original unaltered data; any data used in dissemination materials (articles, conference presentations and publications, book chapters, books, final reports, recommendations and thesis) will be altered to maintain confidentiality and anonymity. Any printed documents will be stored in a locked cabinet in my office, and only I will see and access unanonymized data. Digital data will be securely stored on my personal computer on a password-protected hard drive. All printed data will be shredded after the conclusion of the project in June 2015, including consent and assent forms, and all digital data will be deleted by the same date.

All participants will be offered an opportunity to be sent a copy of the final report of this research. Participants of the matrix interview and focus group session will also have the opportunity to review anonymized transcripts. Whereas all feedback will be welcome, I will instruct participants to provide specific feedback regarding any quotes in the data, so that should they have any concerns in relation to their words being used, I will be able to address it appropriately (for example, replacing or editing quotes, if requested).

Participation in this research project is completely voluntary, and participants may withdraw from participating at any time, even after having signed the consent and assent forms, with no prejudice or consequence. Participants may do so by contacting me by email, phone or in person. There will be no risk or harm to the participants greater than
that which they may experience in the normal conduct of teaching and learning at the school. However, staff that participates in the focus group will be alerted to the fact that other members may identify them, and therefore, a risk of identification exists. No compensation will be provided to participants. The benefit is that participants may include their perspectives for a more sustainable school, which will be used as part of recommendations for future practice.

This research project is not funded. This research has been approved by the Nursing and Education Research Ethics Board of the University of Manitoba (please see attached certificate). Should you or any participant have any concerns or complaints regarding this research, you may contact me at the contact information provided above, or you may contact Mrs. Margaret Bowman, the Human Ethics Research Coordinator at the University of Manitoba (Tel.: 1+204-474-7122; Email: Margaret.Bowman@ad.umanitoba.ca).

**Authorization to grant permission for the researcher to conduct research in this school**

**Research Project Title:** Exploring the landscape of one urban high school's sustainability practices and values.

**Principal Investigator:**
Heather Murphy Eckton
[School Division Name] Masters Cohort
University of Manitoba

[School Name]
[Address]
[Contact Information]

**Student Supervisor:**
Dr. Lilian Pozzer
Department of Curriculum, Teaching and Learning
University of Manitoba

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Tel.: (204) 474-7845
Email: Lilian.Pozzer-Ardenghi@umanitoba.ca

I, [Full Name]________________________________________ signed below, in my capacity as principal of [name of school], authorize Heather Murphy Eckton to conduct the above-mentioned research project at this school. This authorization is contingent on
Heather Murphy Eckton following all procedures as described in the attached letter. My signature in this authorization form in no way releases the researcher, sponsors, or involved institutions from their legal and professional responsibilities.

[Signature]               [Date]

OPTIONAL:
Please, send me a summary of the findings of this research to the following email address:
Appendix K
Letter and Consent Form to Teachers

Research Project Title:
Exploring the landscape of one urban high school’s sustainability practices and values.

Principal Investigator:
Heather Murphy Eckton
[School Division Name] Masters Cohort
University of Manitoba

Student Supervisor:
Dr. Lilian Pozzer
Department of Curriculum, Teaching and Learning
University of Manitoba

Room 240, Education Building
71 Curry Place
University of Manitoba
Winnipeg, MB, Canada, R3T 2N2
Tel.: (204) 474-7845
Email: Lilian.Pozzer@umanitoba.ca

March 2, 2015

Dear Teaching Staff,

As part of my thesis for my Master of Education with the University of Manitoba I would like to invite you to be part of a participatory action research study at our school. The purpose of this study is to investigate student values and teacher attitudes regarding sustainability, in addition to profiling the school’s initiatives for their contributions to Education for Sustainable Development (ESD). I would like to request your consent for
participating in this action research. As part of a democratic process, I will be surveying teacher and students for their values and attitudes related to ESD. In addition, I will be profiling existing school processes and learning opportunities in ESD to see how they are contributing to sustainable development. There are three parts of this research you may choose to participate in. You may select any level of participation in this study. This ranges from giving your consent from one or more parts of the study, or all three parts, by signing the appropriate field below. Please note, you are not required to participate in any part of the study, your participation is based on your informed consent and you may choose to leave the research at any time. Given our collegial relationship, I realize you may feel pressured to participate, but please feel free to accept or decline of your own free will. If you choose to withdraw from participating in this research after having signed the consent form, you can do so with no prejudice or consequence. In no way will it impact our professional relationship.

