All Education is Environmental Education

by

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ABSTRACT

The purpose of this study is to explore how secondary school students construct meanings for environmentalism. The study participants consisted of grade-twelve students from a rural eastern Ontario secondary school. The questions guiding this research are: a) in what ways do these students develop an understanding of environmentalism; b) what factors influence these students' decisions to take, or to not take, senior level elective Environmental Education courses as part of their secondary school curriculum; and c) what are students’ perception of Environmental Education and the current curriculum in secondary schools. Using a critical theory approach, this qualitative study employed two different methodological approaches: a survey, in the form of a questionnaire, and focus groups.

Eighty-five grade twelve students participated in this study, eleven of which were also involved in three different focus group interviews. The survey was used to explore the general knowledge base and attitudes of these students towards environmentalism. The survey was conducted in May 2008, and the focus groups were conducted in June of the same year. Results were analyzed to identify, describe and compare the attitudes of students, and how they form meanings for environmentalism. Five themes emerged from the analysis of data generated from the surveys and the focus groups. Those themes were: students’ definitions of environmentalism; students’ perceptions regarding Canadian environmental concerns and these concerns within a global context; where and what students are learning
about the environment; students’ perceptions of the current curriculum; and students’ attitudes, lifestyle and choices they make as a result.

The most significant finding was not only the apparent lack of direction these students perceive themselves to be receiving regarding Environmental Education in the secondary context, which in some cases leads to a deficiency in understanding and concern, but also their noting the prevalence of media as a source of information about environmentally-related issues. Suggestions for future research on other salient aspects of Environmental Education are offered to shed further light on this issue.
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DEDICATION

To my loving parents, Ron and Lynn, I share this work with you... for always encouraging me to achieve my goals, for having unwavering confidence in my abilities, even during challenging times, for providing seemingly infinite compassion and support from which I too often drew, and perhaps most significantly, for instilling in me the values to always nurture, and have a life-long respect for the local environment; and to my sister, Jennifer, for her love and support, and for being a “big sister” when I needed her to be.

Finally, I dedicate this thesis to the young people of the world, in whose hands our future rests.
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CHAPTER ONE

INTRODUCTION

My interest in the environment was ignited early in my life with parents who instilled values in, and respect for the local environment. Consequently, when I began teaching Science and Geography seven years ago at the secondary level in Ontario, with every chance I had and every opportunity available, I integrated environmentally-focused concepts, ideas, and views into the curriculum. My concern grew considerably regarding what appeared to be the general lack of understanding and appreciation for environmentally related issues on the part of many secondary students. Moreover, I also noted the lack of emphasis on environmentalism within the Ontario curriculum. The apparent lack of focus on the topic in the classroom was equally disturbing and worrisome to me. My interest in the environment was further reinforced by my subsequent travel to the magnificent continent of Antarctica with students from around the world aimed at enhancing our awareness and to see first-hand the degradation of our delicate earth. What added to my shock regarding the clear and imminent degradation of the environment, however, was the sight of massive cruise ships travelling in and around the Antarctic Peninsula. The group on our small icebreaker vessel was comprised of teachers, students and scientists. We docked on the continent at least three times each day visiting research stations, observing penguin rookeries, trekking to the top of glaciers, and learning about the history of Shackleton and his men. My astonishment and disgust were palpable when
we saw giant cruise-liners sailing by, with the guests on board waving with one hand, while holding glasses of champagne in the other. What has happened that we have made travelling to the most fragile of our continents a chic, stylish, and trendy thing to do? Is this the concept of “environmentalism” we are teaching our next generation? What messages are students receiving to delineate the fundamental concepts of environmentalism?

At the same time I also realized there was certainly a level of hypocrisy in travelling to Antarctica; a dilemma I struggled with greatly. I acknowledge the complexity of travelling to one of the most fragile regions in the world, however carefully, where humans should not be leaving a “footprint.” Nevertheless, it is important to note the motivation behind my excursion. This was an educational journey with students from around the world. The icebreaker was transformed into a travelling classroom, where students and teachers alike were given the opportunity to learn from polar region experts, and witness first-hand the link between choices people make and climate fragility at the poles. Granted, many students have not, or will never have the opportunity to travel to such a brilliant place. However, I would argue that making an impact on a few will have a “ripple effect” on many.

Undoubtedly, travelling to Antarctica and other continents in the world has given me a new consciousness when considering journeying to fragile and tenuous regions in the future. This understanding, coupled with the new awareness I’ve acquired during the course of this research study, will aid in communicating the word to many, including future students, that drastic change is critical to future generational survival, as poignantly stated by Wright (2004):
Our civilization, which subsumes most of its predecessors, is a great ship steaming at speed into the future. It travels faster, further, and more laden than any before. We may not be able to foresee every reef and hazard, but by reading her compass bearing and headway, by understanding her design, her safety record, and the abilities of her crew, we can, I think, plot a wise course between the narrows and the bergs looming ahead. And I believe we must do this without delay, because there are too many shipwrecks behind us. The vessel we are now aboard is not merely the biggest of all time; it is also the only one left. The future of everything we have accomplished since our intelligence evolved will depend on the wisdom of our actions over the next few years. Like all creatures, humans have made their way in the world so far by trial and error; unlike other creatures, we have a presence so colossal that error is a luxury we can no longer afford. The world has grown too small to forgive us any big mistakes. (p. 3)

Purpose

Research that follows the critical theory paradigm emphasizes the importance of discovering and rectifying societal problems. Rather than advocating neutrality, critical researchers emphasize action research, arguing that research should redress past oppression, bring problems to light, and help minorities, the poor, the sidelined, and the silenced. (Rubin, 2005, p. 25)

Arguably, the environment has fallen into the category of “sidelined.” Environmentalism is the concern for the preservation, restoration, or improvement of the natural environment (Meyer, 2001, p. 22). The environment includes the natural and physical world, but it also encompasses the political, social, and economic aspects of our earth. The “triple bottom line”, a phrase coined by John Elkington in 1994, involves people, profit, and of course, the planet. The premise of Elkington’s theory is sustainability, which is to say that it is required that these three entities be maintained at a certain level indefinitely. Unfortunately, the focus on the consumption of goods by people and the desire for corporate profit has certainly
outweighed the needs of the planet. Who gets to decide where this balance should and will occur?

The United Nations has proclaimed 2005-2014 the “Decade of Education for Sustainable Development” with the overall goal of “integrating the principals, values, and practices of sustainable development into all aspects of education and learning” (UNESCO, 2005, p.1). Closer to home, the Ontario Ministry of Education is demonstrating its concern for the environment through the school system by teaching the next generation about sustainable practices. In particular, in secondary schools, Environmental Education (EE) is rooted in the subjects of Science and Geography (Ontario Ministry of Education, 2007). For example, in the Grade 9 Academic Geography curriculum, overall expectations, divided by unit, include:

*Geographic Foundations* – Demonstrate an understanding of the regional diversity of Canada’s natural and human systems; describe the components and patterns of Canada’s spatial organization; and analyse local and regional factors that affect Canada’s natural and human systems;

*Human-Environment Interactions* – Explain the relationship of Canada’s renewable and non-renewable resources to the Canadian economy; analyse the ways in which natural systems interact with human systems and make predictions about the outcomes of these interactions; and evaluate various ways of ensuring resource sustainability in Canada;

*Global Connections* – Describe how Canada’s diverse geography affects its economic, cultural, and environmental links to other countries; analyse connections between Canada and other countries; and report on global issues that affect Canadians; and

*Understanding and Managing Change* – Explain how natural and human systems change over time, and from place to place; predict how current or anticipated changes in the geography of Canada will affect the country’s future economic, social, and environmental well-being; and explain how global economic and environmental factors affect individual choices.

(Ontario Ministry of Education, 2005, pp. 30–33)
The goals formulated by curriculum developers accentuate issue investigation, critical thinking, values clarification, and the need for a more positive environmental attitude in students (Gardella, 1990; Hungerford and Volk, 1990; Majumdar, et al., 1991; Neidermeyer, 1992). While there was at one point a stand-alone environmental science course in the Ontario curriculum (1988 – 2000), there is no longer. In 2000, the government of Ontario removed this course from the curriculum, and embedded those expectations into the subjects of Science and Geography. As Puk and Behm (2003) point out, the implication of these explanations for eliminating Environmental Science from the secondary curriculum was that more Environmental Science would be taught because it would be integrated in a number of different courses. However, as Hungerford & Volk (1990), Lewis (1990), and Orr (1992) suggest, there are few curricular areas where change in attitudes can have a greater impact on the earth’s future than in Environmental Education. EE refers to the teaching about the natural environment, more specifically, how it functions, and how humans can contribute to the sustainability, conservation, and preservation of the environment.

“Environmental Education therefore becomes a program intended to lead to the development of a society that, by its policies and practices, will maintain an environment fit-for-life for all people in the global community” (Borger, 1990, p. 3).

The purpose of this study is to describe how secondary students construct meanings for environmentalism. The questions guiding this research are: a) In what ways do students develop an understanding of environmentalism; b) what factors influence these students' decisions to take, or to not take, senior level elective Environmental Education courses; and c) what are students’ perceptions of
Environmental Education and the current curriculum in secondary schools. A better understanding of the above is important in order to inform future curriculum development and teacher education.

**Rationale**

EE is arguably one of the most important topics to be covered in schools today. According to Chawla and Cushing (2007) by the middle school and secondary school years in the US and most other advanced economies, students are expected to learn how government works and how citizens can play an active role in environmentalism (p. 438). By eliminating Environmental Sciences from the curriculum, and infusing and incorporating these expectations into the science and geography curricula, it was the government’s argument that more students would be exposed more often to environment-based criteria (Puk & Behm, 2003). However, in my experience many teachers of Ontario science and geography courses with whom I have discussed the issues in my work, argue the opposite has happened; rather than expectations being infused and incorporated into these curricula, they seem to be hidden, or displaced by historically conventional approaches to these disciplines.

Recent changes to the science curriculum in Ontario, however, indicate an emphasis on environment-based and related expectations. Unfortunately, only a draft version of the purposed curriculum is available; the expected release of which is sometime in 2009. As a consequence, there appears to be a generation of students who will have “missed the boat.”
Chawla and Cushing (2007) argue that certain conditions have to be met—conditions that some students may be lacking—in order to foster responsible environmental behaviour, civil action, and the development of both individual, and civil competence. One of these conditions is Environmental Education. In order for students to demonstrate environmentally responsible behaviour, they need a fundamental knowledge base of environmental issues. In this qualitative research study, which took place in a rural secondary school setting in eastern Ontario, I will shed light on how a small group of students construct meanings for environmentalism.

**Building the Case**

How students construct meanings for environmentalism is shaped by Ontario Ministry of Education policy. However, when policy is weak or lacking, gaps exist that need to be filled. As indicated by many students throughout the course of this study, these gaps are being filled by media. However, it is important to first discuss the many and varied policy and curriculum changes, and the clear lack of guidance by the Ontario Ministry of Education regarding EE. As a result of these modifications to the Ontario curriculum over the years, and as indicated above, a gap exists, with many students not learning, or learning a minimal amount of EE in secondary schools. With a deficiency in the school system, combined with an arguably societal craze in environmentalism, students attempt to fill this gap on their own, often through means outside the formal school setting. This research study shows not a lack of concern and understanding on the part of students, but a want for
direction in the area of EE. In concluding this study, I recommend a much closer look at teacher education on the subject of Environmental Education in the province of Ontario.
CHAPTER TWO

LITERATURE REVIEW & CONCEPTUAL FRAMEWORK

Introduction

As I progressed through the stages of this research, I found that I needed to set a framework for discussion and that certain writers and their theories seemed philosophically akin to my own understandings. The function of this chapter is to outline some of the major themes which construct the rest of the work, and to introduce some of the theoretical foundations which will inform the later analysis. Research that informs my study of Environmental Education in schools may be divided under three interrelated headings: 1) EE philosophies of past and present, 2) the pedagogy of EE in schools, and 3) students’ attitudes and beliefs regarding the environment. Underlying all of these studies is the politics that come into play when determining what is taught in schools regarding EE.

Philosophies—Past and Present—of Environmental Education

The main purpose of Environmental Education has been to develop in students an understanding and appreciation for the natural environment, through hands-on experiences (Bonnett, 2007). The first industrial revolution, which began in the 18\textsuperscript{th} century, saw a boom in the development of machinery in the agricultural industry. The second industrial revolution, which began in the mid 19\textsuperscript{th} century, saw the rise of manufacturing and transportation, and the rise of industrial powers, such as Great
Britain, Germany, China, and the United States of America. This second revolution also produced unprecedented amounts of pollution, which resulted in some unnecessary stresses and pressures on the planet. In the early 20th century, the beginning of the so-called third industrial revolution, conservation and preservation of natural resources became a matter of interest and concern for many. As a result of this economic and moral battle between different stakeholders, Environmental Studies have been full of contradictions, controversies, and changes over the past few decades. For example, the challenge presently is to find the balance between zero footprints and emissions, and what is good for the country economically. The 1960s marked the beginning of public concern over environmental degradation in developed countries, such as the United States, Britain, Australia, and Canada.

Beginning with Rachel Carson’s *Silent Spring* (1962), the 1960s brought warnings of imminent ecological disasters. Extensive media coverage of environmental issues, the publication of numerous books by ecologists, and the emergence of organisations such as Friends of the Earth and Zero Population Growth reflected a widespread concern in the late 1960s and early 1970s that action was needed to change the prevailing pattern of misuse of the environment. (Stevenson, 2007, p. 140)

Rachel Carson was the pioneer of the environmental movement, and was certainly well ahead of her time. As a result of her book, *Silent Spring*, a national debate ensued on the use of chemical pesticides, the responsibility of science, and the limits of technological progress (Carson, 1962). Carson set in motion the ban of the domestic production of DDT, and also started a grassroots movement for environmental protection. However, it took roughly a decade of persistent political agitation over such matters as pesticides, nuclear power plants, toxic waste dumps, large scale industrial development, and pollution before an ‘environmental crisis’
was officially recognized (Eckersley, 1992, p. 8). Citizen’s concerns regarding environmental exploitation were also being heard by government. For the first time, it seemed, many were starting to link together politics, society, economics, nature, history, and aesthetics because of the vast numbers of people moving from rural to urban areas. The search for meaning in urban living is ongoing today, as increasingly fewer people live on farms with direct connection to, and understanding of, natural systems.

Warnings of the past have not been heeded, however, and as a result, more damage has continued to be done to the natural world, such as, the release of greenhouse gases into the atmosphere. While there is consensus about the severity of environmental degradation taking place worldwide, there is little consensus about what can, and should be done to avert future environmental catastrophe. Today, unfortunately, we are dealing with many of the environmental tragedies predicted decades ago. Natural disasters seem to be commonplace, pesticide use is still common practice, we are building even more nuclear plants across North America and around the world, our land-fills are bursting, industrial development is at an all-time high, and as a result, more pollution is being pumped into the earth’s atmosphere. How are students being prepared for what is ahead? More importantly, how are teachers being prepared to teach students? As Chapman (2007) found, “Environmental programmes are designed with little or no unifying concept, or where one does exist, the conception is too narrow to adequately address the complexity of this subject, or too broad to provide more than a superficial understanding of the issues” (p. 60).
Environmental Education Pedagogy

In Ontario, the government sets curricula for all disciplinary areas, at all grade levels. While there are opportunities for teachers to expand and explore different topics of interest, there are many and varied constraints. For example, for EE in the subjects of Science and Geography, lack of time for these topics is a notable limitation, which prevents discovery and investigation. Puk and Behm (2003) addressed two very important questions. How well prepared are teachers of Geography and Science to take on this new and monumental area of study? And how many of these concepts are actually being taught in the Science and Geography curricula?

Questionnaires were developed by Puk and Behm (2003), based on the Ontario guidelines and expectations of the environmental sciences course, and sent to many Science and Geography teachers around the province. The results of the Puk and Behm (2003) study indicate the failure of the infusion model for Environmental Education. It was determined that very little time was spent on the environmental concepts taken from the Environmental Science curriculum, and integrated into the science and geography courses. Teachers indicated a lack of time and emphasis on environmental and ecological concepts in the current curriculum guidelines as being a key factor in this lack of education.

There is very little Environmental Science in the new Ontario secondary science guidelines, and without a strong focus on ecological concepts, teachers most likely feel they must cover the “main” science concepts (Biology, Chemistry, Physics), and cannot afford to devote precious time to field trips for the small percentage of environmental concepts that exist in the guidelines. (Puk & Behm, 2003, p. 225)
They also concluded that there was a lack of teacher training and preparation for this topic: “A systematic model for in-service and pre-service training must exist in order to thoroughly prepare teachers” (Puk & Behm, 2003, p. 230).

What was important about the above study is two-fold. It highlighted the failure of the infusion model, and it also underscored the need for a stand-alone, single-focus Environmental Education course. Since 2003, such a course has been developed in the Ontario Curriculum. “The Environment & Resource Management” course currently exists in the grade 12 Canadian and World Studies curriculum (Geography). However, and much like the Environmental Science course discussed in the Puk & Behm study of 2003, one of the major limitations of this course is that it is designated as an elective. It is therefore competing with all other senior elective offerings in the secondary curriculum, and as a result, many schools do not offer the course, or when it is offered, it is frequently cancelled due to lack of enrolment.

Contrary to the above study, Schweisfurth (2006) found that teachers who are determined to make global education a priority have found that the new Ontario curriculum guidelines gave them plenty of opportunities to do so. Still much remains unspecified in that, as Schweisfurth states, “an emphasis on critical engagement with global issues in the curriculum may not be explicit, the curriculum creates the space for teachers to control the process themselves—without actually encouraging them to do so” (p. 44). Without a doubt, the environment is a global issue. However, Schweisfurth goes on to explain that those teachers who took advantage of this space to control processes were unusual among their colleagues. One can speculate that
teachers who fell into this category were highly motivated, and had some sort of support to engage in issues they felt important.

Arguably the current Ontario curriculum does in fact allow for expansion into realms of education not necessarily stated in the documents, such as Environmental Education. Expectations in the curriculum are, in fact, broad enough to allow teachers the freedom to expand on certain topics of interest. However, this requires that a teacher have an interest in the topic; acquire the expertise and understanding to teach the subject; and have the desire, passion, and means to expand upon it in the classroom. Any or all of these requirements are often lacking:

Contrary to arguments that if teachers believe in a particular pedagogical approach they will use it, or that those who are motivated and care will take up Environmental Education, I suggest that the power of dominant discourses, (re)inscribed through everyday language and social practices, may seriously constrain ways in which impassioned teachers teach Environmental Education. (Barrett, 2007, p. 216)

Unfortunately, there is little Environmental Education in the prescribed curriculum. Environmentally-related expectations in the curriculum are embedded in compulsory courses in grade nine and ten Science and Geography. However, after grade ten, schools may or may not offer elective environmentally-related courses (Ontario Ministry of Education, 2007). “These often-contentious encounters enforce the misguided perception that EE must be an adjunct to some other, preferably more established discipline that is, to continue the metaphor, firmly strapped to the sturdy mast of biology, policy studies, etc.” (Chapman, 2007, p. 61). Furthermore, it seems that, in general, there is major disconnection between curriculum in the disciplinary areas in the Ontario education system. Therefore, the next generation is not only
receiving minimal EE, there is little opportunity to make connections between
disciplinary areas, and as a result, little understanding of the “whole” picture. As
Chapman (2007) points out:

More than anything else the ecological crisis is, in part, caused by our failure to
see things as connected—that is, holographically. Experience of place,
knowledge of nature based on seeing it as a series of regional communities, is
one way to acknowledge the importance of personal responsibility to a
particular location and by extrapolation to broader geographical areas—a way
to effectively include value in a pedagogically coherent system. (p. 68)

In studies by both Robertson & Krugly-Smolska (1997) and Puk & Behm
(2003), teachers cite “lack of time” and “increased pressure” to cover all the
materials under the realm of Science or Geography, which are the two most popular
subjects within which Environmental Education is embedded. While Puk & Behm
(2003) point out, “we can no longer afford to relegate ecology to elective status;
ecological literacy should be viewed as being the first imperative in schooling and in society” (p. 230), both of the above studies indicated current problems with teacher
education, and outline specific recommendations for future teacher education reform.

Ontario integrates EE into the curricula of subjects such as Science and
Geography. For example, one of the foci in the Ontario science curriculum is
certainly socially critical, in terms of environmental related expectations. One of the
expectations of the grade nine Science courses is to develop a solution to a practical
problem related to the use of electricity in the home, school, or community (Ontario
Ministry of Education, 1999, p.14). However, it has been stated by the government
that the new version of the Science curriculum is more environmentally focused—
that is, environmentally-related expectations will continue to be “infused” and
“incorporated” into the curriculum. In addition, the expectation is that many of the new criteria in the Science curriculum will still be based on current societal and political influences. As Wong Bing Kwan and Stimpson (2003) point out:

While Environmental Education programmes around the world share common aims based broadly on ideas from various UNESCO conferences over the last 25 years, they often differ in focus as a consequence of the environmental, historical, socio-political and educational systems in which they develop. (p. 123)

Current societal influences, more often than not via the media, have an enormous impact on the next generation—arguably, more than any previous. Peer pressure is another source of influence on secondary students. These two very powerful influences directly affect the choices students make.

**Student’s Attitudes, Lifestyles, and Choices**

While I worked part-time in the retail industry in an outdoor activity-based store while completing my graduate studies, I saw first-hand the attitudes of many secondary and university students, and some of the choices they make in their consumer activity in the Kingston community. With the recent craze in the media about plastic bottles which leaches the chemical Bisphenol–A out of the plastic and into the liquid in the container, many students and parents came into the store where I worked to buy aluminum or stainless steel bottles. Often I would engage in a conversation with these students, talking to them about the media’s influence on their perceptions that plastic water bottles are harmful, and that buying a new non-plastic one is the right solution. I ask these students why they are switching to, for example, a stainless steel bottle. More often than not the reason was because “it is what their
friends have,” so they must have it as well. Many parents’ responses were similar, with their children telling them “it’s just not cool to have plastic anymore.”

Similarly, students at Queen’s University were given “Green” cloth bags during orientation week in September, filled with new student information, such as pamphlets, brochures, coupons, calendars, etc. I can’t help but wonder about the authenticity of giving students a cloth bag filled with paper as an act of environmental awareness. However, this was a way to promote the university as being more conscious of what’s happening to the planet. Unfortunately, some students are entering stores with their virtually empty green bag, buying goods from a retailer, and asking for a plastic bag to place their purchase into. The two aforementioned examples demonstrate a lack of understanding and internalization regarding appropriate and significantly effective environmental practices.

Curriculum often conveys the same message: buy these products (e.g. replace incandescent light bulbs with new energy efficient ones, buy hybrid cars, use energy efficient appliances, etc.), and consider yourself environmentally friendly. Through marketing and media, the Canadian government is attempting to guarantee that the next generation be conscious—to a certain extent—of what they buy, with little thought given to the larger impact and questionable results behind such purchases. What does it mean when they say this product is “green”? What is it made of? Where did it come from? Who is benefiting from the purchase of this product? What is the energy output to produce these products? As Chawla and Cushing point out, “too often Environmental Education aims for behaviour modification and offers
disconnected activities in the place of opportunities for autonomy and critical analysis” (2007, p. 448).

However, in parts of the province many good lessons are being taught, and compelling messages are being conveyed to students about what more can be done, and should be done; not solely as individuals, but as communities. It seems easy to recycle, and perhaps reuse, but not so easy to reduce. It also seems easy to buy new and improved vehicles, appliances, clothes, etc., with little thought to exactly where the old ones are going, and what environmental impact is the consequence in production of replacement items. Moreover, students may not carry what they learn in the classroom to places beyond the classroom. Chawla and Cushing (2007) explain:

In a much cited article, Hungerford and Volk (1990) noted that environmental educators typically assume that if they simply impart knowledge to students, responsible action will follow. Research, however, indicates that the antecedents of action are much more complex than knowledge alone. (p. 437)

**Education & Politics**

We have reached the stage in the narrative where we have received the iceberg warning, and have made the remarkable decision to double the engine Full Speed Ahead and go below to get a good night’s rest. A change of course might be bad for business, we might have to slow down, lose time. Nothing, not even the ultimate risk of the death of nature, can be allowed to hold back the triumphant progress of the ship of rational fools. (Plumwood, 2002, p. 1)

The environment, specifically after the release of the documentary, “An Inconvenient Truth” by Al Gore (2006), has become foremost on the agenda of many, for political and personal reasons. Having the environment on the minds of politicians and the general public is certainly a step in the right direction. However,
current environmental perceptions seem to be putting a trendy spin on a very delicate and dire state of affairs. Furthermore, Al Gore’s film, among others, might well be used by teachers as an Environmental Education spring board in classrooms across Ontario, and perhaps the world.

As stated previously, Meyers (2001) defines environmentalism as a collective concern about the preservation and restoration of the natural environment. Since the protection and safeguarding of the environment is a matter of tremendous interest and concern, environmentalism is a strong social movement taking place in many nations. Rothenburg (2002) outlines the evolution of environmentalism in the United States; the four stages are: a) “Conservation-Efficiency” (1870-1920), where the goal was to use natural resources sensibly; b) “Conservation-Preservation” (1920-1960), where the goal was to embody the ideas of multiple-use of natural resources and sensibility together; c) “Environmental Movement” (1960-1980) sparked the infusion of “interest groups”, in light of the creation of the Environmental Protection Act (EPA); and d) the “Contemporary Period” (1980-present), which is a continuation of previous stages, but with many more interest groups and the urgency of the environmental degradation, as a result of the massive expanse of industry. Unfortunately with the burgeoning population, and the increased demands of goods and services, the struggles with environmental politics grow fierce. While environmental reforms seem to be a priority, this comes with a price. The costs of environmental improvements usually come in the form of higher prices for the consumer; for example, the price of hybrid vehicles or energy efficient appliances, which are North American and Euro-Western “problems.” In most of the rest of the
world hybrid cars and energy efficient appliances are not the issue. As Eckersley (1992) elaborates, “the growing tension that developed between the demand for environmental reform on the one hand, and redistributive justice and economic security on the other hand, has remained an enduring and vexed issue in ecopolitical discussion” (p. 10). In other words, concern should target population and economic growth, and the problem of everyone ‘wanting more’—not about balance. Despite this, environmental concerns of the past are still present, only at much higher degree, and will continue to grow in the future. Eckersley further elaborates: “Moving from the anthropocentric toward the ecocentric poles, major positions on environmentalism are resource conservation, human welfare ecology, preservationism, animal liberalism, and ecocentrism” (p. 34). Eckersley goes on to explain how these positions on environmentalism have had more influence in some countries than in others.

Many of the above positions on environmentalism are focused on an ecocentric approach, rather than an anthropocentric one, and the question about what the individual can do to make a difference remains. Without a critical and theoretical shift, these streams of environmentalism will not easily interconnect. Nonetheless, present-day interest and concern over environmental issues by the general public is arguably at an all-time high. As a result, many governments and industries have discovered they can influence the publics’ enthusiasm and keenness on environmental matters for their own economic gain. The automobile industry and the growing interest in hybrid cars provides a good example of this. Society is being painted “green” with products, but with little or no critical reflection of why and how
these products have been tagged with that distinction. Governments have also realized they have unprecedented access to the next generation. Media, such as television and internet, are direct links into the minds of easily influenced children and youth. Moreover, access through the education system, and the curriculum taught in schools, is government created, controlled, and manipulated.

An example of a popular tool being used in the classroom is the documentary mentioned earlier, “An Inconvenient Truth”, by Al Gore (2006). Gore used the documentary as the medium for communicating this issue, as he could not get his message of climate change across through the political process alone. This documentary is commonly used in science and geography classrooms in the school where I teach because it directly relates to some of the curriculum expectations in those disciplines. Therefore teachers are using this documentary as a lesson of what is being done to contribute to large-scale environmental degradation. Gore’s documentary covers such expectations in the Grade 10 Ontario Applied Science curriculum as, “Analyzing natural and human threats to a local ecosystem and propose viable solutions to restore ecological balance” (Ontario Ministry of Education, 1999, p. 26). However, in the Gore documentary very little is mentioned of what can be done as individuals to better understand what is required to best address local and global issues on a political and policy front. And as Noddings (2005) points out, it is this individual and collective critical thinking that is vital:

Because environmental issues are so complex, they provide a wonderful opportunity for critical thinking. As educators, we want young people to make a commitment to preservation of the natural world. However, a real commitment demands engagement, study, and critical thinking of the most
difficult kind – thinking that examines and questions our own initial positions. (p. 59)

Opportunity for critical thinking is what is lacking in both the documentary, and the Ontario curriculum. Without an adequate teacher’s guide, for example, to accompany Gore’s documentary, and without sufficient time, resources, and training for teachers to teach about the environment, engagement, critical thought, and personal examination on the part of many students may be lacking.

Recently, the Ontario government released a curriculum document entitled, “Ready, Set, Green!” (Ontario Ministry of Education, 2007). This document includes current environmental initiatives, which students and teachers are participating in around the province, and resources for the teacher’s classroom. While looking through this manual, many things caught my attention. There are excellent courses offered throughout the province, in different school boards, regarding Environmental Education; courses which may give the student hands-on learning and experience beyond the classroom, and may promote critical thinking, which as Noddings (2005) points out, is very important.

However, there may be problems in the use and implementation of the “Ready, Set, Green!” document. First, courses listed in the document are not offered in all boards across Ontario, and second, they are elective courses, which students may, or may not take throughout their secondary school career. This leads to another contentious issue. Many of these courses in the grade eleven and twelve streams are being cancelled around the province due to lack of funding and student interest. For example, in a school board in eastern Ontario, an elective Outdoor Education
program is being offered for the last time for those very reasons. Most troublesome, however, is the fact that messages from the Ontario government seem to be individualistic in nature. Chawla and Cushing (2007) speak to this point:

> An analysis of the world’s most serious environmental problems, however, suggests that the effect of private actions is limited unless it is combined with organizing for collective public change. If environmental educators confine themselves to fostering private sphere environmentalism, they may in fact be leading students astray. (p. 438)

Most recently, the Ministry of Education document, *Shaping our Schools, Shaping our Future: Environmental Education in Ontario Schools*, also known as the “Bondar Report” (June, 2007) is a report of the working group on Environmental Education. This piece of writing was developed by a committee of Canadian educators, government representatives, and scientists, and chaired by Canadian astronaut Roberta Bondar, chosen in part because of her high profile and influential position as a leading Canadian scientist. This document reviews the current curriculum, proposes an Environmental Education policy, and suggests changes for the future—both in teacher education reform and program implementation. In developing its recommendations for Environmental Education in Ontario, the Working Group examined policies, programs, and practices in Ontario, across Canada, and around the world. The recommendations call for the development of an Environmental Education policy for Ontario schools, and include detailed consideration of the key elements of such a policy across the critical domains: Leadership, Curriculum, and Teaching & Resources. (Ontario Ministry of Education, 2007)
Bondar sets the tone of the report by explaining why she became interested in this topic.