**Part 1: Teacher Sustainability Survey**
I would like to survey our teachers to have a better sense of their perspectives and attitudes related to ESD. This online survey would require approximately 10 minutes of your time to complete and will be emailed out to you in March, if you choose to participate. Please note that your anonymity cannot be guaranteed as your survey responses are linked to your email. However survey responses will be kept confidential by aggregating the data. In addition, I will maintain the confidentiality of your responses and identities in presentation and publications.

**Part 2: Request for you to allow the researcher and research assistant access to your classroom so that students might receive information about the project for the purpose of recruitment.** Specially, I am looking for classes in which you will be teaching a topic related to sustainability at some point this semester or working on one of these causes within an extracurricular club. Examples could include a variety of topics such as the environment, human rights, fair trade, homelessness, equity or poverty. Please note that participating in this part of the research is not a requirement for you to participate in the online survey, and vice-versa. The data collection for this portion of this study will take place in a course of your choice on pre-specified days only, previously arranged with you. I would ask that you provide me with a brief written description of the ESD lesson or learning experience (a template will be provided to you). Before teaching the class, my research assistant will explain the research to your students and distribute the assent forms for your students and the consent forms they should send to their parents/guardians to sign. I would request an additional 10 minutes to speak to students during their class, should you agree to participate in this phase of the research, to present the research and explain students’ participation in it, as well as answer any questions they may have about this research. The research assistant will be responsible to collect assent and consent forms from students and to place these into an envelope which will then be sealed and return to me by a specified due date. Once student participants have given the appropriate consent and assent, they will be emailed an online survey, which they may complete on their own time. After the implementation of the ESD lessons, students will be emailed an online exit slip. Both online surveys should take approximately 10 minutes each for students to complete on their own time.
In order to maintain anonymity of student responses in the online surveys to the principal investigator, a research assistant will be responsible for emailing out surveys, and the responses will not be linked to email addresses.

**Part 3: Staff Interview Matrix and Focus Group**

I am looking for eight staff members (teachers) who are interested in participating in a matrix interview and focus group in order to gain your perceptions, opinions, beliefs and experiences with ESD at our school. In order to collect data, field notes will be taken throughout by all members of the group in a democratic interviewing matrix technique, where you will have an opportunity to be both an interviewer and interviewee. As interviewer, you will record, in writing, responses from the other participating members. You will receive the interview questions by email a week before the session. I will be holding two meeting in March and April, 2015 (specific date, time and location to be announced). Lunch will be provided on the second meeting. You will also be emailed the anonymized results of staff and student surveys regarding ESD a week prior to this second session. A round table focus group discussion will then ensue regarding these results. I will videotape the focus group part of the meeting in order to create a transcript of our talk, which will become part of my dataset. Two fully digital camcorders will be used to record the focus group. All participants will be sent a transcript of the matrix interview and focus group within two weeks of the meeting date. Identifiable data such as names, course and grade will be replaced with pseudonyms or not identified. Due to the fact that some questions will ask you about your experiences in teaching sustainability, this may be identifiable data and therefore the transcripts would not be considered completely anonymous. You will have two weeks to provide any feedback on these; if I do not hear back from you by then, I will assume the transcript is fine as is. Whereas all feedback will be welcome, I would like you to provide specific feedback regarding any quotes in the data you are concerned with, so that should you have any concerns in relation to your words being used, I will be able to address it appropriately (for example, replacing or editing quotes, if you request it). If you find that you do not want your data included in the dataset, I will remove it from the data. All video recording will be deleted in June 2015, and will be viewed only by me and only for the purpose of creating the transcripts. Transcripts may be shared with my supervisor. In order to maintain the confidentiality of other participants in this group, you will be requested to sign a pledge of confidentiality to not disclose information to others outside of this meeting.

Special care will be taken to guarantee the confidentiality of participants in this study. However, because of the nature of the study, anonymity cannot be guaranteed in this research, as participants will be known to the other members of this focus group. To minimize the risk of this, participants involved will be asked to pledge confidentiality. You will not be named as identifiable in any publication related to this study, unless you would like to be publicly acknowledged for your contributions to Education for Sustainable Development (ESD). All field notes taken will be securely stored in a locked drawer in my office, and only I will have access to them. Interview notes, digital recording and consent forms will be shredded upon publication of this thesis with an anticipated date of June 2015. It should be noted that the school where this research is taking place is not
considered anonymous, as the principal investigator is a known member of staff. I will be the only person with access to original, unaltered data; any data used in dissemination materials (articles, conference presentations and publications, book chapters, books, final reports, recommendations and thesis) will be altered to maintain confidentiality. Any printed documents will be stored in a locked cabinet in my office, and all digital data will be kept on a password-protected personal computer, and only I will have access to these. All printed data will be shredded after the conclusion of the project in June 2015, and all digital data deleted by the same date.

This consent form, a copy of which will be emailed to you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Participation in this research project is completely voluntary, and you may withdraw from participating at any time, even after signing the consent form, with no prejudice or consequence. You may do so by contacting me by email, phone or in person. Should you decide to withdraw your consent in this research, all data related to you will not be used. There will be no risk or harm to the participants greater than that which they may experience in the normal conduct of teaching other than the minimal risk mentioned above. No compensation will be provided to participants. Potential benefits from participating in this research include the opportunity to have your perspectives included in a plan for a more sustainable school, which will be used as part of recommendations for future practice. This research project is not funded.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to your participation as a subject. In no way does this waive your legal rights nor release the researchers, or involved institutions from their legal and professional responsibilities. You are free to withdraw your consent for participation in this study at any time, without prejudice or consequence. Your continued consent to participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. The University of Manitoba may look at research records to see that the research is being done in a safe and proper way. This research has been approved by the Nursing and Education Research Ethics Board. If you have any concerns or complaints about this project you may contact the above-named persons, or the Human Ethics Research Coordinator (HEC), Mrs. Margaret Bowman at the University of Manitoba, by phone at (204) 474-7122 or by email at Margaret.Bowman@ad.umanitoba.ca

A copy of this consent form has been emailed to you to keep for your records and reference. Should you wish to receive a final report of the research findings once this project has been concluded, please include your email information in the form below.
I thank you for your time in considering my request, and I would be glad to talk to you about any questions you may have about this research.

Sincerely,

March 2, 2015

Heather Murphy Eckton

**Research Project Title:**
Exploring the landscape of one urban high school’s sustainability practices and values.

**Principal Investigator:**
Heather Murphy Eckton  
[School Division Name] Masters Cohort  
University of Manitoba

[School Name]  
[Address]  
[Contact Information]

**Student Supervisor:**
Dr. Lilian Pozzer  
Department of Curriculum, Teaching and Learning  
University of Manitoba

Room 240, Education Building  
71 Curry Place  
University of Manitoba  
Winnipeg, MB, Canada, R3T 2N2  
Tel.: (204) 474-7845  
Email: Lilian.Pozzer@umanitoba.ca

**Part 1: Online Teacher Survey**
I, [Full Name-in-print]________________________________________ signed below, agree to participate in an online Teacher Attitude Survey of ESD.

________________________________________________________________________

[Participant’s Signature]  
[Date]

**Part 2:** Request for you to allow the researcher and research assistant access to your classroom or extracurricular club for recruitment purposes, so that students can receive information about the project. I, [Full Name-in-print]________________________________________ signed below, would allow the researcher or research assistant to recruit students in one of my classes, for the student online survey and exit slips, as we explore a topic related to ESD.
Name of course: ______________________, in Period: ____ be part of this action Topic (if known): ____________________________________________

[Participant's Signature] ___________________________ [Date]

*Page 1 of 2.

If you would like to be acknowledged by name in regards to your contributions to ESD in regards to this study, please sign below. Please, notice by signing here you agree to have your identity disclosed in dissemination materials related to this research.

[Participant’s Signature] ___________________________ [Date]

**Part 3: Staff Interview Matrix and Focus Group**

I, [Full Name-in print] ______________________________ signed below, agree to participate in the Matrix Interview and Focus group on June 25th, 9am-12:30 pm. Lunch will be provided for all participants. I pledge to maintain the confidentiality of data collected during this session and to not disclose the identity of participants or any other information from this meeting to others outside of this group.

[Participant’s Signature] ___________________________ [Date]

**OPTIONAL**

Please, send me a copy of the final report of this research at the following email address:
Appendix L
Letter and Consent Form to Parent/Guardian

Research Project Title:
Exploring the landscape of one urban high school's sustainability practices and values.