After observing the planet for eight days from space, I have a deeper interest and respect for the forces that shape our world. Each particle of soil, each plant, each animal is special. I also marvel at the creativity and ingenuity of our species, but at the same time, I wonder why we all cannot see that we create our future each day, and that our local actions affect the global community, today as well as for generations to come. (Ontario Ministry of Education, 2007)

The working group, that is the committee members that developed the report, 
*Shaping our Schools, Shaping Our Future: Environmental Education in Ontario School* 
iece, state the importance of schools in curbing the environmental crisis. They indicate that over the past decade, changes in the Earth’s environment and the state of natural resources have emerged as a matter of increasing concern around the world. However, the Bondar Report goes on to say that while the issues are complex and diverse, there is a shared and universal recognition that solutions will arise only through committed action on a global, national, regional, local, and individual scale. Schools have a vital role to play in preparing our young people to take their place as informed, engaged and empowered citizens who will be pivotal in shaping the future of our communities, our province, our country, and the global environment (Ontario Ministry of Education, 2007). The report points out the lack of consistency regarding EE in Ontario. However, without a complete and thorough framework on which to base programs, I fear we’re fighting a losing battle, and I concur with the Ministry of Education’s assessment:

For many years, promising elements of Environmental Education have been reflected in Ontario’s curriculum, and supported by innovative programs and partnerships developed by school boards and schools across the province. In
the absence of a comprehensive framework for environmental education however, these efforts remain fragmented and inconsistent. (Ontario Ministry of Education, 2007, p. 1)

Furthermore, the report argues that a substantial gap remains between these current practices, and a comprehensive approach to Environmental Education in Ontario schools. The report describes the gaps that exist at every level of the system:

- The reorganization of curriculum in the late 1990’s significantly reduced the opportunities to study the subject of the environment as a result of eliminating optional courses in environmental science. Environmental expectations embedded in some course remained.
- Few faculties of education offer Environmental Education as a teachable subject, or offer specialized programs in environmental studies for teacher candidates.
- Subject associations such as the Council of Outdoor Education in Ontario (COEO) and the Ontario Society for Environmental Education (OSEE) have seen dramatically declining membership.
- It is only, with the introduction of a new Program Enhancement Grant, that annualized funding is being provided that may be used to support outdoor education.
- In the absence of specialized teacher training and expertise, there is likely a gap between Environmental Education “intended” in Ontario’s curriculum and that which is taught and received in the classroom.

(Ontario Ministry of Education, 2007, p. 2)

The vision of this working group for Environmental Education in Ontario is to have students be “prepared with the knowledge, skills, perspectives and practices they need to be environmentally responsible citizens” (Ontario Ministry of Education, 2007, p. 4). They go on to say that students will understand our fundamental connections to each other and the world around us through our relationship to food, water, energy, air, and land, and our interaction to all living things. Ultimately, it is the education system which will provide opportunities within the classroom and the community for students to engage in actions that deepen the
understanding (Ontario Ministry of Education, 2007). The working group states the intended outcomes for students, the context in which this learning will take place, new curriculum policy, teaching and learning strategies, and the roles and accountability of schools, boards and government:

1. Students will acquire the knowledge, skills, perspectives, and practices they need to participate as responsible citizens at the local, national, and global level, caring for each other, and all other living things. The education system will fulfill its critical role in both delivering effective Environmental Education, and modelling environmentally responsible practices;

2. Environmental Education will provide a rich context for learning that engages all students in applying their knowledge and skills to real-world situations through an integrated approach, based on the environmental and sustainability concepts found in all relevant subject areas. Such a context will combine classroom learning with experiential learning, and provide opportunities to interact with, develop caring and concern for, and take action in the places students live, study, and play. It will provide connections between the curriculum and the world around us, allow students to directly observe impacts and issues, and expose students to the many points of view that must be considered in making choices to preserve the health of our environment;

3. Curriculum policy will clearly state what students should know and be able to do, as well as the perspectives they need to consider as responsible citizens in a changing world. While Environmental Education rests on a foundation of knowledge from both science and social science / geography, this knowledge will be applied across the curriculum. Environmental education will be reflected in an age-appropriate way throughout the K-12 curriculum through strands, topics, and expectations, and will be recognized as a provincial priority;

4. All teachers will be equipped with the knowledge and skills to effectively model and teach environmental education, individually and in collaborative practices. Teachers will have access to professional development required to build their confidence and competence in delivering environmental education;

5. Environmental Education will draw on effective learning strategies—including inquiry, problem solving, problem solving, critical thinking, and assessing alternatives—that engage students personally in their own learning, connect them to the world they live in, and give them the systems thinking and future thinking they will need to become discerning, active citizens;

6. In order to facilitate the effective design and delivery of Environmental Education, schools will adopt innovative policies for school culture, curriculum, facilities, and operations. Environmental Education will involve collaboration among students, teachers, parents, administrators, and the
community, and foster a habit of mind that sees, and seeks out, the interconnections in life, and across subject areas and disciplines;

7. The Ministry of Education will drive and support the development of environmental leadership at all levels of the education system. School boards and schools will demonstrate their commitment to environmental responsibility through their practices and operations, and engage students to actively apply their learning as environmentally responsible members of the school and broader community;

8. The effectiveness of Environmental Education in Ontario schools will be measured both on a system level and against clearly defined student achievement outcomes. The goals and content of and approaches taken to environmental education in Ontario will likewise be subject to cyclical review, to ensure that they remain dynamic and relevant in a changing world.

(Ontario Ministry of Education, 2007, p. 5)

The report also indicates the importance of environmental literacy. “An environmental literate student will have the knowledge and perspectives required to understand public issues and place them in a meaningful context. Thus, environmental literacy requires a mix of knowledge, vocabulary, key concepts, history and philosophy” (Ontario Ministry of Education, 2007, p. 6). The working group’s definition for Environmental Education is education about the environment, for the environment, and in the environment, that promotes an understanding of, rich and active experience in, and an appreciation for the dynamic interactions of:

- The Earth’s physical biological systems;
- The dependency of our social and economic systems on these natural systems;
- The scientific and human dimensions of environmental issues;
- The positive and negative consequences, both intended and unintended, of the interactions between human-created and natural systems.

(Ontario Ministry of Education, 2007, p. 6)

The working group recommends that a comprehensive environmental policy be developed for Ontario schools, taking into account the environmentally relevant
mandates of all Ontario government ministries, and reflecting the beliefs that the
students should:

- Examine the environment, not only in science, social studies, and geography, but also through the study of environmental topics and strands integrated and/or applied in courses across the curriculum areas;
- Explore multiple environments, including built and natural environments, living and inanimate environments, and local, national, and global environments;
- Engage in learning activities that are situated in the outdoor environment and involve actions that improve the environment; and
- Learn in schools that support environmentally sound practices.


Shortly after the announcement of these recommendations, the Ontario Ministry of Education announced its expectation for implementation of all these recommendations by January, 2008.

**The Ontario Government Follows Through**

“It is crucial to expose youth to Environmental Education so that they acquire the essential values, attitudes, commitment and skills needed to preserve and protect the environment” (Bradley et al, 1999, p. 17). As a result of the *Shaping Our Schools, Shaping Our Future* recommendations, the Ontario Ministry of Education recently released the new *Ontario Curriculum, Grades 1-8 (and 9-12) Environmental Education: Scope and Sequence* (June, 2008) documents. These documents outline how the government has infused and incorporated environmentally-related expectations, directly and indirectly, into all subjects in grades 1-8 and 9-12.

Following on the Bondar Report, which emphasizes the necessity of environmental
literacy in young people, these documents promote the study of environmental issues in a variety of contexts and disciplines. The documents indicate that most of the environmentally-related expectations in the elementary and secondary curricula are found in Science and Technology, Social Studies, History, and Geography. However, the documents outline opportunities for teachers to not only teach environmentally-related principles in the aforementioned areas, but also in disciplines such as the Arts, Health & Physical Education, Languages, and Mathematics. Can this be done? More importantly, will this be done?

An example of an expectation directly related to the environment is taken from the 2007 Grade 8 Science and Technology curriculum guidelines. Within the strand of “Understanding Earth and Space Systems: Water Systems”, students “assess the impact of human activities and technologies of the sustainability of water resources” (Ontario Ministry of Education, 2008, p. 35). Another example, indirectly related to the environment, and also listed in the Environmental Education: Scope and Sequence document, is taken from the 1998 Grade 8 Health & Physical Education curriculum guidelines. This expectation outlines how “students can develop an appreciation of the natural environment, gain an experiential knowledge of the environment, and develop the problem-solving skills necessary for an environmentally literate citizen, as students apply living skills in physical activities” (Ontario Ministry of Education, 2008, p. 37). However, in order for students to be able to “assess the impact of human activities and technologies of the sustainability of water resources”, or “develop an appreciation for the natural environment”, teachers need to be able to make this assessment, or have this fundamental
appreciation. Lack of teacher knowledge and awareness means these issues will not likely be addressed adequately.

With many past and present Environmental Education researchers stressing the importance of education reform in our school system, it will be worthy of noting exactly how these recommendations, both from the Bondar Report and the Scope and Sequence documents for elementary and secondary teachers, will “trickle down” into classrooms, and ultimately student learning, across the province. In light of what currently exists in the curriculum to guide teachers at the time of this research, and the aforementioned proposed additions, ultimately the question remains: Will this new and supposedly improved infusion model work?
CHAPTER THREE

METHODOLOGY

Introduction

The goal of this qualitative research is to understand a social phenomenon from the perspectives—the constructed meanings—of the participants (McMillan and Schumacher, 2006). In this study, I was interested in how a small group of secondary students in a rural community in Eastern Ontario make sense of issues concerning the environment. This qualitative study first used a survey, to understand these students’ experiences with Environmental Education in school. At the end of the survey students were able to self-identify as wishing to participate in a focus group session. What follows is a detailed description of how I proceeded methodologically in this research.

Purpose of Methodological Approach

Following a qualitative research design, this study used two methodological approaches: a) surveys; and b) focus groups. Questions in the surveys and focus group interviews explored the pedagogical elements of the secondary school Environmental Education curriculum as it related to participating students' understanding of environmentalism. The results of this research are intended to inform our understanding of how Environmental Education courses may be delivered more effectively in secondary schools. My role as the researcher, using a survey and
focus groups, provided an opportunity to explore the context of how students create meanings for environmentalism.

**Recruitment and Sampling**

The participants in this study were rural secondary school students in Eastern Ontario. The school has a population of approximately 950 students, ranging from Grades 9 through 12. Following the completion of the Ethics Review protocol of Queen’s University (see Appendix A), both the school board and the administration were contacted for permission to conduct the research in the school in which I collected the data. Since the research participants were in senior secondary school, neither the School Board nor the administration required parental consent. Following the examination of the research methodology, the local school board and school administration consented that the nature of the information accumulated and the procedures outlined were fair and ethical. No names were used on the surveys; students were identified only by number, which were used only for the purpose of organization. In addition, the survey instructions gave students the option of not completing the questionnaire.

I accessed these students by following the local School Board protocol in which the school was located. The approaches to recruitment are outlined below:

A) Recruitment of survey participants: I attended grade 12 classes, and read the recruitment script (see Appendix B).
B) Recruitment of focus groups participants: Participants for the focus group interviews self-identified at the end of the survey. I subsequently contacted them via email with details regarding the focus group sessions.

**Data Sources and Collection**

A survey, in the form of questionnaires, and semi-structured in-depth focus groups (approximately 35 – 45 minutes in length), were conducted with secondary students to gain insight into how they construct meanings for environmentalism, and why they choose to take, or to not take, senior-level elective environmentally-related courses. Given they were senior students in secondary school, who had already completed compulsory Grade 9 and 10 courses with environmentally related expectations, and were at the stage where they could choose to take elective courses in Environmental Education, I believed they had insight into why they chose to take, or to not take, environmentally-related courses. The questionnaires served to limit and define issues that were important to understanding how students created meaning for environmentalism, understand why they chose to take these courses, and informed the focus group interview questions for students.

*Surveys:* McMillan and Schumacher (2006) state that survey research takes place when “the investigator selects a sample of respondents from a larger population and administers a questionnaire or conducts interviews to collect information on variables of interest” (p. 233). The surveys in this study were used to learn about these students’ attitudes, beliefs, values, behaviours, opinions, habits, desires, and ideas.
about environmentalism. More importantly, responses to questions on the survey formed the basis for focus group questions. Survey questions are provided in Appendix D.

McMillan and Schumacher (2006) state that surveys are frequently used in such fields as education, as “accurate information can be obtained for large numbers of people with a small sample” (p. 233). Surveys can also be used to explore themes and relationships. I included both descriptive and explanatory questions in the survey that I handed out to the grade twelve students (see Appendix C).

McMillan and Schumacher point out, “Surveys are versatile because they can be used to investigate almost any problem or question” (2006, p. 233). Furthermore, they can be used to gain plausible information from a large population, at a relatively low cost, and will allow for generalizability across the same population—in this case, grade twelve students in Ontario. In preparing the survey, it was important to make items clear, relevant, short, and simple in the questionnaire. I was also cognisant not to allow my own personal bias about the topic to come through in the way questions were worded and asked. Therefore, I included a combination of both open and closed form questions, scaled items, and checklist items. This aided in both the respondent answering questions more quickly, and my ability to analyze the data accumulated in a timely fashion.

Surveys were completed by 84 grade 12 students (see Appendix C). Initial contact was made, via email, to all grade 12 teachers in the school. In that email, I asked teachers if I could attend their grade 12 class for a short period of time (approximately 15 minutes) when I would describe the research and ask students to
complete the survey. Teachers responded with a time that was convenient for me to attend their classes. Most indicated the first or last 15 minutes of their classes. When conducting these surveys with the grade 12 classes, the teacher remained in the classroom. I read the recruitment script (see Appendix B) and handed out the survey to those students who agreed to participate. On the survey, students were asked what they understood environmentalism to be, if they were currently enrolled or had been enrolled in an Environmental Education course, and questions related to where and how they learned about the environment. Information gained from the survey was used to formulate questions for the focus groups.

**Focus Groups:** A variation of the archetypal interview is the focus group interview, which is used to obtain a better understanding of a problem or an assessment of a problem, concern, new product, program, or idea. Therefore a purposefully sampled group of people is interviewed, rather than each person individually (McMillan and Schumacher, 2006, p. 360). It was my hope that this approach would elicit depth, detail, vividness, nuance, and richness (Rubin & Rubin, 2005, p. 134), by students stimulating each other with their own perceptions and ideas. As a result, I expected an increased quality and richness in data. I also endeavoured to determine, in depth, what the students know about topics related to environmentalism; for example, causes of environmental degradation, human actions impacting the environment, human’s role in relieving stress on the planet, marketing of products said to be “environmentally friendly”, and society’s role in students’ perceptions of environmentalism (see Appendix D).
McMillan and Schumacher (2006) state the group leader or facilitator should be skilled in both interviewing and group dynamics (p. 360). With my years of teaching secondary students, I believe I am adequately skilled in both. For complex topics, it is recommended to have smaller groups, consisting of five to seven participants; I had two groups of two, and one group of seven respectively in three focus groups. I posed initial and periodic questions regarding such topics as, “environmental footprints” and “sustainability”, ultimately trying to establish a link between what is supposed to be taught in the classroom, according to the formal curriculum, and what students believe themselves to be learning regarding environmentalism.

As Patton (2002) points out, focus groups, like all forms of data collection, also have limitations. The number of questions asked can be restricted in a group setting; the available response time for any particular individual is restrained in order to hear from everyone; facilitating and conducting a focus group interview requires considerable group process skills; those who realize that their viewpoint is a minority may not be inclined to speak up; and focus groups typically take place outside an area where social interactions normally occur, to name a few. In order to overcome some of these obstacles, I limited the number of questions to ten, per one hour session, and I conducted the focus group sessions in the school where the students attend classes, where they are comfortable conversing with their peers. Focus groups were audio taped and transcribed verbatim. This provided rich data for my research. One challenge in audio taping each focus group was when more than one person spoke at the same time. However, as the facilitator of the focus group, I reminded
students of the importance of letting people finish what they were saying and to not talk at the same time.

Of the 84 students who completed the survey, 20 students indicated an interest in participating in a focus group. The 20 students who self-selected to participate in a focus group, checked a box indicating they were interested, and gave their name and email address or phone number to be contacted. They were contacted within a week of completing the survey, all via email, to set up a time that was convenient for them to participate in the focus group. Due to time and work constraints, however, 11 out of the 20 initially contacted, ultimately participated in a focus group. The focus groups were held in a library seminar room, which is a separate room with glass walls. Therefore, people outside in the main library could see us, but not hear us. The first 2 focus groups, focus group #1 and #2, consisted of two students in each, and the final focus group, focus group #3, consisted of 7 students. During the focus group, students were asked questions about their understanding of environmentalism; what they thought were the biggest environmental concerns in Canada and worldwide; their perception of the current curriculum; and details concerning their current lifestyle choices.

**Organization of Focus Group Data**

All focus groups were audio-recorded and transcribed. Detailed, descriptive notes (dated and recorded as to the time of day, date, and type of activity) were taken to further document discussions of the students during the focus groups. During, and shortly after the focus groups, I jotted down accounts of what happened. During a
follow-up meeting, transcripts were member checked for accuracy, clarification, and to ensure that each of the participants was comfortable with what was included in the results. Focus group transcriptions were coded and codes for pedagogical elements were matched with codes of student responses that often occurred together. Rubin and Rubin (2005), state that the first stage of analysis is “recognition.” During this stage I established themes, concepts, events, and topical markers. The next stages, according to Rubin and Rubin (2005), are “clarification” and “synthesis.” I proceeded using the following, more detailed, format outlined by McMillan and Schumacher (2006). After reading, and re-reading my notes from each source of data, that is the surveys and focus groups, a descriptive code was written in the margins of my notes and verbatim transcripts. A list of codes from each data source were compiled and checked for duplication. I refined codes, and added more codes, as I further examined the data gained. Using inductive analysis, I grouped codes together under major themes that emerge. Each data source was colour-coded for easier identification.

I was cognisant to examine and re-examine all sources of data to identify connections and themes, and return to the individual sets of data for verification, which was extremely important to this study; such analysis is considered deductive. Qualitative research aims to access the ways in which individuals make meaning of concepts, their experiences, and the world in which they live. What was also important was to relate the data back to my research questions and my theoretical frameworks, which helped in finding patterns and themes.
Trustworthiness of the Study

Qualitative research must employ various techniques to enhance trustworthiness and validity in any study. McMillan and Schumacher (2006) detail various strategies to enhance validity in a qualitative research study. I will discuss four of these strategies as they pertain to my study: Multi-methods, verbatim accounts, low-inference descriptors, and mechanically recorded data (McMillan and Schumacher, 2006, p. 324). I employed two data collection strategies, survey and focus groups, to enhance trustworthiness in my study. These two data collection methods also allowed triangulation of data across inquiry techniques, aiding in the authentication of the data collected. Accurate verbatim accounts of each focus group were also vital in ensuring trustworthiness of this study. This data collecting technique enabled me to use students’ words and phrases as much as possible, giving accuracy and authenticity to the data. Along the same lines, low-inference descriptors are concrete, precise descriptions from field notes and interview elaborations, which are the hallmarks of qualitative research and the principle method for identifying patterns in the data (McMillan and Schumacher, 2006). I examined and re-examined audiotapes of the focus groups, as well as documents used to collect data to identify patterns.

Focus group discussions were audio-recorded. According to McMillan and Schumacher (2006), audio recorders, photographs, and videotapes provide accurate and relatively complete records of data. I used an audio recorder for each focus group, and noted any situational aspects of the data that was affected: for example, the effects of using an audio recorder on how this technology influences participant
communication and involvement. This strategy was important in terms of making notes of any views that contradicted the emerging patterns in my research; that is, negative and/or discrepant data. For this approach, I actively searched for, recorded, analyzed, and reported complex data. Such an approach highlights contradictions, complexities, and fissures as the ground for deeper analysis than simpler and apparently seamless data would produce.
CHAPTER FOUR

ENVIRONMENTAL EDUCATION AND THE SECONDARY STUDENT: RESULTS FROM SURVEY AND FOCUS GROUPS

Introduction

The major themes extracted from the data, which link back to the guiding research questions posed initially in this study—how students develop an understanding of environmentalism, the factors influencing students to take, or to not take, senior elective Environmental Education courses, and how their construction of meaning may inform curriculum development in the area of Environmental Education—were collected through a survey and focus groups. These revealed valuable insight into how students in this rural eastern Ontario secondary school construct meanings for environmentalism. In this chapter, I present the data, identify the themes, and discuss how the themes relate to the conceptual framework.

Survey – Developing a Base for Focus Group Questions

Ten questions were asked on the survey (see Appendix C), which formed the basis for later focus group discussions and questions. Eighty-four grade 12 students completed the survey, with 20 students indicating an interest in participating in a focus group as a follow-up to the survey.

The first question students were asked was their definition of environmentalism. As indicated throughout this study, Meyers (2001) defines
environmentalism as the collective concern for the preservation and restoration of the natural environment (p.22). Most students had a fairly good understanding of what environmentalism is, with answers such as “being aware of the environment”, “learning the needs and workings of the natural surroundings”, “learning and practicing conservation methods”, “encouraging others to be conscious of their impact on nature”, “a socio-political movement, which aims to create awareness within the general population about issues, and inspire action on both an industrial and a grassroots front”, and “the study of the environment; working to protect and maintain it.”

Of the 84 students who completed the survey, 15 students indicated they were currently enrolled in a grade 12 Environmental Education course. That is, a two-credit Outdoor Education class, with the two credits being Grade 11 Physical Education and Grade 12 Environment and Resource Management. These students were asked to describe their experiences within the course, with most responses being positive. The other 68 students were asked the reason they did not take a senior elective environmental education course. Three responses were indicated consistently: They did not want to; it is a dual-credit program, and they could not fit the two courses into their timetable, with the many other prerequisites needed for certain post-secondary programmes at colleges or universities; and their perception of the dual-credit program was that it weighed too heavily on the Physical Education component, and not enough on the Environment and Resource Management component.
Students were also asked to fill in a chart (see graph below), stating their opinion on such statements as “I learn most about the environment in school”, and “I learn most about the environment through the media” (see Appendix C). The majority of students indicated they learn most about the environment outside of school, through the media and through family and friends. Figure 1:

![Chart: Where students learn about the environment]

Of the 84 students who completed the survey, 45 students indicated they “disagreed” or “strongly disagreed” that they learned the most about the environment at school. On the other hand, 72 students “agreed” or “strongly agreed” that they learn the most about the environment through the media.

As a follow-up to filling out the chart on the survey, students were then asked how many times during the school day they read or heard about the environment. 57 out of 84 students indicated they read or heard about the environment in school “3 or
fewer times per week” or “never”. Of the students who indicated they heard or read about the environment in school, it was in Outdoor Education, Science, or Geography classes. When describing what exactly they were hearing and/or reading about the environment in their classes, some students indicated they were learning about how people can help the environment (i.e., recycle, reuse, change light bulbs, etc.), statistics regarding how people are polluting the environment, and policies and government action. It is important to note that the students, who indicated they heard about environmental issues in their classes, also indicated they heard very little in terms of solving these problems.

When students were asked how many times they heard or read about the environment after school and on weekends, 65 out of 84 students indicated “4 or 5 times per week” or “everyday”, via the news, movies, and the internet. Again, they were asked to describe exactly what they read or heard, and many students indicated “all the bad stuff that is happening in the world”, and “tornadoes, floods, melting polar ice caps”, etc. It is important to note once more that students who indicated they heard or read about the environment frequently outside the formal school setting, also indicated they heard about all the problems, but again, a minimal amount of solutions to these problems were offered.

Students were then asked if they would like to learn more about any of the following: Global Warming, Greenhouse Gases, the Kyoto Protocol, Alternative Energy, and Activities by Local Government/Groups. Fifty-five students indicated they “strongly agreed” or “agreed” they would like to know more Global Warming; 64 indicated the same for Greenhouse Gases; 84 students for Kyoto Protocol; 82 for
Alternative Energy; and 43 for Activities by local government and groups. The remainder of students who indicated they were “neutral”, they “disagreed”, or they “strongly disagreed” that they would like to know more about these issues, also indicated that they felt helpless to do anything. “I hear too much about global warming in the media, and as an individual, I feel like I can’t do anything to prevent it, so learning more about it would not be useful.” Figure 2:

In addition, when asked if there was a topic, or topics, in the chart they were not familiar with, the Kyoto Protocol and Activities by Local Government and Groups were the items students indicated most frequently—52 students cited Kyoto Protocol, and 47 cited Initiatives by Local Government and Groups, out of 84 students who completed the survey.
At the end of the survey, students were asked to indicate if they were interested in participating in a focus group, as a follow-up to the survey. As indicated previously, 20 students denoted they would be interested, with 11 ultimately participating in the focus groups. Of the 11 students who participated, only 2 students from the Outdoor Education class participated. Questions raised in the survey, and subsequent answers and feedback given by the students formed the basis for questions in the focus group sessions.

**Focus Groups: Understanding of Environmentalism**

*Students’ Definition of Environmentalism:* The students’ perceived meaning of environmentalism varied considerably. While most students understood—to a certain extent—what the meaning was, some seemed to view the term environmentalism as the negative effects humans have on the environment:

*Interviewer – “Some of your peers say that environmentalism was a few things on the survey, they said it was being involved with the environment, the awareness of the environment, knowledge of the environment, effects humans have on our environment, etc… Do you agree with those definitions, and why or why not? What are your thoughts on it?*

*Student 3 (FG3): “Ya, I guess I agree because I just see environmentalism as like how it’s affected, and how we can reduce the negative effects on the environment.”*

More than one student claimed it was a “social-political” movement by the government, in order to provoke fear in Canadian citizens. Students were asked, as a
follow-up the survey, for their definition of environmentalism. Answers varied in terms of their perceptions of this topic.

Student 2 (FG2): “Um, it’s definitely awareness of the environment, basically it’s a large social-political group and thinking that we have to help the environment for future generations, it just branches out from that, I guess. I also think environmentalism is a combination of a lot of things, and it’s basically just a political movement more than anything that we have to try and help the environment, and it’s often, sort of, um, overblown.”

I asked what this student meant by “political movement” and “overblown”, and if they could expand those terms for me:

Interviewer – I’m going to ask you two things: First, what do you mean by a “political movement”, and second, what do you mean “overblown.” Expand on those for me.

Student 2 (FG2): “Well, political movement because um, it’s used as leverage for, um, party policies all the time, and it’s all essentially, um, difficult to put into words, and it’s in the interest of politics, and um, and people are constantly overreacting to the effects of global warming, right now it’s called “climate change”, um and I don’t buy it.”

In response to this, the other participant in this focus group said the following:

Student 1 (FG2): “I believe the general population doesn’t understand enough about it, I mean, to make clear, rational decisions. Which I do think is a problem. Not to the extent sometimes it’s made, because there’s a lot of companies and parties in our democratic system that try to gain, make profit, out of this system because it’s something that everyone’s concerned with, so... but I do believe there are some shadows there...”

It is quite interesting that this student seems to correlate a democratic system with a capitalist system. He essentially collapses the two structures together.
Confusion of what environmentalism is continues from the survey into the focus groups. Students in focus group #3 said the following:

Interviewer – “What do you think environmentalism is?”

Student 3 (FG3): “I think it’s just referring to the amount of greenhouse gases we put into the atmosphere, and how that affects our climate.”

Student 5 (FG3): “The gradual increases in temperature, and things are melting and flooding and stuff.”

Student 4 (FG3): “Greenhouse Gases, and polar ice caps, and what happens if it all melts down and we get ships through there, start trading and stuff.”

One student elaborated during the discussion on environmentalism:

Student 7 (FG3): “I don’t know if this is true, but what I’ve heard is that, like, the world goes through a big cycle and stuff, and we should be going into an ice age, if it wasn’t for global warming. I don’t know if that’s true or not.”

Another student in the same focus group said:

Student 3 (FG3): “I think it’s a bit of an exaggeration, um, like, we’ve only really been pumping out this stuff into the atmosphere for about 100 years, and I don’t think it’s as bad as they say it is.”

A couple of issues were raised during this discussion. Some students seemed to confuse environmentalism generally with just one issue—global warming. Furthermore, one student refers to “they”, with respect to a group of people exaggerating the consequences of global warming. Who did they mean by “they”? If I had the opportunity to conduct this interview again, I would pose this question to this student. Perhaps this student is talking about the media, or the government, when referring to “they.” Later in this chapter, I will elaborate what students said when I
asked them specifically about the role of media in their learning about environmental issues. However, it is important to first talk about what they felt were environmental concerns both nationally and globally.

**Student’s Perceptions of Environmental Concerns:** Many students are aware of a number of environmental concerns, both in Canada and in the world. Students indicated “water” and “energy” to be significant concerns not only in Canada, but on a global scale as well:

Interviewer – “What do you think the greatest environmental concern is in Canada right now?”

Student 2 (FG1): “Well, not so much, well I think something that would affect Canada, um, I think the water issue, in there being not so much fresh water, it’s an issue not because Canada has a lack of fresh water, but because of everyone else wanting it.”

Student 1 (FG1): “Um, ya, the water issue is pretty big.”

Student 2 (FG1): “I mean, I guess different specific parts of the world have different problems, obviously, if you’re way up north, the environment would be affected differently by different things, but if you’re at the equator, but in general I think the water issue is the biggest one that affects humans.”

Student 1 (FG1): “Ya, I would agree.”

In focus groups #2, students responded with slightly different views on the question of environmental concerns in Canada:

Student 2 (FG2): “Um, I think resources, renewable resources.”

Student 1 (FG2): “Same as Canada, just on a global scale, because you look at the amount of the population, expanding by, at this current time is astronomical, and there’s not enough, um, even the way we use energy, right now, and the way we harvest energy.”
Student 2 (FG2): “We don’t have enough, [inaudible], and China and India in particular, want to start living a western lifestyle.”

Student 1 (FG2): “I think the biggest problem in Canada is overcoming our transportation difficulty, it’s such a big country, there’s a lot of energy expended from transportation, and I think it’s not so much, necessarily, an environmental concern, overcoming that, but um, an energy concern, which is obviously very tied to the environment and resources, and um, whether they’re renewable or non-renewable, and how we approach getting sustainable resources.”

Student 2 (FG2): “Um, obviously people know about Kyoto, and all the different protocols and political movements behind it, but I think the things that’s most prevalent in their lives is to try and get through the days without spending so much money, and if they believe that they can do that with hydrogen, or whatever, they’re going to go for it.”

Interviewer – “You mentioned Kyoto. According to the survey, there were a lot of students who did not know what Kyoto was. Why do you think that’s the case?”

Student 2 (FG2): “Lack of coverage, I believe. I do uh know a little bit about it.”

Interviewer – “Do you hear about it in school at all?”

Student 1 (FG2): “It’s brought up every once in a while, most people don’t know what it is [pause]... Because it started a long while ago, and there was coverage for it, for a few years [pause]... and people just basically got bored of it, and it’s still a giant issue right now, and talks are ongoing, but here we’re not following through with our resolutions, I know the Nordic countries are, but Canada definitely isn’t, and, normally in Canada if we’re not doing something well, we just try to ignore it.”

This dialogue led nicely into a discussion about where students learn about the environment, and what exactly they’re learning. The students’ picture of environmental concerns domestically and globally seems to be media-driven. Many
students indicated they learn a great deal about the environment from the media (i.e., television, movies, and internet), especially movies:

Interviewer – “According to the survey, another popular way that people learned about the environment was through the media, through television, through movies, through the internet, etc. Would you agree or disagree with that?”

Student 2 (FG1): “I would agree with that.”

Student 1 (FG1): “If we don’t go looking for it, no one is going to tell you anything.”

Student 2 (FG1): “It’s not taught to you. The opportunities are there to learn more about it through different projects and stuff, but it’s not really taught to you by the teachers.”

Student 1 (FG2): “I would agree with that. I think that’s the way people are learning about the environment, in general.”

A concern would be the “Hollywood” approach to climate change taken in movies, and in turn, perhaps not taken seriously by students, or worse, that such large-scale devastation is shown, they feel helpless to do anything about it. There is also the issue of extensive environmental catastrophes taking place far from where these students live, and therefore an “out of sight, out of mind” approach being taken.

As media is typically image-based, and not experienced-based, as an educator, I wonder how this limits students understanding and critical thinking ability.

Furthermore, the student’s response and perceived solutions to environmental concerns—for the most part—were individualistic. Bowers (2001) asked the following questions when addressing background issues with an ecologically-focused curriculum:

Do they [students] recognize the skills, values, and theoretical and embodied knowledge they need to possess in order to participate in their primary
community and in sustainable activities within the local ecosystems? Are environmentally-oriented courses educating them in ways that perpetuate the scientific and technological management approach to the environment? Are students being given the understanding and skills necessary for living less consumer-dependent lives? (p. 149)

According to both the survey and the focus group interviews, the answers may be no. Students indicated very little opportunity in either school, or their community for environmentally-conscious activities and initiatives:

Student 1 (FG2): “Well, with world issues, they teach us how carbon emissions come back out of the air, what emissions are actually doing, what are the large producers of it, like methane is a big problem with rice production, and in science class they usually try to relate things, there are many applications for environmental sciences, but we don’t get into it so much.”

Student 2 (FG2): “I’d say the short answer is no.”

Interviewer – “Short Answer is no, as in you’re not learning anything?”

Student 2 (FG2): “No, we don’t really [inaudible], I don’t take biology classes, first of all, so I don’t learn anything about the environment there, and I guess in world politics we discuss it occasionally, like it comes up with, um, whatever, project somebody’s done, but we don’t talk about it and specifically learn about that.”

Interviewer – “What are you learning in your classes about the environment?”

Student 2 (FG1): “Not too much, in biology a bit, we learn a bit there.”

Student 1 (FG1): “I find a lot of the teachers, they know it’s important, and so you know, they’ll like, make you do some project and say on the side, this has to do with the environment, and if you’re writing an essay, like, this might have to do with the environment, so I think that individual teachers know that we have to do something about the environment, but just sort of how they plug it in, but it’s not in the curriculum, teachers teach about it themselves.”
Student 1 (FG1): “You’re not really learning about the environment, but teachers make you take what you’ve learned and apply it to the environment.”

Student 2 (FG1): “I find the same thing, like in Politics class; we sometimes talk about how the environment plays into that, like world politics, and how it relates.”

Student 1 (FG1): “Everyone knows it’s an issue, but nobody’s teaching about it, they just tell us to apply what we’ve learned to help benefit the environment.”

Student 2 (FG1): “It’s much more difficult when you have to learn about it on your own.”

Student 1 (FG1): “I don’t really know because I don’t really watch a lot of TV.”

Interviewer – “Where would you learn about the environment then?”

Student 1 (FG1): “Through friends, through conversations with people, listening to discussions [inaudible].”

Interviewer – “Do you see anything happening here at the school with regards to an environmental cause of some sort?”

Student 2 (FG1): “I don’t know if too many people in the school know about it, but last year our Amnesty group switched gears, and went a little environmental for the months of March and April, because we were helping out with the local Earth Day celebration [pause] um, but it wasn’t really much, it was, we did actually get other people from outside the group that were interested, they came and they joined, but it wasn’t really broadcasted, and it wasn’t…”

Student 1 (FG1): “I didn’t know about it.”

Student 2 (FG1): “That’s the only thing I can think of.”

Student 1 (FG1): “Nothing. Nothing at all… [pause] Oh, oh wait. There’s a couple guys who are trying to collect rechargeable batteries so they can bring them to the recycling place.”

Student 2 (FG1): “Well, there’s the recycling program in the school, where kids go around and collect pop cans, and do all that.”
The other student in this focus group indicated they were not aware of this initiative. This message was also expressed in the other focus groups:

Student 1 (FG2): “There’s a large degree of apathy within the student body, there’s different groups that try to promote human rights, and different issues around the world, and nobody seems to show great interest.”

Unfortunately, there were many students who seemed quite apathetic in their responses. However, it seemed as though this apathy stemmed from, not lack of caring or wanting to know, but rather lack of direction in their classes. Of the students who did express an interest in environmental issues, a feeling of frustration seemed to displace it. Much of this frustration stemmed from students feeling they did not have access to, and/or were not receiving adequate Environmental Education in their school, and therefore were ill-informed on the subject. However, a two-credit Outdoor Education, with one credit being Environment and Resource Management, was offered during the time of data collection. Therefore, the questions remained. Why did they feel they were ill-informed, and why did these students not enrol in the course?

**Students’ Perception of the Current Curriculum:** Students’ awareness of the current curriculum, and specifically what they perceive they are or are not being taught, led to many different responses about the reasons behind these supposed discrepancies in the curriculum. Students do not know, or are not always aware of the importance of a lesson, or what a teacher may be presenting in any given subject or class. It is therefore important to reiterate that these were students’ experiences and
understandings of the current curriculum, as their comments do not necessarily reflect what is actually written in the programme of study:

Interviewer – “Do you think that our curriculum has enough in terms of environmental education? You are all grade 12 students, so you know quite a bit about the curriculum from grades 9 – 12, do you think there’s enough in there?”

Student 3 (FG3): “I think it really depends on the stream of student you are, whether you get exposed to environmental information or not.”

Student 4 (FG3): “I disagree entirely. We do not have the option to take environmental classes.”

Student 3 (FG3): “No, but if you’re not in the science stream, really, besides taking outdoor Ed., which is a 2-credit course, which many of us don’t want to take, or do not want to do all the physical stuff, which is really the only course or program that exposes you to environmental education, unless you’re in the science stream.”

Student 2 (FG3): “But even if you are in the science classes, you don’t necessarily learn a lot about the environment.”

Student 4 (FG3): “I agree with that. You either learn nothing, or very little, those are your options pretty much.”

Interviewer – “So you’re saying the only courses that you learn environmental education, besides science classes, is outdoor education. And out of 7 of you sitting here, only two are in the course. Why is that?”

Student 5 (FG3): “Because it’s a 2-period, 2-credit course, and it’s hard to fit it into your schedule, because a lot of people take a spare in grade 12, and you have to have a certain amount of courses, and certain types of course, when you graduate, and a lot of people have to have prerequisites for university and for college. You just don’t have room.”

Student will inevitably take courses that are prerequisites for university or college programs to which they are applying. Furthermore, since most students are
graduating secondary school after four years, for many students there is little room in
their secondary school program to take elective courses, since the number of
prerequisites required for many post-secondary programs are copious and specific.
And as stated by the following student, if they have a period in which they could
possibly take an elective course, often their course workload from their compulsory
courses dictates the need for a free period, or spare:

   Student 3 (FG3): “Yes, and in terms of what I’m doing next year, I really don’t have time in my course load not to take my spare.”

   Student 5 (FG3): “Ya, and my sister’s in grade 11, and she wanted to take Outdoor Ed., but she had to take in grade 12, 6 university courses, and Outdoor Ed. is one university and one college course, so she would be short one course. So, that’s why she couldn’t take it, because she needs 6, and if she took it, she would only have 5.”

   Student 4 (FG3): “That’s what happened to me.”
   
This student is referring to the senior elective Environmental Education course
that was being offered at the school at the time of data collection, which is a two-
credit Outdoor Education course consisting of one university level course, and one
college level course.

   Students ensuring they had the proper prerequisites was certainly a priority in
this case. Having said this, it is important to note that universities and colleges might
perhaps take some responsibility for the prerequisite courses they require from all
students entering their programs. Why are EE courses not required for programs in
post-secondary institutions? Is this not a vital issue during these times, which affects
all disciplines in some way? Since it was clear that many students seemed not to be


learning enough about the environment in their classes, according to participants, I asked these students if they thought they should be learning more:

Interviewer - “Do you think you should be learning more about the environment? If so, where do you think that learning should take place? Is there a class in particular?”

Student 2 (FG2): “I think there should be an option to learn about it, um, and, you can’t really go into any set classes that we have currently in this school, it would have to be an environmental studies class specifically for people who want to learn more about it.”

Student 1 (FG2): “I’d have to go with the same answer.”

Conversely, should everyone not have to learn more about the environment in school? In terms of specific knowledge we already think is imperative—that is, English, Math and Science—should Environmental Education be included in this list? Could it be?

It is also interesting that these students indicated that there were no “set classes” in the school that they considered to be environmental studies when there was a two-credit Outdoor Education course running at that time of data collection. Were they then unaware of the course that was currently running in the school? Or did they not consider the course to be an Environmental Education course? Or were they referring to having a single-credit Environmental Education course? In addition, these two students also agreed with each other that there should be an elective Environmental Education course for people who want to learn more about the environment. It is disheartening to see that there are students who presumably do not want to learn about this issue:
Interviewer – “So, do you take classes that have an environmental component in them?”

Student 7 (FG3): “You do learn about other things about the environment in classes such as chemistry, physics, biology, not really physics as much.”

Student 5 (FG3): “Biology.”

Student 1 (FG3): “Biology for sure, but more or less about the mechanics of what’s happening.”

Student 1 (FG2): “Ya, I take biology, which there’s definitely a large environmental component to it, and world issues [inaudible], I think it’s kinda hit and miss at this school, you could take a bunch of classes where you could get a lot of information about it, but you can take other classes where you won’t at all [pause]... so maybe one way would, there’s a weather portion in grade 10 science that you could probably do away with and change it to environmental science.

Student 3 (FG3): “You do learn about other things about the environment in classes such as chemistry, physics, biology, not really physics as much, but I definitely would say biology.”

Certainly the consensus in all the focus groups was that their grade 12 Biology class was where they learned the most about the environment. However, a few students pointed out that teachers, no matter the subject, did not go into detail about what is specifically happening with the environment. Moreover, one student added, and others agreed, that teacher knowledge may be lacking, which has serious implications for Higher Education, and Teacher Education in particular. Samuel (1993) found that attempts to infuse Environmental Education into the school curriculum caused confusion because of the limited knowledge teachers possessed in the subject. In my research students expressed it this way:

Student 7 (FG3): “Except no teachers in this school go into depth about why things are happening, they just talk about how greenhouse gases are bad, don’t use your car.”
Student 5 (FG3): “Well, I think it’s because they don’t really know.”

Yet other students in this focus group pointed out that grade 12 Chemistry and grade 12 World Issues offer a different perspective on Environmental Education:

Student 3 (FG3): “But in a class like in chemistry, you get it broken down, like your engine actually doesn’t burn all the fuel, then you get the carbon chain coming out the back of your exhaust.”

Student 1 (FG3): “There’s a bit done in world issues, it’s like a geography class, and they do a lot with like, uh, environmental cycles and stuff, and CO2 emissions, and the impacts mostly, causes and impacts.”

Two ideas emerged from these conversations: Students’ believe that a) environmentally-related criteria is limited in the curriculum itself, and/or b) teacher knowledge about the subject is lacking, and therefore it is not being taught, even though it may be present in the curriculum itself. While they may be correct, environment-related expectations are, in fact, written into the prescribed curriculum. The students’ perception of limited teacher knowledge, may be a result of different factors: 1) Teachers may perceive that environment-related expectations are being taught to students, but if learning is not taking place, there would appear to be a lack of relationship between teaching and learning; 2) Teachers may not be comfortable teaching environmentally-related expectations in their specific course, because they do not have the background knowledge of the subject to feel comfortable teaching those topics. In a study done by Powers (2004), which reports on the ways in which EE theory and practice are currently incorporated into the elementary Science and Social Science method courses, the author found that in formal teacher training programs teachers had limited access to Environmental Education content and
methods. Teachers are not well prepared to integrate EE into their classrooms and inadequate teacher training is the predominant reason K-12 teachers are not teaching EE or are unsuccessful in doing so even when they attempt it (Gabriel, 1996); and 3) Teachers may not be teaching these expectations due to lack of time and resources (Puk & Behm, 2003; Robertson & Krugly-Smolska, 1997), which means it has not been prioritized at the policy level.

It may be assumed that most students do not read curriculum documents, and therefore do not know what is actually written in them. However, it is important to highlight their perceptions, as the issue is not what is being taught, but what the students perceive themselves to be learning. Some students indicated they were not taught anything about the environment in any of their classes. Other students indicated they were taught different aspects of EE, in various classes, but also indicated they found it difficult, and felt they did not have the opportunity in any class to “bring it all together.” As a result, it was important for me to ask students if they would enrol in more elective Environmental Education courses if these were offered; or, if such a course was mandatory, how they would feel about it.

**Elective vs. Compulsory Courses in Environmental Education:** As a follow-up, I asked students how they felt about a compulsory Environmental Education course.

Interviewer – “O.K. If there were more elective environmental education courses, would you take them?”

Student 2 (FG2): “Personally, no.

Interviewer – “Why?”
Student 2 (FG2): “Um, I’ve never been all that interested in the environment, in general, so, um, and given that I have to take all these maths and sciences, I just can’t fit it into my timetable, even if I wanted to.”

Student 1 (FG2): “I’d have to say the same thing, I believe I do know enough about it, not enough that it would rival what I would learn in a full course, but I know enough to make it in the world, and talk about these issues, and I just don’t have enough time to take a course.”

I was fascinated, and somewhat disturbed, by the comments made by these students—that they are not interested in the environment. Legitimately, one might ask why not? Are they overwhelmed with media coverage, and the seemingly disheartening messages they are receiving from that particular outlet? The bigger picture here is that there is a lack of understanding of EE as critical, fundamental knowledge of all citizens. By saying they are not interested in the environment, they are essentially saying the environment is not important to life.

Both students also indicated a lack of time to take such a course. Again, these are students that are looking at post-secondary programs and taking the prerequisite courses in secondary school to fulfill these requirements. It might be legitimate, therefore, to look at post-secondary institutions to take some responsibility for not making Environmental Education courses a prerequisite for entry into post-secondary education:

Interviewer – “What if there was a compulsory course in education, which you had to take. How would you feel about that?”

Student 2 (FG2): “Um, I don’t know, it would seem fine if there was a compulsory course, but in reality, it would be difficult to institute a compulsory course that would develop, uh, a useful level of understanding, because in the upper grades there’s a lot of courses that are required for people who want to go into science,
or certain fields, so creating another compulsory course just complicates that, and most people in their beginning years aren’t, don’t understand, um, basic concepts.”

This student gives all the reasons for needing to engage a conceptual transformation process about what is important, or compulsory, and relevant.

Student 1 (FG2): “There’s definitely a basis of knowledge that you have to build before you understand [inaudible] and have enough time to build on it, you could make a start, but I don’t think making a compulsory course would solve the problem.”

Both of these students also agree that such a compulsory course would most likely be “in addition to” rather than “in place of.” The issue is the collective priority in the system, which is arguably conventional English, Math, and Science courses. The majority of prerequisite courses for post-secondary programmes fall under these aforementioned disciplines. Therefore, it was imperative to receive input from these students with regards to the system placing enough emphasis, or not placing enough emphasis, on environmental issues.

In another focus group, virtually all students agreed that if there was an elective or compulsory course in Environmental Education, it would have to be at the “University” level, or they would not be interested:

Student 3 (FG3): “Would it be a university course? Because I wouldn’t take it unless I could use it to get into university.”

Student 3 (FG3): “Ya, I would take it if it was a university-level course.”

Student 5 (FG3): “That would be a class, that maybe we could get something out of that we could actually use.”

Student 2 (FG3): “I definitely think we should have an environmental science class, at the senior level, because so many people are going into that right now [cross talk, inaudible].”
Student 5 (FG3): “I just find that I learn so much in so many of my classes that I'm never going to use again, like I'm never going to need that stuff ever again, but we would use that stuff everyday... but I think with an environmental ed class, that's only about the environment, you can take what you learn, and like change the world somehow, you can like take what you learn and make our world better.”

Students are once again pointing towards paradigmatic shifts in policy and the school system. While some students indicate a compulsory Environmental Education course may not solve the problem, more students are making it clear that, not only should Environmental Education be infused and incorporated into other subjects, such as Science and Geography, there also needs to be a stand-alone course to bring all concepts and ideas together. This will inevitably promote understanding, awareness, and action.

Additionally, one student made the point that they would take Environmental Education to open up more doors in the post-secondary job market:

Student 1 (FG3): “I think just career-wise, because there’s so many careers that are environmentally related... like researching it, ah, you know, like, a lot of companies have to like watch their backs now, and make sure they’re not damaging the environment, there’s so many jobs popping up.”

However, another student in this focus group said they would not take an environmental education course, and I asked this student why:

Student 4 (FG3): “Well, I want to go into business, and even though, like he said, it’s going to be a big thing coming up, but it just doesn’t matter to me.”

In essence, this student is proving the above point. This student does not make the connection between business and the environment—perhaps the most prevalent
connection of any. It is evident that students need a forum to make these connections, and therefore realize that it does, and should matter to everyone. As stated previously, not only infusion of environmentally-related expectations, but a stand-alone course in EE is vital. Most students in this focus group agreed, however, that a one-credit Environmental Education course would be beneficial to them:

Student 5 (FG3): “I think it would be a good time right now to introduce a course like that, because in the media right now it’s really big, and there’s global warming everywhere, and you know, like, the whole green bags at grocery stores, like there’s campaigns everywhere.”

Student 6 (FG3): “I’m interested in that kind of stuff, and I can’t afford to take a 2-credit class, so if there was a course like that, I would take it.”

Interviewer – “Do you think that the education system is placing enough emphasis on the environment?”

Student 2 (FG2): “I’d say it’s difficult to say, um, because on the one hand, teaching more about the environment, and risk boring everyone with the environment when they won’t care later [inaudible], or you could not teach them about the environment and risk people being undereducated, and don’t know what, and can’t talk about it at all, so...”

Therefore, the challenge is to make it understood to students how important environmental knowledge really is. Evidently they are not receiving these messages in their classes. What other subject matter would students say this sort of thing about? Is learning to read or do math “boring”? Do students perceive subjects such as Math, Science, or English “important”, and therefore not “boring”? Or are they willing to put up with the “boredom” because they value the subject matter or what it can get them by way of credentials? How does one transform how environmental
issues are conceptualized as needing to be compulsory rather than not? The
environment is, apparently, a secondary issue to many students:

Student 1 (FG2): “I believe we have too many other things going on at the same time to have a focus on it. Right now our schools are under such a push to hit so many different broad subjects, there’s problems everywhere right now, and just trying to make a push to get the environment into the curriculum, because I do think it would take a lot of effort to get that in there [pause]... and I don’t believe that anyone’s willing to do that, put the time and effort in.”

This particular student recognizes a number of issues that exist in the Ontario education system. It should be of no surprise that students identify the emphasis on Math, Science, and English in schools, as they are the ones required to be fulfilled to graduate and enter post-secondary destinations with specific prerequisite courses. This student also indicates a difficulty in implementing Environmental Education into the curriculum, and a lack of willingness to make the effort to implement environment-related expectations. So what are students learning in their classes?:

Interviewer – “What other things are you learning in your classes about the environment?”

Student 2 (FG2): “No, we don’t really [inaudible], I don’t take biology classes, first of all, so I don’t learn anything about the environment there, and I guess in world politics, we discuss it occasionally, like it comes up with, um, whatever project somebody’s done, but we don’t talk about it and specifically learn about that.”

According to the Ontario Ministry of Education, students should be exposed to environmental expectations more often, as they are infused and incorporated into numerous disciplines. Students offered valuable insight on their perspective of the “infusion model” given that most had experienced this system for four years:
Interviewer – “In 2000, the Ontario government took Environmental Sciences out of the curriculum, and what they did was they dispersed these expectations in different places, like Geography and Science, and in doing this, the Ontario government said that more students, more often, would be exposed to environmentally related expectations by doing this. What are your thoughts on this “infusion” model, seeing as you’ve been in high school since about 2004?”

Student 3 (FG3): “I still think that students should have the choice, they should leave the expectations dispersed so long as they are actually taught, but they should also have stand alone courses in environmental sciences for students who want to specialize in it, you are exposed to it at more levels and in different subjects, but like, you know, you also need the specific courses.”

Student 4 (FG3): “I got a question about that though, about the curriculum, how did more people become exposed to it by dispersing it, like if you had to take it?”

Interviewer – “You didn’t have to take this course, it was an elective, I believe grade 11 Environmental Science.”

Student 2 (FG3): “I definitely think that if they ever bring that course back, they should make it a compulsory course in grade 11, I mean, it would just be too hard to take it in grade 12.”

Student 1 (FG3): “Ya, it’s just too hard for grade 12’s who are trying to get their prerequisites for university.”

The issue here is between tinkering with the current requirements, or conceivably, overhauling the current requirements. This could mean a compulsory course in Environmental Education, coupled with infusion within other disciplines. Certainly the infusion would have more impact if the students had some basic compulsory knowledge of the subject. Moreover, this should occur at the elementary level, long before they enter the secondary stream:
Interviewer – “There are courses that are offered that are environmentally related, not just here, but across the province, but often times they get cancelled for lack of enrolment. What are your thoughts on that?”

Student 3 (FG3): “I think maybe the awareness of the courses you can take should be [inaudible], because there’s a lot of courses that I’m not even aware of, and I’ve been here for 4 years, and my entire family has gone through this school... [pause] so, unless the only way is for us to read through the course calendar and read the description, you know...”

Student 4 (FG3): “Ya, it’s not just that, but if you actually read it, and you know what you’re learning about, you have to decide between that and calculus, and calculus is going to put me ahead when I go to university, with the other it’s more personal, and I don’t get any, like, gain from it.”

Lieberman and Hoody (1998) discuss the benefits of infusing Ecological (or Environmental) Education into different subject areas in the curriculum.

“Environment as the Integrating Context (EIC) for learning designates pedagogy that employs natural and socio-cultural environments as the context for learning while taking into account best practices of successful educators” (p.7). They also outline fundamental education strategies that successful programs share. These are: Breaking down traditional boundaries between subject areas; providing hands-on learning experiences through problem-solving and project-based activities; relying on team teaching; adapting to individual students, and their unique skills and abilities; and developing knowledge, understanding, and appreciation for the environment—community and natural surroundings.

As stated before, implicit in the terms integration and infusion is that more is better. However, what the results of this study and others previous reveal, such as
Puk & Behm (2003), are the substantive limitations to this approach. The two subject areas most often infused with these environmentally-related expectations are Science and Geography. Infusion, rather than strengthening Environmental Studies, has had the opposite effect, and has led to the dilution of the curriculum (Puk & Behm, 2003), and in this case, confusion. “Add to this the supplemental approach that teachers are going to “infuse” every part of the curriculum with environmental education, and you have a recipe for failure” (Van Matre, 1990, p. 13).

**The Media – A Driving Force in Environmental Education:** Formal classes were not the primary place of education regarding the environment, however. The majority of students indicated on the survey that the media (e.g., television, movies, and internet) is the principal source for information regarding the environment:

Student 2 (FG1): “I would agree with that. I think that’s the way people are learning about the environment, in general.”

Student 7 (FG3): “The only way you really know what’s going on, is if you take, like, what you’ve learned in chemistry, like the burning of fossil fuels, and relate it back to what you’ve learned in biology, about the effects trees have on the environment, and make the connections yourself, cuz teachers won’t do it for you.”

Student 1 (FG3): “I think so too. All the information is kinda spread out between two or three classes, like chemistry and biology, and you have to take those to know anything about the environment, and you have to take all of them to have a good understanding about it.”

Student 7 (FG3): “And not only take the classes, but make the connections between all of them.”

I find this last statement imperative to this study. This student is unmistakably highlighting one of the most crucial problems that exist in the Ontario secondary
school system—the compartmentalized approach to disciplinary areas in the curriculum. Typically, students receive “bits and pieces” of information in their courses, with no means in the formal school setting to “bring it all together”, in a way that fosters understanding, caring, and ultimately action. An outlet they are receiving messages from, however, is the media. Is this a valid source? Or should the school system be doing more to delineate these sometimes unclear, vague, and often negative messages? Students are crying out for more serious treatment of environmental issues in school, and one could argue that teachers are simply not delivering:

Student 7 (FG3): “Definitely in the media you hear about tornadoes, and they are caused by global warming, you hear about floods, and they are caused by global warming, like, every time you turn on the news, something else is caused by global warming.”

Interviewer – OK. That’s actually a good lead in into my next question. I know you filled this in on the survey, but I would like you to expand on it. Where do you learn most about the environment?

Student 5 (FG3): “I watched this one show on Oprah, and she kinda challenged her audiences and viewers to change their minds, like, about stuff, and so, ya, I guess Oprah.”

Despite the majority of students indicating they learn most about the environment via media sources, there were a couple of students who indicated their friends as their source of information:

Student 1 (FG1): “Through friends, through conversations with people, listening to discussions.”
It goes without saying that the “societal curriculum”, which as Cortes (1979) points out is “that massive, ongoing informal curriculum of family, peer groups, neighbourhoods, mass media, and other socializing forces that educate us throughout our lives” (p. 479), seems to have a great deal of influence on students.

Past studies have focused on such things as ethnicity and culture, in terms of the societal curriculum. However, the environment, and its prevalence in the media, may play a large part in how and what students learn. Whatever the subject matter or theme, the societal curriculum has both positive and negative educational effects (Cortes, 1979).

**Students’ Attitude, Lifestyles, and Choices:** While many of the students’ intentions seem to be genuine, they more often than not link back to a financial concern on the part of the student, rather than a concern for the environment:

Interviewer - “Ok, so you mentioned carpooling as one thing you’re doing. Is that more a financial incentive or environmental?”

Student 3 (FG3): “Ya, definitely more financial.”

What is of most concern, however, is the message is still one of consumption. Students may be aware of more environmentally-friendly practices, and making some environmentally-friendly choices, but students believe they need to buy the right products in order to be “green”. Furthermore, some messages are reverberating with students. They do realize they need to do something or understand the issue differently. Many students feel they lack direction in terms of what they can do, as
teenagers, to make a difference. Yet other students had very clear and specific ideas of what can, and should be done. They are pointing to the need for a paradigmatic shift, even though they may not have the words to say so. In contrast, however, students perceive many teachers to be delivering messages about the “little things” students can do to make a difference:

Student 3 (FG3): “I’ve started to turn off my lights in my house when I don’t need them on, just from, like, physics in grade 11, and learning about how much energy that wastes and stuff [pause]... and I carpool a lot more to Ottawa when I go, just because gas prices being so expensive...”

Student 7 (FG3): “I do a lot of environmental stuff in my house, mainly because my mom does it, she goes out and buys all these green bags, and whatever, so whenever I go to buy something, she says, here, take these with you.”

Student 5 (FG3): “Ya, my mom did the same thing, she came home with all these LED lights, and bought a front-load washer and dryer, and she’s really trying to just do what she can because she wants to help.”

Student 1 (FG3): “Ya, I for sure kinda have it forced on me, because my dad works for hydro, so he’s always been high on energy conservation, and my mom worked as the director of public works here in town, so she kinda likes to recycle lots, and knows that kinda side of it too.”

Student 6 (FG3): “My family’s like the complete opposite, they, like, always left the lights on [inaudible], but they’re starting to turn off the light, so they’re starting to come around.”

Student 3 (FG3): “I’m starting to recycle, like [inaudible] I had all this paper, and I was like, I can’t throw this out, so I recycled it.”

During this dialogue, I couldn’t help but wonder if this was enough. Is it not time to make a paradigm shift—a new world view—where changing light bulbs and
recycling, for example, are simply not adequate steps anymore, if they ever were, and larger measures have to be taken? I approached this question in the focus groups:

Interviewer – “Do you think we’re doing enough?”

Student 7 (FG3): “No.”

Student 3 (FG3): “No, I think generally, high school students, when they get their licence, they like to drive around a lot and stuff, so maybe carpooling with friends [pause]... Like, all your friends are going to get their licences at the same time, and they’ll all want to go to the same places, so like, carpooling would be a good thing to do.”

Student 4 (FG3): “Well, there was this big thing on the discovery channel, there was this big thing about how recycling doesn’t actually help anything, because it takes so much energy to actually recycle anything. They were saying the only thing that’s actually worthwhile to recycle is tin cans, or aluminum cans rather, because stuff like paper, like paper companies, like school paper companies especially, they have to grow their own trees before they can cut them down, in North America at least.”

If students feel they are not doing enough, what would motivate them? What would give them the encouragement to do more?:

Interviewer – “So, if this town did have some initiatives regarding the environment, do you see yourselves getting involved?”

Student 3 (FG3): “Like how. Like a tree planting thing or something?”

Interviewer – “Absolutely, anything like that.”

Student 3 (FG3): “I think this town would be better to make a campaign that was more, uh, like targeted towards a family, things that you can do as a family, because organizing large events like that, it always conflicts with people’s schedules, and stuff like that, it’s not always feasible, but to do an independent campaign targeted towards individual families, I think something like that could work.”
Student 1 (FG3): “Last Earth Day they shut down main street and had a little thing there, and it’s almost guaranteed that none of us showed up.”

Student 7 (FG3): “I helped plan that.”

Student 1 (FG3): “Did you? Sorry.”

Interviewer – “Earth Day is huge; it’s world-wide. Why do you think there wasn’t many people involved?”

Student 7 (FG3): “There was enough people to make it worthwhile, I mean I ran a children’s craft table using recycled material, but it definitely wasn’t geared towards high school students, it was geared towards young children and families, you know, like, using biodiesel and stuff like that, teenagers aren’t in charge of their own homes yet, so you can’t do that kind of thing, so, and educating young children.”

Interviewer – “To what extent have you changed your lifestyle, if at all, with regards to the environment?”

Student 2 (FG2): “Little or none, I’d say, um, I mean I’ve always, um, you know if there’s a light on in the room, and nobody’s there, I turn it off, but that’s just because it doesn’t need to be on.”

Evidently concepts are being internalized, to a certain degree. This student indicates that they turn off lights at home when no one is in the room using them. However, what has been internalized in this case? What may be being internalized is the limited degree to which individuals perceive themselves to be participants in addressing the global magnitude of environmental degradation. Growing up, my parents always told me to turn the lights off when I was not using them, but often the reason given was that I was “wasting money” by keeping them on. However, who decides what reasons should motivate our actions?

All students agreed, however, that they simply do not change their lifestyle too much to become more environmentally friendly:
Interviewer – “Why do you think that is? And I’m generalizing here, but why do you think teenagers don’t change their lifestyle too much?”

Student 2 (FG2): “I think it’s because we don’t see the threat first hand [pause], it’s almost as if global warming is used as a fear tactic, and that’s all you hear about, in terms of the environment, and it’s sortof, just, I don’t buy it, and um, it’s too distant [pause]... the problem seems too distant for us to really, um, focus on that.”

Student 1 (FG2): “Teenagers are people with modest means, they don’t really have that much of a choice, so they try to make the differences that they can make, but it doesn’t happen that much.”

These students are associating “making a difference” with money. They feel they cannot make a difference, because they do not have the money to do so. It is evident they are receiving this message through the media. The media promotes the consumption of environmentally-friendly products, which costs money. Students are internalizing the idea that buying “green” products makes one environmentally-friendly. There is a lack of awareness of alternatives, for example, to simply buy less.

Many ideas and initiatives are formed in the formal school setting, such as composting programs. However, in order for these to be successful, students need to have the knowledge-base and understanding in terms of why they are doing what they are doing, and how it benefits everyone:

Interviewer – “Yes, um, one of your peers in the last focus group I did, was saying that if you owned a house, or owned a car, things might be a little different, but you’re at the stage where you don’t, you’re not really exposed necessarily to the high gas prices, the hydro bills every month, etc. Um, would there be something that could happen in your classes, or in the school, that would spark more interest in the environment?”

Student 2 (FG2): “No. No.”
Interviewer – “Um, quite a few students that I’ve talked to have said that they don’t really care, environmental issues don’t pertain to them, they don’t own a house, they don’t own a car, you know, why would it affect me, etc., what would make high school students become more aware of what’s happening out there?”

Student 3 (FG3): “I think it’s just ignorance. It doesn’t matter that they don’t own a car, they use their parents car, and they don’t own a house, well, they still use the lights at home, like just because they don’t own it, doesn’t mean they’re not contributing to it. Right?”

Student 7 (FG3): “I think a lot of the reason why people don’t do stuff is because you can’t, you can’t make people change, you like, as a homeowner you could, but as a teenager you can’t like say to your parents, I’m going to put in new lightbulbs, what teenager is going to do that?”

Student 3 (FG3): “I agree with that, it also comes down to the whole, I’m one person, I’m one teenager, what can I really contribute, so why would we care?”

Student 2 (FG3): “And where do we start? Like I wanna help, but what am I suppose to do?”

These responses are a direct result of not having the direction necessary to understand what can truly make a difference, and what role the individual, community, and government can, and must play in relationship to the larger global environmental community. Teachers telling students to change light bulbs and take shorter showers, while decent and virtuous messages to provide, are simply not enough. Students need to be aware and knowledgeable of how environmental degradation now, directly affects them presently, and in the future:

Student 2 (FG1): “It’s tough to think of ways that it will benefit somebody our age, who aren’t exactly thinking of the future.”

Student 4 (FG3): “Like another thing is, like, using plastic grocery bags and whatever, it’s just you do it without even thinking, a
whole bunch of little things, you do without thinking about, cause you think something this small is not going to change anything, but all those little things start to add up, so if everyone starts using those black recycled bags then you’ll think twice about using a plastic one, because everyone else is using these black bags, I guess I should start using them too.”

Student 4 (FG3): “So I think once a couple people start, it kinda like radiates out to everyone else.”

Environmentally-conscious behaviours absolutely will radiate. However, before these behaviours become learned traits, there needs to be an understanding, especially with teenagers, of how the results of these behaviours will benefit the individual and larger systems like the environment:

Student 6 (FG3): “I think the real thing is when we create a lot of controversy, like if the grocery store didn’t offer plastic bags at all, and they only offered the recycled bags at a price, and make the option not there.”

Student 6 (FG3): “You can’t even get paper bags anymore.”

Student 3 (FG3): “And make the energy efficient light bulbs the only ones that you can buy.”

Student 2 (FG3): “Like No Frills charges you to get plastic bags.”

Student 4 (FG3): “Ya, but they only charge you 3 cents for the bag, I mean that’s not a lot, it’s not going to make a lot of people think twice about buying one. You can also get those boxes to put stuff in.”

It is also important to talk to students about the notion that environmentalism seems to be a current trend in society. “Green” products, and “green” alternatives appear to be available everywhere. Furthermore, the driving force behind this “green revolution” is the media. The question is, if the environment movement is a trend, and trends for the most part come and go, what social/economic conditions must exist if this environmental movement is here to stay:
Interviewer – “Some of you have eluded to this throughout this focus group, and I wanted to talk to you about it a little further. A couple of you have touched on the idea of the environment being “trendy”. Do you think it is? What are your thoughts on that?

Student 4 (FG3): “Yep.”

Student 5 (FG3): “Ya.”

Student 3 (FG3): “Ya, for sure.”

Student 4 (FG3): “Well, I think it’s still on the rise [pause] It’s not even close to being at its maximum yet, and I don’t think it will be until the media slows down, and gets bored with it, until the media decides it’s not important anymore, because I think that’s what sets the trends, is the media.”

Student 3 (FG3): “Also, I just don’t think our generation will make a significant push to deal with this problem, until it’s like to the point where, I’m not allowed to legally drive my car, because it’s doing too much harm to the environment.”

Student 5 (FG3): “Yep.”

Student 1 (FG3): “Ya.”

Student 4 (FG3): “Exactly.”

Student 3 (FG3): “I mean until we have to make drastic life changes, not just you should do this help, it’s like you’re not allowed or able to do it.”

Student 6 (FG3): “If no one could afford oil, we’d probably all have hybrids, but it’s only going up a little, and a little more, then back down, then up again, and we kinda make fun of it and laugh about it, and say that it really sucks, but we’re still at a point where we’re going to fill up.”

Students are once again demonstrating their understanding of a shift in policy at the government level. These interviewees are honest in saying significant change will not take place unless change is forced upon them, and they are required to adapt. These students recommended clear and concise policy change at the government
level, even though they may not be aware they are doing so. It was therefore important for me to ask students what would make a difference at the school level:

**Interviewer – “What would make a difference?”**

Student 4 (FG3): “I think one thing that would help would be like more field trips, like to natural habitats, I think that would help as well, like, not just small ones to the forest behind the school, but something more extreme, like to the arctic, and go kayaking through the icebergs, I don’t really know anything about it, but trips like that, I think would make a difference.”

Student 3 (FG3): “Like, just field trips on seeing the repercussions, like going to the dump, and seeing the stuff that’s going to sit for like 30 years, like before it goes anywhere, and that whole time it’s going to affect us.”

Student 3 (FG3): “I think that the whole problem with it is like, everyone thinks, like, you have to change the world to reduce global warming, but if everyone just did small little things every day.”

Students are indicating the need to link ideas with experience. Students need to see, first-hand, what is happening regarding environmental degradation.

Unfortunately, much of what they see and hear is media-driven and media-manipulated. Time and again, messages students are receiving are so varied and sorted that I understand why they are often confused and bewildered, as to what they can and should do. This inevitably leads to a lack of understanding and appreciation.

I asked students at the end of each focus group if they wanted to add anything.

In focus group #2, students added the following:

Student 2 (FG2): “Not really. It’s just sort of more an observation that I can help with is that, um, they first introduced global warming, like the concept was introduced, in the early 1970’s, um, nobody cared until 1989, which was, um, coincidentally, or not perhaps, coincided with the end of the cold war, and so, that’s why I feel it’s a scare tactic, it’s that as soon as the cold war ended, we
needed something new to be scared of, and that’s global warming.”

Student 1 (FG2): “You can say it’s a scare tactic, but there is evidence that it’s happening, and you can deny the evidence, but it’s all around us, and you can’t say, well there are scientists who disagree with it, but I’ve watched documentaries, and I’ve listened to this and that, and the same people that are disagreeing with global warming are the same people that are disagreeing with the fact that smoking is hazardous, causes cancer, and has ill-effects on you [inaudible], people can disagree with it, but it’s happening, and in secondary schools, I don’t think, we’re not being forced to learn about it, and if we’re not being forced to learn something, the majority of people are pretty apathetic towards it, you do gain some knowledge, I do know people who know a limited amount, but you can’t go into a lengthy discussion about that subject.”

Student 2 (FG2): “Interesting comment about saying ‘the evidence is all around is’, um, the biggest piece of evidence that there is for global warming, is that it’s getting warmer, and while that might be true, if you look at the last 130 years of global temperature data, even the last 180 years, there’s been approximately 0.1 degree in the global temperature, so I don’t think that counts as good evidence, so...”

Clearly students are receiving mixed messages. It is often difficult for adults to decipher truth and untruth with many and varied ideas being presented every day about the environment; I cannot imagine how teenagers must feel. This research shows that many of the participants in this study learn about the environment through the media. It is now abundantly clear why there is a feeling of frustration and confusion on their part, and a want for direction on this issue where students expect it—in the classroom.
CHAPTER FIVE

CONCLUSION

The findings of this study raised many questions about what students believe themselves to be learning with respect to Environmental Education. As is the case with most research, more questions were raised than answers found, and the questions raised deserve further investigation. This study found a significant array of knowledge and awareness on the part of participating students regarding environmentalism, and how this knowledge and awareness develops personally and as a community. This study also found that from the student’s perspective, there does not seem to be a great deal of direction in the curriculum with respect to environmental education—or it is lacking altogether. As a result, a very broad range of attitudes regarding the environment was uncovered. While on the one hand, some students’ attitudes regarding the environment appeared to be somewhat complacent, it was also discovered that students seemed to be aware of environmental issues affecting Canada and the world, but unfortunately indicated a sense of confusion and helplessness, in terms of their role in solving these matters. Moreover, there were students who were very much aware of important environmental issues, what is lacking in the curriculum regarding these issues, and how they perceive themselves not to be taught about them in the formal education system. Some of the participating students went so far as to recommend fundamental paradigm shifts at the policy
level, such as implementing a compulsory Environmental Education course at the senior level, without knowing perhaps they were doing so.

Currently, environmentally-related expectations, which are embedded in the Grade nine and ten Science and Geography curricula, are seen very little outside these disciplinary areas in the prescribed curriculum. Unfortunately, the message in the current prescribed curriculum focuses on individual responsibilities, and may not reflect the urgency for fundamental environmental educational changes. In addition, teacher knowledge in the area of EE is perceived by the students to be lacking. In support of this view, previous and current research has indicated a significant lack of teacher education in this field, and as a result, as suggested in this study, students are not learning about this extremely important subject. What was also evident in this study was the level of understanding on the part of some students regarding changes needed to be made at the system level in order for Environmental Education in secondary schools to be successful in the future. Conversely, there was a lack of awareness that the changes suggested and discussed by students are actually changes that have to be made at the government and policy level.

However, will change start with teacher education? Or will changes continue to happen at the curriculum level? Is it reasonable to expect curricular changes without commensurate changes in teacher educator programmes? Who will ultimately be considered an “expert” in EE? The teacher with an Environmental Science degree? Those with a degree in Environmental Studies? Can it be expected of those with qualifications in Geography? In Biology? The two-credit Outdoor Education program, the students of which were the participants in this study, consists of one
senior-level Physical Education and one senior-level Geography credit, taught by a Physical Education teacher. This is possibly the case in other school boards in the province. Are Physical Education teachers the “experts” in Environmental Education? Not only is EE, in this case, embedded in Geography and Physical Education, it is also in turn, embedded in Outdoor Education. In fact, “for many educators the term ‘Outdoor’, ‘Experiential’, and ‘Environmental’ Education are perceived as interchangeable” (Adkins & Simmons, 2002, p.2). However, there are fundamental differences between these disciplines. Adkins and Simmons (2002) further claim that Outdoor Education emerges as a context for learning, Experiential Education as a process or method, and EE as core concepts and skills necessary to be an environmentally literate citizen. While infusing EE into Outdoor Education may be one approach in schools, it clearly must not be the only approach. Students need a stand-alone course in EE to bring concepts from all disciplines together and give much needed direction in very confusing and chaotic times.

As an environmental educator, this study made me re-evaluate what is important to me, and what I consider to be important to teach to my students. That is, that while travelling to different continents around the world, and bringing these images back to my classroom may be an excellent teaching tool, it may only perpetuate the feeling of frustration and helplessness. Many students will not see places, such as Antarctica, with their own eyes, and while it is important for one to understand what is happening globally, the focus in classrooms should be to link the global to the local, and better understand what can be done locally to make a significant difference.
The earth is resilient and will survive long after the human race’s destructive actions. Undoubtedly, humans are a driving force behind environmental destruction and devastation, and are the agents of their own demise. If current and subsequent generations do not change the way we and they think about the environment, the earth itself will survive, but humans will push the limits of our planet beyond the point of humankind’s survival, as is seen currently at a devastatingly rapid pace. However, in order for a paradigm shift to occur, schools, not the media, need to be environmental education knowledge centres. In order for this to occur, fundamental changes need to be made at the teacher education level.

**Future Research & Recommendations**

The results of this study clearly indicate the confusion on the part of many secondary students. It is also clear that, based on this study and others, the infusion model regarding Environmental Education in the Ontario curriculum has been unsuccessful, remains an unsuccessful approach, and therefore may not work in the future. “Infusion has led to a dilution of ecological literacy in public education” (Puk & Behm, 2003, p. 226).

In terms of curriculum development, Puk & Behm (2003) clearly and concisely articulated recommendations, which have not been realized across the province. Based on my study, I reiterate three recommendations in particular: 1) compulsory, discreet, environment and sustainability education, serving as the school hub, offered at the elementary level, as it is too late if only implemented at the secondary level; 2) revamped teacher education programmes aimed at preparing teachers to deliver a
serious EE curriculum at the elementary and secondary levels; and 3) enhanced post-
secondary prerequisites that include a minimum but serious knowledge of
environmental issues.

Humankind is on a path where changes occurring in the environment are long-
term and hard to reverse or undo. A “reduce, reuse, recycle” approach, while
important, is not enough to address the magnitude of the problem. Although there
was some resistance regarding the prospect of a compulsory Environmental
Education course by the students I interviewed, there was also an equal number of
students who expressed confusion, and a lack of place and understanding to pull all
concepts together, to explain what they all mean and how they interrelate. It was
clear that students are receiving what they describe as “bits and pieces, here and
there”, with no clear direction and understanding. However, if teachers do not have a
fundamental knowledge base in the area of Environmental Education, what hope
might there be in changing this? Given the current state and urgency of EE, perhaps
it is time to make the idea of a compulsory Environmental Education course, coupled
with infusion, and serious attention in the preparation of teachers at the level of their
own education, a reality.

Teacher education reform is a recommendation that Puk and Behm (2003) also
support. Puk and Behm (2003) note that very little emphasis is placed on
Environmental Education in the majority of pre-service teacher education programs.
They go on to say that a systematic model for pre-service and in-service training
must exist in order to thoroughly prepare teachers. This study clearly reiterates the
need for this system policy shift.
I, unfortunately, fall into the category of teachers who graduated in 2000 from an undergraduate program, with the full intent of going to a Faculty of Education with a first teachable in Intermediate/Senior Environmental Sciences. However, I quickly learned that during that same year it had been removed from the Ontario curriculum, and therefore was no longer a “teachable subject” at any Faculty of Education in Ontario. Since then, any student having the inclination to become a teacher may think twice about pursuing a path in Environmental Education during their undergraduate years. These students will quickly become aware it is not a teachable subject in elementary and secondary schools, and hence it is not an area of focus in Faculties of Education.

Undoubtedly, education policy is heading in the wrong direction. By taking a “top-down” approach to Environmental Education reform—that is, changing course and curriculum expectations without making EE a formal curricular offering—hinders teacher education restructuring and improvement to include EE as a “teachable” component of teacher education programmes. Ultimately, student learning, not politics, is what is at stake in this case. Students in this study seem to have understood that their learning starts with a solid teacher knowledge base. Government must come to this same realization.

**Postscript**

Recently the Canadian Broadcasting Corporation (CBC), the publically supported national radio and television service, launched what is called “One Million Acts of Green”. The idea is that Canadians are invited to post their “act of green” on
a particular website, in hopes that we can reach one million by a certain target date. My question is – are we not beyond thinking about the environment in such simplistic ways?

Granted, these so-called “small steps” are important, and can sometimes lead to larger acts of greenness, which benefit the environment. The problem is it is far too late for these small steps. We should have embraced these small steps years ago; decades ago. It is disheartening for me to think that some students are resigning themselves to these “small steps”, such as changing light bulbs, and declaring that they have done their part. According to George Monbiot (2006) in his book, *Heat: How to Stop the Planet from Burning*, large-scale action is what is both required and possible, at the policy level, and not just at the level of personal action. Monbiot claims that a 90% reduction by the year 2030 is feasible without bringing an end to civilization as we know it, but it will not be easy.

It is certainly a false impression that through one million, small, collective acts of green, fundamental paradigm shifts will occur in our lives, our communities, and our environment. It is about overhauling our lives, our lifestyle, our society, culture and worldview, and what we consider acceptable, through a complete understanding of social, political and economic issues. This understanding begins in the classroom. However, first and foremost, teachers need the knowledge, skills, and determination to properly teach for enduring understanding on the part of the student regarding Environmental Education.

As some students indicated in this study, they do not have the knowledge, skills, and determination, and think they can only manage small acts of green. Yet
others have revealed an extensive knowledge-base of environmental issues, with little or no direction of what to do with this knowledge. I take some responsibility for this. In some cases, policy makers, and in turn, environmental educators have failed to create such a compelling vision in the minds and hearts of Canadian children and adolescents. People are already losing their homes, their livelihoods and their lives due to climate disruption all over the world. It seems as though our human compassion has been co-opted and downgraded to light bulb switching.
References


APPENDIX A: Letters of Information and Consent Form

LETTER OF INFORMATION - SURVEY

Dear student,

My name is Jessica Young and I am writing to ask if you will participate in a study on environmentalism. I am doing this study as part of my Master’s of Education at Queen’s University. The study is called: *Generation Green: An investigation of how students construct meanings for environmentalism*. This research has the support of the Director of Education of the Renfrew County District School Board (Ms. Eleanor Newman), and the Principal of Arnprior & District High School (Mr. Neil Farmer). This research has also been cleared by the General Research Ethics Board at Queen’s University, Kingston, Ontario. Your decision to participate or to not participate in this study will not affect your standing in school.

Participation in this study will include filling out a survey questionnaire, which will take approximately 15-20 minutes. Taking part in the survey implies that you consent to filling it out. I do not foresee any risks involved in this research. Your participation is completely voluntary. You do not have to answer any questions that make you feel uncomfortable. You are free to withdraw from the study at any time. You may also ask for any or all of your data to be removed at any time.

The privacy of the people who participate in this project will be protected to the fullest extent possible.

- None of the data will contain your name or the name or location of the school;
- Data will be kept in a locked office at Queen’s University;
- My supervisors and I will be the only ones who will see the raw data; and
- The information given in the survey will be published as part of my master’s thesis, it may also be presented at academic conferences, but your names will not be attached to the information.

If there are any questions or concerns or need further information before you make a decision about participation, please do not hesitate to contact me, Jessica Young, directly at 613-331-1561 or 6jy13@queensu.ca. You may also contact my supervisor, Dr. Magda Lewis, at 613-533-6000 ext. 36220 (magda.lewis@queensu.ca).

For questions, concerns or complaints about the research ethics of this study please contact the Education Research Ethics Board (ERE@queensu.ca) or the Chair of Queen’s University Research Ethics Board, Dr. Stephen Leighton at (613) 533-6000 ext. 77034 or (greb.chair@queensu.ca).

Thank you for your time.
Jessica Young
LETTER OF INFORMATION – FOCUS GROUP AND INTERVIEW

Dear student,

My name is Jessica Young and I am writing to ask if you will participate in a study on environmentalism. I am doing this study as part of my Master’s of Education at Queen’s University. The study is called: Generation Green: An investigation of how students construct meanings for environmentalism. This research has the support of the Director of Education of the Renfrew County District School Board (Ms. Eleanor Newman), and the Principal of Arnprior & District High School (Mr. Neil Farmer). This research has also been cleared by the General Research Ethics Board at Queen’s University, Kingston, Ontario. Your decision to participate or to not participate in this study will not affect your standing in school.

As a follow-up to the questionnaire you filled out earlier, you now have the opportunity to participate in a focus group session, and a one-on-one interview as a follow-up to the focus group. Each focus group interview and one-on-one interview will be one-hour in length. Two focus group sessions will be conducted, and the maximum number of students for each focus group is 7. You will be selected on a first-come, first-served basis. During the focus groups, I will inform you that if you would like to follow-up the focus group with a one-on-one interview, you may do so by contacting me directly. The first 4 students (2 from each focus group) to contact me will be selected. Focus group and interview questions will concentrate on how you construct the meaning of environmentalism. The focus groups and interviews will take place during the school day, in the library, and juice and a light snack will be provided.

I do not foresee any risks involved in this research. Your participation is completely voluntary. You do not have to answer any questions that make you feel uncomfortable. You are free to withdraw from the study at any time. You may also ask for any or all of your data to be removed at any time.

Focus groups and interviews will be audio recorded and transcribed into text. A copy of the text of the focus group sessions will be sent by mail or e-mail to you to make sure you are comfortable including everything that is in the transcript. If you prefer, we can meet to review the text together. At that time you may change or remove any part of the text. The privacy of the people who participate in this project will be protected to the fullest extent possible.

- Focus groups and interviews will be audio recorded and then later transcribed. The audio file will then be destroyed;
- None of the data will contain your name or the name or location of the school;
- Pseudonyms will be used to replace all names in the data to protect your identity and others that you may talk about;
- Data will be kept in a locked office at Queen’s University;
- My supervisors and I will be the only ones who will see the raw data; and
• The information given in interviews will be published as part of my master’s thesis, it may also be presented at academic conferences, but your names will not be attached to the information.
If there are any questions or concerns or need further information before you make a decision about participation, please do not hesitate to contact me, Jessica Young, directly at 613-331-1561 or 6jy13@queensu.ca. You may also contact my supervisor, Dr. Magda Lewis, at 613-533-6000 ext. 36220 (magda.lewis@queensu.ca).

For questions, concerns or complaints about the research ethics of this study please contact the Education Research Ethics Board (EREB@queensu.ca) or the Chair of Queen’s University Research Ethics Board, Dr. Stephen Leighton at (613) 533-6000 ext. 77034 or (greb.chair@queensu.ca).

Thank you for your time.

Jessica Young
CONSENT FORM

- I understand that I am being asked to participate in Jessica Young’s research project called: *The Generation Green: An investigation of how students construct meanings for environmentalism.*
- I have read and kept a copy of the letter of information and had any questions answered to my satisfaction.
- I understand that the purpose of this study is to describe how I construct the meanings for environmentalism.
- I understand that my participation will be in the form of a focus group, and a one-on-one interview, which will each be approximately one hour in length.
- Should I participate in the focus group and one-on-one interview, I understand that these will be audio recorded.
- I understand that confidentiality will be protected to the fullest extent possible by appropriate storage and access of data and by the use of pseudonyms instead of real names.
- I understand that I can withdraw from the study at any time without consequences and can ask for all or part of my data to be removed.
- I understand that I can contact Jessica Young with questions about the study by telephone at 613-331-1561 or email at 6jy13@queensu.ca, or her supervisor, Dr. Magda Lewis, at 613-533-6000 ext.36220 (madga.lewis@queensu.ca).
- I understand that for questions, concerns or complaints about the research ethics of this study please contact the Education Research Ethics Board (ERE@queensu.ca) or the Chair of Queen’s University Research Ethics Board, Dr. Stephen Leighton at (613) 533-6000 ext. 77034 or (greb.chair@queensu.ca).

Please sign a copy of this Consent Form and return it to Jessica Young. Please keep one copy for your own records.

I HAVE READ AND UNDERSTAND THIS CONSENT FORM AND I AGREE TO PARTICIPATE IN THIS STUDY.

Name of participant (please print): ____________________________________________

Signature: ____________________________

Date: ____________________________

Telephone number: ____________________________

Please write your e-mail or postal address at the bottom of this sheet if you wish to receive:

☐ a copy of the transcript of the interviews for follow-up review, or

☐ a copy of the results of this study.

Email Address: ____________________________________________

Postal Address: ____________________________________________
APPENDIX B: Recruitment Script

When visiting grade 12 classes, I will say the following to recruit students to participate in the survey:

Hi, my name is Jessica Young, and I’m conducting research as part of my thesis for my Master of Education program at Queen’s University, in Kingston, Ontario. My thesis is entitled: *Generation Green: An investigation of how students construct meanings for environmentalism.* The following is a survey questionnaire on environmentalism. Information from this survey will help me formulate questions for focus group interviews, which will take place as a follow-up to this questionnaire. You will have the opportunity at the end of this survey to indicate your interest in taking part in the focus groups. This research has the support of the Director of Education of the Renfrew County District School Board (Ms. Eleanor Newman), and the Principal of Arnprior & District High School (Mr. Neil Farmer). This research has also been cleared by the General Research Ethics Board at Queen’s University, Kingston, Ontario. Your decision to participate or to not participate in this study will not affect your standing in school.

Please feel free to ask me questions about my research and the survey.

Thank you, and your input is greatly appreciated.
APPENDIX C: Survey (Questionnaire)
The following is a survey questionnaire on environmentalism. Information from this survey will help me formulate questions for focus group interviews, which will take place as a follow-up to this questionnaire. You will have the opportunity at the end of this survey to indicate your interest in taking part in the focus groups. As indicated in the Letter of Information, by filling out this survey, you are consenting to take part in the survey.
Thank-you.

1. In your opinion, what is environmentalism?
_____________________________________________________________________________________
_____________________________________________________________________________________
_________________________________________________________________________________
_____________________________________________________________________________________

2. Are you currently enrolled (or have you already taken) a grade 12 environmental education course?
   ☐ YES
   ☐ NO
   Course: ________________________________________________

3. Please describe your experiences within this course.
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

4. If you chose not to take an environmental education course, please indicate why.
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
5. Please state your opinion about the following statements by checking the appropriate box:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The environment is important.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn MOST about the environment in school.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn MOST about the environment outside of school.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn most about the environment from the media (i.e., Internet, movies)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn most about the environment from other people (i.e., teachers, friends, family)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. A) Check the box to indicate how many times during the school day you read or hear something about the environment.

☐ Every day
☐ 4-5 times per week
☐ 3 or fewer times per week
☐ Never

B) Please describe where you hear or read about the environment during the school day.

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

C) Please describe what you hear or read about the environment during the school day.

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

7. A) Check the box to indicate how many times after school and on weekends you read or hear something about the environment.

☐ Every day
☐ 4-5 times per week
☐ 3 or fewer times per week
☐ Never
B) Please describe **where** you hear or read about the environment after school and on weekends.

________________________________________________________________________

C) Please describe **what** you hear or read about the environment after school and on weekends.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

8. Would you like to learn **more** about any of the following?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Warming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greenhouse Gases</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Kyoto Protocol</td>
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<td></td>
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<tr>
<td>Alternative Energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activities by local government and groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. If you “**disagreed**” or “**strongly disagreed**” with any statement above, please explain.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

10. In the chart above, are there any items you are **not** familiar with? If so, which one(s)?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Would you be interested in attending a focus group session, which will be **ONE** hour in length, to further discuss the above issues?

☐ YES
☐ NO

If yes, would you please leave your name, email address and / or telephone number:

Name: ______________________________________

Email Address: _______________________________

Phone Number: _______________________________

*THANK-YOU FOR YOUR PARTICIPATION!*
APPENDIX D: Focus Group Questions / Probes

1. Some of your peers say they feel environmentalism is this... do you agree or disagree? Why, or why not?

2. What do you think is the biggest environmental concern (in Ontario / Canada / World) right now, and why?
   a. What is (global warming)?
   b. Where did you learn about (global warming)?

3. What (other things) are you learning in your classes about the environment?

4. How would you differentiate between what you learn in the classroom, as opposed to outside the classroom (i.e., at home, from your friends/family, media)?

5. What do you think the value is on learning about environmentalism in the formal classroom setting, when you are learning about this from other sources?

6. If there were more courses in environmental education, would you take them?
   a. If so, would you be taking them because you’re interested and would like to learn more?
   b. If no, why not?

7. How would you feel about a compulsory course in environmental education?
   a. What would you want the focus of the course to be?
   b. What would you expect to learn by the end of this course?

8. To what extent have you changed your lifestyle in order to help the environment?
   a. If yes, in what ways have you changed?
   b. What made you decide to make those changes?
   c. If no, do you see yourself making any changes now, or in the near future to improve the environment?

9. Do you think the education system is placing enough emphasis on environmentalism? Too much?
   a. If not enough, what would you change?
   b. If too much emphasis, what do you think the education system needs to eliminate?

10. What is your town/city doing to improve the environment?
    a. Is it enough? If it’s not enough, explain why that might be the case?