Principal Investigator:
Heather Murphy Eckton
[School Division Name] Masters Cohort
University of Manitoba

Student Supervisor:
Dr. Lilian Pozzer
Department of Curriculum, Teaching and Learning
University of Manitoba

Room 240, Education Building
71 Curry Place
University of Manitoba
Winnipeg, MB, Canada, R3T 2N2
Tel.: (204) 474-7845
Email: Lilian.Pozzer@umanitoba.ca

March 4, 2015

Dear Parents or Guardians,

I am a teacher at [school name] and a student enrolled in the [school division name] Masters of Education cohort at the University of Manitoba. As the principal investigator in a participatory action research project that explores education for sustainable living at our school, I would like to invite your son or daughter to participate in this research. They will
do so by completing two online surveys (a) a student sustainable living values survey and (b) an exit slip after participating in a learning opportunity related to sustainability. I would like to request your consent for your son or daughter to participate in this research as a student in [teacher’s name] and a participant in the Equity Conference at [school name]. Should you agree to your son/daughter participating, please complete and sign and have your child return this consent form by Wednesday, March 11, 2015.

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your son or daughter’s participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The purpose of this study is to investigate student values and teacher attitudes regarding sustainability in order to make recommendations for school processes and learning opportunities to improve our whole school approach to sustainability. In order to include students’ voices into this process, students will be invited to participate in two online surveys. Once the proper assent and consent has been given, students will be invited by email to complete a student sustainable living values survey consisting of 16 questions using a 4 point likert-scale and two open ended questions. This should take 10 minutes to complete. Second, students will have the opportunity to provide their feedback after having participated in a learning experience related to sustainability through answering five questions in an online student reflection exit slip. In order to maintain confidentiality, I will ensure that all other identifiers will be replaced by pseudonym. I will anonymize the responses of all students who agreed to participate before I use them as part of the dataset for this research.

The data collection for this study will take place online and on the student’s own time. The total amount of time will be approximately 20 minutes for both the survey and exit slip, although they may take place on different days.

Special care will be taken to guarantee the confidentiality of participants in this study. However, students will be required to include their email address to ensure only students who have provided assent/consent will be emailed the link to the surveys and included in the dataset. In order to maintain anonymity of student responses in the online surveys to the principal investigator, a research assistant will be responsible for emailing out surveys, and the responses will not be linked to email addresses. It should be noted that the school where this research is taking place is not considered anonymous, as the principal investigator is a known member of staff. I will be the only person with access to original unaltered data; any data used in dissemination materials (articles, conference presentations and publications, book chapters, books, final report, recommendations and thesis) will be altered to maintain confidentiality. Any printed documents will be stored in a locked cabinet in my office, and only I will access them in their unanonymized format. Anonymized data will be shared with students and staff a month after the surveys are concluded this will be done by aggregating the data. My supervisor will also have access to
anonymized data from the student surveys. All data will be shredded after the conclusion of the project, estimated to happen in June 2015, including surveys, exit slips and consent forms.

Participation in this research project is completely voluntary, and students may withdraw from participating at any time, even after signing assent forms, with no prejudice or consequence. You or the students may do so by contacting me by email, phone or in person. Should you decide to withdraw your consent for your child to participate in this research; all data related to your child will not be used in dissemination materials. No risks or harm will result from participation in this research project, beyond those expected in daily regular class activities. No compensation will be provided to participants. Potential benefits from participating in this research include the opportunity for your son or daughter to add their voice to creating a more sustainable school, which will be used as part of recommendations for future practice. This research project is not funded.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to your son’s or daughter’s participation as a subject. In no way does this waive your legal rights nor release the researchers, or involved institutions from their legal and professional responsibilities. You are free to withdraw your consent for your son’s or daughter’s participation in this study at any time, without prejudice or consequence. Your continued consent to participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. The University of Manitoba may look at research records to see that the research is being done in a safe and proper way. This research has been approved by the Nursing and Education Research Ethics Board. If you have any concerns or complaints about this project you may contact the above-named persons, or the Human Ethics Research Coordinator (HEC), Mrs. Margaret Bowman at the University of Manitoba, by phone at (204) 474-7122 or by email at Margaret.Bowman@ad.umanitoba.ca

A copy of this consent form has been given to you to keep for your records and reference. Should you wish to receive a final report of the research findings once this project has been concluded, please include your email information in the form below.

I thank you for your time in considering my request, and I would be glad to talk to you about any questions or concerns you may have regarding your son’s or daughter’s participation in this research.

Sincerely,

Heather Murphy Eckton

March 4, 2015

I consent to ___________________________’s [Student’s full name – in print] participation in the research project described above.
[Signature of Parent/Guardian]  [Date]

**OPTIONAL:**
I would like to receive the final report of this research at the following email:

_________________________________________________________________________________
Appendix M
Letter of Assent for Student

Research Project Title:
Exploring the landscape of one urban high school’s sustainability practices and values.

Principal Investigator:
Heather Murphy Eckton
[School Division Name] Masters Cohort
University of Manitoba

Student Supervisor:
Dr. Lilian Pozzer
Department of Curriculum, Teaching and Learning
University of Manitoba

Room 240, Education Building
71 Curry Place
University of Manitoba
Winnipeg, MB, Canada, R3T 2N2
Tel.: (204) 474-7845
Email: Lilian.Pozzer@umanitoba.ca

March 16, 2015

Dear Student,

I am a teacher at [school name] and a student enrolled in the [school division name] Masters of Education cohort. As the principal investigator in a participatory action
research project that explores education for sustainable living at our school, I would like to invite you to participate in this research. There will be two parts to this study; completing an online sustainable living values survey and filling out an exit slip after participating in a student action project related to sustainability or learning about a topic related to sustainability in class. I would like to request your assent to participate in this research as a student in [teacher's name] and a participant in the Equity Conference at [school name]. Should you agree to participate, please complete and sign the assent form and have your parents/guardian complete the consent form and return it to the research assistant on Wednesday, March 11, 2015.

This assent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The purpose of this study is to investigate student values and teacher attitudes regarding sustainability in order to make recommendations for school processes and learning opportunities to improve our whole school approach to sustainability. In order to include students’ voices into this process, students will be invited to participate in two online surveys. Once the proper assent and consent has been given, you will be invited by email to complete a student sustainable living values survey consisting of 16 questions using a 4 point likert-scale and two open ended questions. This should take 10 minutes to complete. Second, students will have the opportunity to provide their feedback after having participated in a learning experience related to sustainability through answering five questions in an online student reflection exit slip. Please note that the survey responses will not be anonymous, as their responses will be linked to their identities through email address. In order to maintain anonymity of student responses in the online surveys to the principal investigator, a research assistant will be responsible for emailing out surveys, and the responses will not be linked to email addresses. In order to maintain confidentiality, I will ensure that all other identifiers will be replaced by pseudonym.

I will anonymized the responses of all students who agreed to participate before I use them as part of the dataset for this research.

The data collection for this study will take place in online during your own time. The total amount of time will be approximately 20 minutes for both the survey and exit slip, although they may take place on different days.

Special care will be taken to guarantee the confidentiality of participants in this study. However, students will be required to include their email address to ensure only students who have provided assent/consent will be emailed the link to the surveys and included in the dataset. I will be the only person with access to original unaltered data; any data used in dissemination materials (articles, conference presentations and publications, book chapters, books, final report, recommendations and thesis) will be altered to maintain
confidentiality and anonymity. Any printed documents will be stored in a locked cabinet in my office, and only I will access them in their unanonymized format. Anonymized data will be shared with students and staff a month after the surveys are concluded. My supervisor will also have access to anonymized data from the student surveys. All data will be shredded after the conclusion of the project, estimated to happen in June 2015, including surveys, exit slips and consent forms.

Participation in this research project is completely voluntary, and you may withdraw from participating at any time, even after signing this assent form, with no prejudice or consequence. No risks or harm will result from participation in this research project, beyond those expected in daily regular class activities. No compensation will be provided to participants. Potential benefits from participating in this research include the opportunity for you to add your voice to creating a more sustainable school, which will be used as part of recommendations for future practice. This research project is not funded in any way.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participation as a subject. In no way does this waive your legal rights nor release the researchers, or involved institutions from their legal and professional responsibilities. You are free to withdraw your assent to participation in this study at any time, without prejudice or consequence. Your continued consent to participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. The University of Manitoba may look at research records to see that the research is being done in a safe and proper way. This research has been approved by the Nursing and Education Research Ethics Board. If you have any concerns or complaints about this project you may contact the above-named persons, or the Human Ethics Research Coordinator (HEC), Mrs. Margaret Bowman at the University of Manitoba, by phone at (204) 474-7122 or by email at Margaret.Bowman@ad.umanitoba.ca

A copy of this assent form has been given to you to keep for your records and reference. Should you wish to receive a final report of the research findings once this project has been concluded, please include your email information in the form below.

I thank you for your time in considering my request, and I would be glad to talk to you about any questions you may have regarding this research.

Sincerely,

Heather Murphy Eckton

March 4, 2015
[Participant’s full name – in print]

[Participant’s full email – please print clearly]

[Participant’s Signature]  [Date]

OPTIONAL:
I would like to receive a final report of this research at the following email: