VIEWS OF ENVIRONMENTAL EDUCATORS ON TEACHING ENVIRONMENTAL EDUCATION

by

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ABSTRACT

Environmental Education (EE) can play an important role in broadening learners’ understanding of their environment. This is of particular importance due to the major adverse impact we as humans are having on the environment, including the loss of biodiversity and global warming. However, many Canadian teachers are not offered EE content in their teacher education programs (Lin, 2002). Therefore, this study investigates, (a) what knowledge and abilities are important for teaching EE, (b) experiences that have influenced educators’ interest and willingness to teach EE, and (c) the preparation educators could receive to better integrate EE into their teaching practices. Data were collected using an electronic survey (n=148) and semi-structured interviews (n=11). Results showed that among 12 major themes to emerge from the interviews, recognizing the importance of outdoor experiences and having the ability to engage learners were viewed as very important by participants. Interviewees’ recommendations for improving the preparation of educators included introducing mandatory EE components in teacher education programs and promoting mentorship experiences. However, there was no consensus among participants regarding the impact or value of implementing a professional EE certification program. Implications of this study include facilitating the sharing of environmental educators’ perspectives. Suggestions are made for further research on preparing educators who are willing and able to instruct EE, so that more students are given an opportunity to learn about their environment and make informed choices about their impact on the earth.
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CHAPTER 1

INTRODUCTION

The environment is undergoing human-induced changes at an unprecedented rate. The Intergovernmental Panel on Climate Change stated that, “Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level” (Intergovernmental Panel on Climate Change, 2007, p. 2). Climate change is but one of the numerous interconnected environmental issues to consider. Other issues include the loss of biodiversity on a scale equivalent to a mass extinction event, the unsustainable use of both renewable and non-renewable energy sources (such as freshwater and fossil fuels respectively), and the increasing levels of pollutants with resulting consequences for human health and livelihood (Enger & Smith, 2006; Leakey & Lewin, 1995). Canadians are very much implicated in this environmental crisis as we are responsible for using the most energy, per capita, in the world, and are also the world’s second largest consumers of water, per capita (Energy Information Administration, 2004; Organization for Economic Co-operation and Development, 2008).

These complex environmental issues will be of utmost concern to future generations who will live with the consequences of our past and present actions. This is where education must play an important role. By encouraging learners to be aware and sense a connection with their environment, EE may affect the choices that these students will make as part of society. Eisner (2004) stated, “Students will be living in a world different from the one they now occupy, and schools should enable them to deal with that world” (p. 6). Therefore, in order to promote the development of students’ skills and
knowledge for the future, education should strive to include environmental content, critical thought, outdoor experiences, and classroom practices that incorporate the development of a personal environmental ethic.

There are many obstacles to including environmental education (EE) within school settings and in non-formal educational settings, such as funding constraints, and an overloaded curriculum. However, a major barrier that may be preventing the instruction of EE is the lack of preparation that current educators have with regards to this field. As recently stated in an Ontario Ministry of Education document,

Many teachers currently lack the knowledge, skills, and background in perspectives taking required to teach environmental education effectively. Partly due to the fact that environmental education has relatively low visibility within the curriculum, there is little incentive, or opportunity, for developing the required skills, and there are few resources available to support teachers. (Ontario Ministry of Education, 2007a)

In the American context, Gabriel (1996) asserted that inadequate teacher training is the predominant reason why K-12 teachers are not teaching EE. One Canadian study found only approximately half of Canadian teacher education programs, from a sample of 35, were teaching EE (Lin, 2002). In addition, Canadian educators working in non-formal settings do not have a professional accreditation program in place that certifies environmental educators, as is the case in certain American states. The U.S. certification program was created to assist in the preparation of environmental educators and was developed based on the *Guidelines for the Preparation and Professional Development of Environmental Educators* (North American Association for Environmental Education [NAAEE], 2004; NAAEE, 2008a).

The lack of teacher preparation for EE is likely to result in a discrepancy between intentions to implement EE and the reality of what learners are being taught. If the
population at large is to become more knowledgeable about environmental issues, then having EE within formal and non-formal educational settings can play an important role. However, in order for EE to be provided certain knowledge and abilities are required on the part of educators, and there are currently few institutions that include EE within teacher education programs. There is the potential, and need, for more educators to begin incorporating EE within their teaching practices and it is this context that has shaped the objectives of the present study. I have made the assumption in this research that educators can prepare to teach EE, through formal education or other experiences, and therefore exploring knowledge, abilities and means of preparation for EE can be constructive.

I chose to investigate this topic as it is of great global, as well as personal significance. For as long as I can remember I have enjoyed being outdoors, exploring in my backyard and in local urban forests. Members of my family have demonstrated respect for the environment as well as interest and enjoyment in nature. However, it was only with school outings that I had the opportunity to visit more remote settings and go camping. I looked forward to these events although they were infrequent, and most often extracurricular. When it was time for me to choose a university undergraduate program I desired to find a program that would combine my interests in biology, the outdoors and social issues. Therefore, I opted for an interdisciplinary program environmental science program at McGill University, which was composed of courses drawn from the Faculties of (a) Arts, (b) Sciences, and (c) Agricultural and Environmental Sciences.

This undergraduate experience exposed me to multiple ways of thinking, acting and researching with regards to the environment. While many subject areas were approached within the program, education was not among them, and there was no EE course offered by the Faculty of Education either. Therefore, I volunteered with a student
group that aimed to bring together environmental studies and education students to develop and deliver EE presentations in local schools. Unfortunately, we could not recruit any Bachelor of Education students for this endeavour. This led me to question the link between these two subject areas. In numerous environment courses, professors discussed the need for changes at all levels of society, including institutions. I began to wonder how future generations could possibly think or act differently without learning about how they relate to the environment and current issues. Therefore, I thought that EE might be a particularly valuable tool with which to reach students. My personal experience led me to question how EE could take place in schools if there was minimal environmental content in the teacher education program and apparently little individual interest on the part of the Bachelor of Education students.

When I began the Master’s of Education program I was interested in these questions, as well as in preparing for a career in the field of EE. I had already gained some experience by working as an environmental educator in a museum and wanted to broaden my understanding of EE beyond the non-formal settings in which I had worked. My personal interest for conducting the present study was to gain a thorough theoretical understanding of EE, as well as learn more about teaching EE from educators already working in the field. Particularly, to inquire about what had influenced their decisions to teach EE and how they had prepared to do so within their various educational settings.

In this study I attempted to report and share the diverse views of the participating educators while limiting the influence of my own views on the interpretation of the data. However, eliminating all biases is not possible, nor is it desirable in this study, as there is a qualitative component and as the researcher I am a part of the study. However, I have attempted to remain aware of my views throughout the research process.
Purpose

The overarching purpose of this research is to contribute to the body of literature on EE, to have more teachers integrate EE, and to have learners become environmentally aware. The immediate purpose of the present study is to investigate the views of Canadian environmental educators that are working in both schools and non-formal settings in order to shed light on what elements are important for teaching EE, and how to best prepare others to undertake this work. Therefore, this study will investigate three questions:

1. What knowledge and abilities do practicing environmental educators view as most important for teaching EE?
2. What personal or educational experiences influenced their acquisition of knowledge, abilities and perspectives related to EE?
3. What are their views regarding the preparation of future environmental educators?

Defining Key Terms

Several key terms are used throughout the study, including: (a) knowledge, (b) abilities, (c) nature, and (d) EE. In this section I will briefly define these terms, with the exception of EE, which will be explored more in depth in the second chapter due to its multiple definitions and its centrality to the research.

Within the present study the term knowledge refers to different ways of knowing, including knowledge that is based on processes of feeling and knowledge that is based on rational thought. Both of these forms of knowing are present when teaching and learning about the environment and the term knowledge is used interchangeably for both
throughout the text. However, the form of knowledge being discussed can be ascertained by the context in which the term is used.

Daskolia and Flogaitis (2003) considered teacher knowledge to be composed of different parts including knowledge of (a) content or subject matter, (b) learners and learning, (c) general and subject-matter specific pedagogy, (d) curriculum, (e) context, and (f) self. Abilities were defined by Daskolia and Flogaitis as being complex structures, and not the equivalent of skills. Rather, the definition of “a person’s ability to perform or accomplish a task was…based on a combination of appropriate forms of knowledge, the right skills and any gained experience from executing the task” (Daskolia & Flogaitis, p. 252).

The concept of knowledge and abilities was also explored in the *Taxonomy of educational objectives* (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). Knowledge, at its most basic level, was referred to as the state of remembering, “either by recalling or recognizing, some idea or phenomenon with which he [sic] has experience in the educational process….Knowledge may also involve the more complex processes of relating and judging” (p. 28–29). Bloom et al. defined abilities as when an “individual can find appropriate information and techniques in his previous experience to bring to bear on new problems and situations” (p. 38). In particular, abilities include making judgments and evaluations. However, in an article outlining revisions made to the original taxonomy, it was explained that the original Knowledge category, “embodied both noun and verb aspects… in that the student was expected to be able to recall or recognize knowledge” (Krathwohl, 2002, p. 213). This caused an anomaly in that Knowledge had two dimensions, unlike the other five categories. Therefore, in a revision to the framework of the taxonomy, the noun and the verb were separated, with “the noun providing the basis
for the Knowledge dimension, and the verb forming the basis for the Cognitive Process
dimension” (Krathwohl, p. 213). This separation between the two dimensions is of
importance throughout the present study as knowledge elements are made up of nouns,
and ability elements are composed of verbs, to facilitate the distinction between these two
types of elements.

The word nature was used throughout the body of this study. Despite its
ambiguous meaning, nature is a word that most people are familiar with. Throughout this
research, nature refers to settings which are not visibly part of the human built world. For
the purposes of having the educators share their views without imposing vocabulary with
which they might not be familiar or comfortable, I refrained from using less commonly
known terms. For example, I did not use the expression the “more-than-human world,”
which refers to “the great potency of the land, and particularly of the keen intelligence of
other animals, large and small, whose lives and cultures interpenetrate our own” (Abram,

Using the term “the environment,” was not to create an artificial barrier between
the reader and environment but was rather intended to simplify the language for the
interview and writing processes. In effect, the term environment is often considered to be
more holistic than the word nature, as it is understood to include humans, other species,
and abiotic elements. There has been much research into the use of language within
environmental studies, particularly by Bowers (2001). Language limits understanding of
EE as well as educational reform efforts, as words reflect cultural patterns, the same ones
which have led to the degradation of the planet (Bowers). Therefore selecting what
language to use within the survey and interviews was given consideration, and ultimately,
I used language that I believed would facilitate understanding between myself and the participants.

Components of the Research

In this thesis I share my research on the views of environmental educators regarding their teaching practices. In Chapter 2, I provide a literature review that explores the field of EE in general terms, as well as research studies relevant to the themes of my work. In Chapter 3, I explain the methods employed in the present research and the instruments used to collect data for this study, comprised of an electronic survey and interviews. In Chapter 4, I report the perspectives of the educators including a list of the top ranked knowledge and ability elements, as well as the major themes that emerged over the course of the interviews. In Chapter 5, I provide an analysis of the respondents’ perspectives by comparing them with views found within the existing literature. Furthermore, a discussion of the limitations of this work is shared and suggestions are made for future research in the field of EE. Finally, implications of the study are presented, focusing on possible changes for the ways educators learn about teaching EE.
CHAPTER 2

LITERATURE REVIEW

In order to investigate the previous work pertinent to the research questions of the study, I have divided the literature review chapter into five sections. The first body of literature in this chapter regards learning EE in the public domain. The second body of literature considers the role of education relative to environmental issues. The third body of literature explores the field of EE from its origins to its contemporary forms. The fourth body of literature takes a closer look at environmental educators. This chapter concludes with a summary of the relevant themes found within the literature.

Learning about the Environment in the Public Domain

The recent increase in public interest for environmentally responsible or green products and services can be, in part, attributed to increased media attention. Media advertisements bombard the public with assurances that a particular choice of food, clothing and even sport-utility vehicle will make them more environmentally responsible consumers. Some corporations have implemented the triple bottom-line in their policies, where “concerted effort is made to incorporate economic, environmental and social considerations into a company’s evaluation and decision-making processes” (Wang & Lin, 2007, p. 1064). However, while improvements in industry have been made to mitigate environmental impacts, there is concern that much is being greenwashed that is, portrayed as environmentally responsible when in fact it is not. These depictions result in people not being able to trust the content of advertisements (Karna, Juslin, Ahonen & Hansen, 2001).
Media sources have created and shaped the public discussion surrounding environmental issues. The release of Al Gore’s film, *An Inconvenient Truth*, was given much media attention, with ensuing widespread public acknowledgement that climate change is occurring (Bender, David, Burns, & Guggenheim, 2006). However, many of the more complex and deeper rooted social and economic factors have been excluded from the discourse. For example, the film did not adequately address “how inherently unsustainable our lifestyles in Western industrialized nations have become (Ballamingie, 2006, p. 122). In addition, the scientific information disseminated in *An Inconvenient Truth* focused on only a small subset of the factors, specifically carbon dioxide emissions, and failed to touch upon the complexity of interconnections in the environment. Systems thinking and exploration at a more holistic level is essential to describing the nature of living environmental systems (Capra, 1996). Complexity is present throughout the environment, for example the study of ecology “not only focuses on integrated systems instead of isolated parts, but it also considers that in every system there are emergent properties that cannot be found in the parts of it” (Korfiatis, 2005, p. 283). However much of the media seems to overlook underlying issues that affect the environment.

The media is a main source of public education about environmental issues yet its bias towards exploring those issues that have greater economic implications is evident. For example, the media was eager to report when certain water bottles became a potential health risk due to the chemical Bisphenol A, however the larger issue regarding policies which allow for the widespread use of plastics, which are known to leach chemicals into the environment and human bodies, remains unquestioned (Silver, 2006). Another example is the media-based advertising of greener products, such as hybrid vehicles, while failing to address other means of reducing fossil fuel emissions, for instance
planning communities on a local and more human scale, in order to reduce dependence on fossil fuels for transportation. Individuals who have a limited understanding of environmental issues may be more susceptible to greenwashing, unless they are encouraged to think critically, beyond the role of the unquestioning consumer.

Research into the influence of media and other factors with regards to environmental attitudes and actions was conducted by Palmer (1998). Questionnaires were filled out by 182 respondents from a community, which asked: “What would you identify as the single most important influence or experience that has affected your attitude to our responsibility towards … the environment?” (p. 242). The results of the Likert-type questionnaire showed that television documentaries, followed by media images were identified as the single most influential factors. However, another study took a different approach, using analysis of written autobiographical statements to investigate the significant influences on the development of environmental awareness in adults, in 12 countries (Palmer et al., 1998). The contents in the participants’ statements were separated into different factors, and these in turn were grouped into common themes. The most influential group of factors involved experiences of the natural world, particularly childhood experiences, with 80% of the Canadian respondents in the study espousing this view. The influence of people, including close family as well as lecturers and teachers, was ranked as second most influential. Ranked third was education. The influence of primary education was relatively small, however, secondary education was mentioned by 20% of the sample, and tertiary education was quite influential, especially in Canada, where it was listed by more than half the sample. These statistics are important for justifying the value of EE in promoting a lasting influence on environmental awareness. There is a need for a critical lens to be brought to the existing environmental discussion,
and educators are in a unique position where they may facilitate students’ exploration of environmental issues in a holistic manner without being restricted by corporate or economic interests.

The Role of Education Relative to Environmental Issues

Education provides a means for furthering learners’ understanding of environmental issues. As stated by Hutchison (1998), “Without schools to teach the values and intellectual predispositions that our media ignore…our students will be disarmed and their future exceedingly bleak” (p. 27). Having a multifaceted comprehension provides people with a foundation of knowledge upon which they may base their decisions affecting the environment. It is asking people to step back and think about their decisions and actions, and not unquestioningly trust the media’s environmental content.

It is fairly recently that EE has become a part of university courses and school curricula. It must also be noted that there have been many other tools used to promote environmental awareness and actions among the population. Government programs have encouraged EE outside of school settings by implementing legislation, policies, financial incentives and disincentives related to environmental issues. For example, financial rebates are offered by the government for completing energy efficient home renovations (Natural Resources Canada, 2008). The use of governmental policies and incentives may influence citizens to make a particular decision, such as changing to compact fluorescent light bulbs; yet people’s ability to consider the environment as a system, and their actions as elements within it, may be limited without a more thorough understanding of environmental issues. However, policies do play an important role in shaping education in
formal settings, and can be used to promote or dissuade the teaching of EE within schools. Education may empower individuals to envision the whole picture and to use their own judgment to decide upon the larger impact they would like to have on their environment. I am in agreement with Noddings (1995) in her view of the importance of developing caring in students and providing “genuine opportunities to explore the questions central to human life,” including the environment in which they live (p. 368). Therefore, the role of education may be in part to allow learners a chance to observe the current environmental situation from multiple perspectives, gain an appreciation for thinking about environmental issues, and learn to make decisions and act within this web of complexity.

In the next section I will consider the field of EE and how it has evolved into its current form.

EE: From its Origins to Contemporary Forms

Answering the question “What is EE?” is not necessarily straightforward. There are multiple ways of responding to this question, however, some background on how this field has emerged and an exploration of its multiple definitions and objectives is first required. In this section, literature surrounding three areas of research are explored in order to better understand EE, they are: (a) the history of EE, (b) the definition of EE and its objectives, and (c) settings for EE.

History of EE

EE is not a new field. Palmer (1998) uses the metaphor of a stream to explain EE, in that it has many tributaries, such as nature studies, fieldwork observations, and rural studies. The term EE was used for the first time almost 45 years ago, in 1965, at a
conference in the U.K. regarding conservation of the countryside and implications for
education (Palmer). The term has since been adopted for use at international conferences,
such as the first inter-governmental conference on EE held in Tbilisi in 1977.

In the 1970s an emphasis on outdoor education and conservation education placed
a new dimension on EE. While outdoor education can be a form of EE, it is not always
the case, and in many instances the environment can become the backdrop to the outdoor
activity (Preston, 2004). A recent report issued by the Council of Outdoor Educators of
Ontario provides the following definition:

Outdoor and experiential education (OEE) distinguishes itself from classroom
learning by using the student’s whole environment as a source of knowledge…. While learning about the environment is a significant concern, OEE encompasses
more than studies of nature. It uses the outdoors – both, natural and constructed –
to promote learning from experience, and it can be used to enrich every
curriculum subject. (Foster & Linney, 2007, p. 10)

Although EE can occur indoors and without experiential components, these fields of
education do share certain aims. Furthermore, drawing upon outdoor and experiential
elements can assist educators to approach EE in a manner which engages students.

During the 1980s, awareness of global development issues arose, as well as the
emergence of values education. EE has been deeply impacted by the concept of
sustainable development as defined in the Brundtland report of 1987 as “development that
meets the needs of the present without compromising the ability of future generations to
meet their own needs” (UNESCO, 2002).

The emergence of education for sustainable development (ESD), after the Earth
Summit in Rio de Janeiro in 1992, was followed by some controversy. Central to the
controversy was the anthropocentric view espoused in the concept of sustainable
development, in that it advocates meeting the needs of humans over time, with no
mention of the needs of all other species on the planet. In addition, the term sustainable development had become a vague slogan, and for others it was logically inconsistent, implying continued growth that is an inherently unsustainable practice (Jickling, 1994). While international attention to ESD has created a framework for discussion, ESD does not provide the same opportunity as EE for unbiased instruction, as it does not allow for the controversy surrounding the term sustainable development to be included in the discussion. Instead, it advocates for sustainable development by stating in its title that the purpose is to educate for sustainable development. I use the term EE throughout the study, as opposed to ESD, as I view EE to be more inclusive, incorporating, but not centered on, concepts of sustainable development. I am interested in investigating the broad spectrum of environmental issues, theories, and approaches, and the term EE reflects that.

Defining EE and its Objectives

EE is a complex field combining content and educational methods from diverse areas. I have come across different definitions and objectives for EE. However most are worded broadly enough that they are not mutually exclusive of one another. One definition of EE that has been influential to my understanding is given by Lucas (1972) who states EE “can refer to education about the environment, for the (preservation of the) environment, or in the environment” (p. 98). He elaborates that EE may occur as any combination of in, about and for and with reference to any environment (including different geographical locations as well as at multiple scales). Due to the extensive scope of EE, there are no exclusive or set content areas. However, EE often includes subject matter from multiple domains, such as the study of ecological and physical aspects of the earth, as well as concepts from the social sciences and economics (Lin, 2002). What may
bring the different components of EE together are the overarching objectives of the educators teaching it. Therefore, I will briefly review some objectives of EE found within the literature.

Defining the objectives of EE might be the best way to link various components of the field of EE, considering the diversity of content material possible. One example is a definition of EE stemming from a working meeting, over thirty years ago, sponsored by the World Conservation Union and UNESCO. It is:

Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture, and his biophysical surroundings. Environmental education also entails practice in decision-making and self-formulation of a code of behavior about issues concerning environmental quality. (World Conservation Union [IUCN], 1970, as cited in Hart, 2007)

A later IUCN report states that, “A new ethic, embracing plants and animals as well as people is required for human societies to live in harmony with the natural world on which they depend on survival and wellbeing” (IUCN, 1980, section 13, as cited in Hart, 2007). This second definition seems to have became more refined and focused on changes needing to be enacted. Sauvé (2005) created a framework to consider 15 different currents, or general ways, for envisioning and practicing EE. Each particular current may have its own specific objectives within EE. For example, in the systemic current a main aim is to “develop systemic thinking: analysis and synthesis toward a global vision” while the eco-education current’s aim is to “construct one’s relationship with the ‘other-than-human’ world” (p. 33–34). However some researchers have attempted to provide a common objective for all EE. Stapp (1969) defined the purpose of EE as “producing a citizenry that is knowledgeable concerning the biophysical environment and its associated
problems, aware of how to help solve those problems, and motivated to work toward their solution” (p. 31).

These goals of EE might reflect utopic ideals. However, they are also grounded in the need for a change from our current practices, which are causing a multitude of negative environmental consequences. By including EE in learners’ experiences, they can develop a sense of themselves within a larger context.

**Settings for EE**

Contemporary EE can be presented through a wide range of formats including both formal and non-formal educational settings. In the formal school sector EE can be found within curriculum documents as well as in volunteer environmental initiatives led by teachers and students within the school. The global context of EE within formal education was investigated by Palmer (1998). Submissions were collected from educators and researchers from different countries, including Australia, China, Ecuador, Greece, Romania, South Africa, Uganda and the United States. This global snapshot demonstrated a wide range of commitments to including EE within national educational curricula, ranging from a few optional elements present in the curriculum, to legislation mandating EE objectives. For example, in Australia, Japan and the U.K. there are laws promoting EE at the national level. In the U.S., the EE Act of 1990 created an Office of EE that operates from within the Environmental Protection Agency. The EE Office provides grants and access to EE learning resources (Binstock, 2006).

In Canada the curriculum is determined at the provincial level, and as a result it varies, sometimes greatly, between provinces. However, a commonality between the curricula in many provinces is that EE does not have a strong presence. EE has often even
been omitted and included only by educators who have felt a sense of personal attachment to the subject and value its importance for learners (Binstock, 2006; Palmer, 1998). The Pan-Canadian Framework of Science Learning Outcomes is a policy document produced by a collaboration of provincial ministries of education in an attempt to harmonize what is taught in science across Canada (Council of Ministers of Education, Canada, 1997). EE permeates this document and explicit reference is made to attitudinal goals, including those that benefit the environment based upon scientific knowledge (Hart, 2002). Most Canadian provinces have now included EE in the curriculum in some manner. Below, I offer the differing approaches taken by two provinces, Ontario and Quebec.

In Ontario, EE is most visible in the subject area of Science and Technology. It is found within the elementary science document in the form of terminology such as biodiversity, climate change and sustainability (Ontario Ministry of Education, 2007b). At the high school level, the Ontario Curriculum previously included an elective course entitled Environmental Science. These electives were eliminated in 2000, with the intent that EE would then be integrated into all subject areas. EE content now appears primarily within the sciences, geography, history and civics curricula, while it is rarely mentioned within the social sciences or business studies curricula. Occasionally, EE may be creatively brought into secondary schools in the context of locally developed and interdisciplinary course credits (Ontario Ministry of Education, 2007c). As the integration of EE is left to the discretion of individual teachers, students may never be exposed to EE in their courses. In the wake of the elimination of EE as a distinct subject, teachers are allotting substantially less time to EE content than if it had remained within the curriculum (Puk & Behm, 2003). Recently the Ontario Ministry of Education (2007c) has made an attempt to bring EE back to schools by producing a document entitled Ready, Set,
Green that highlights existing EE programs and provides a listing of EE teacher resources. However, this initiative falls short of having environmental science or studies as its own discipline within the curriculum.

In Quebec, EE appears in the form of a broad area of learning under the heading “Environmental awareness, and consumer rights and responsibilities” (Ministère de l’Éducation, du Loisir et du Sport [MELS], 2005, p. 46), used to anchor cross-curricular and subject-specific competencies. The objective of this broad area of learning is to “encourage students to develop an active relationship with their environment while maintaining a critical attitude towards exploitation of the environment, technological development and consumer goods” (MELS, p. 47). This would appear to be more along the lines of a transdisciplinary approach, whereby integrated themes, such as global issues, environmental issues, citizenship education and social issues form the backbone of a new educational curriculum, and are not merely infused into the existing curriculum (Chen, 1997). This form of inclusion of environmental content is a step in the right direction. However there are no means of ensuring that the content will be passed on to students if the teachers are not capable, comfortable and, in circumstances where EE is not mandatory, willing to make the extra effort to integrate EE in their teaching practice. In both provinces EE is not yet necessarily present in schools; this leaves a gap in EE instruction that educators from the non-formal education sector may help to fill.

Contemporary EE occurs in a variety of non-formal settings, such as at: (a) outdoor centres, (b) camps, (c) after-school programs, (d) youth groups, (e) conservation areas and parks, (f) zoos and museums, (g) libraries, and (h) other community-based organizations. In addition to occurring in settings outside the classroom, non-formal programs have commonalities, such as purposes that are not uniformly or solely
educational, and a wide variation in participant exposure to programs, ranging from a visit of an hour, to intermittent meetings throughout the year (Norland, 2005). Taylor and Caldarelli (2004) describe non-formal education as learner-centered, responsive to localized needs and having less hierarchical relationships between the learner and facilitator than education occurring in formal settings.

It is also possible to find outdoor adventure and eco-tourism companies offering EE within their programming. These outdoor experiences help develop learners’ understanding of their local environment, an important element of EE (Basso, 1996). Despite the importance of forming a relationship with the outdoor world, students currently have far fewer natural areas in which to explore and develop environmental sensitivity than did the youth a mere generation ago. Children who grow up in areas that are highly built-up and ecologically barren “are deprived of the sensory stimuli and the kind of imaginative experience that can only come from biological richness” (Orr, 2004, p. 161). Therefore, non-formal programs may play an important role in bringing children outdoors, as much formal education occurs within the confines of a classroom.

Another source of concern is that in formal educational settings EE is often relegated to the realm of science where, as Bonnett (2007) states, “a largely analytic/instrumental/invasive rationality dominates” (p. 708). Bonnett further explains that what is needed is a kind of knowing where personal, moral, and aesthetic dimensions are embedded, where “fact and value” need not be separated (p. 714). This artificial dichotomy, between knowledge that is felt-based and knowledge that is thought-based, may best be bridged by providing learners with experiences in the natural world, where diverse disciplines are interconnected. Therefore, educators should be aware of the diminishing role the natural environment plays in the lives of their students and have the
knowledge and ability to facilitate teaching EE in outdoor or natural settings whenever possible.

Educators of EE: Preparation and Perspectives

The need for professional educators who are capable and willing to implement EE in their practices is essential if EE is to gain further ground within formal educational settings. The United Nations Educational, Scientific and Cultural organization produced a series of reports throughout the 1980s regarding EE. One report referred to environmentally educated teachers as the *priority of priorities* (UNESCO-UNEP, 1990). In the document it was stated that teachers should first develop foundational competencies in professional education, and then gain competencies in EE content at four levels: (a) ecological foundations, (b) conceptual awareness, (c) investigation and evaluation, and (d) environmental action skills. Two areas of literature will be further considered in this section, they are: (a) learning to teach EE, and (b) educators’ perspectives on teaching EE.

*Learning to Teach EE*

Oulton and Scott (1995) explored various theories and models regarding teacher education and EE. They found that teacher education programs need to contain two main elements, the theory and practice of EE, as well as personal experiences in EE, in order to form educators who will be both willing and able to make a contribution to EE. Oulton and Scott also suggested that some of the competencies in the UNESCO-UNEP report might be best approached with in-service development, or professional development programs, in addition to pre-service teacher education.
Countries such as Spain and South Africa have begun to implement the theory and practice of EE within teacher education at the national level (Palmer, 1998). However according to research by Lin (2002), 48.6% of a sample of 35 teacher education programs in Canada did not present student teachers with any training in EE methodologies. The situation was summarized by Wilke (1985) as follows, “If teachers do not have the knowledge, skills, or commitment to environmentalize their curriculum, it is unlikely that environmentally literate students will be produced in K-12 schools” (p. 1). Since environmental educators “play an important part in promoting and improving the capacity of individuals to address environmental… issue[s]” (Lin, p. 4), it can be argued that there is a critical need to improve the preparation of educators as it will lead to more effective EE being taught.

Improving the ability of teachers to instruct EE can be accomplished through both pre-service programs and in-service professional development (Fien & Rawling, 1996; Van Petegem, Blieck, Imbrecht, & Van Hout, 2005). The North American Association for Environmental Education (NAAEE) has produced a document on the development of national standards for EE, which has resulted in the formation of six guidelines to assist in the development of programs for pre-service and in-service teacher preparation. The themes are (a) environmental literacy, (b) foundations of EE, (c) professional responsibilities of the environmental educator, (d) planning and implementing EE, (e) fostering learning, and (f) assessment and evaluation (NAAEE, 2004). As part of a larger trend across the United States towards certifying professional fields, the NAAEE has recently begun implementing pilot certification programs in various states. This allows for the aforementioned characteristics and content to be explored while educators gain
certified recognition. In Canada there is no similar certification process. However, many Canadian universities have commenced offering courses or programs in EE such as the Université de Québec à Montréal’s post-degree short program in EE, as well as a certificates and a Master’s level degree in EE and Communication through Royal Roads University’s Canadian Centre for EE (Environment Canada, 2002). In the Ontario context, a recent report on teacher preparation has also made reference to the need to prepare all teachers for EE, and stated the possibility of having an additional qualification course, a form of professional development, on environmental science (Ontario College of Teachers, 2006). Currently, at least one university (The University of Western Ontario) runs such a course for high school level teachers (Ruth Heard, personal communication, July 14, 2008).

My interest in learning about environmental educators’ views is to understand what they consider influential in their preparation for working in this field. As noted previously, significant life experiences have been found to play formative roles in people’s development of attitudes towards the environment (Palmer et al., 1998). Others have considered the influence of formal educational settings in preparing educators to instruct EE. For example, research by Paige, Lloyd & Chartres (2008) investigated a pre-service teacher education program which aimed to develop several specific elements within pre-service teachers: (a) social justice and equity, (b) futures thinking, (c) sustainability, (d) education for community living, (e) well-being, (f) relationship building, (g) professional competence, and (h) program and course delivery. Teacher education programs implementing EE must consider the example they set by their choice of teaching format in addition to the content that is selected. The question arises regarding
how these courses and certification programs could meet the needs of preparing educators for the field of EE while considering the varied contexts, both in school and non-formal settings, in which EE occurs. Guidelines such as those of the NAAEE, mentioned earlier, were formulated by researchers in conjunction with American EE practitioners and include elements they viewed as integral to EE instruction (NAAEE, 2004). However whether or not those elements are also reflective of contexts in other countries, such as Canada, is not certain.

Research in the field of EE has progressed significantly since the 1970s. The investigation of knowledge in EE was predominantly for the purposes of investigating the relationship between knowledge, attitudes, behaviours and teaching practices (Hart, 2007). At that time, emphasis was placed on applying pure scientific principles in a nature context and requiring methodologies that were objective to assess different instruments (Robottom, 2005). For example, a survey conducted in the 1970s in 500 high schools across England assessed students’ baseline factual and conceptual knowledge regarding the environment and compared it with their attitudes towards the environment (Richmond, 1978). Since then much progress has been made towards including different forms of research, such as those that provide qualitative findings. The section of EE research that benefited greatly with this shift was the study of the perspectives of educators regarding their teaching practices.

**Educators’ Perspectives on Teaching EE**

Daskolia and Flogaitis (2003) conducted a literature review to compile a list of teacher knowledge, professional teaching abilities and competency elements that have been considered important in prior EE studies. They then constructed and tested a survey
instrument with 48 knowledge and ability elements. The researchers grouped the elements according to themes prior to the study and were interested in determining if particular themes were viewed as more important for EE than others. The knowledge element categories were: (a) introductory knowledge of EE, (b) knowledge of teaching practice and evaluation in EE, (c) knowledge of learning and learners, and (d) knowledge of environmental issues and problems. The four ability categories were: (a) teacher’s management of EE programs, (b) teacher’s management of interpersonal relations with and among students, (c) teacher’s self-appraisal of teaching practice, and (d) teacher’s management of environmental information. In Greece, where the research was conducted, EE is part of the mandatory secondary school curriculum. Three hundred teachers were recruited to respond to the survey. Participants rated the importance of each element using a five-point Likert-scale. The results of the study included a ranked order of importance for each knowledge and ability element, based on statistical analysis of their mean values. In addition a factor analysis was conducted to test the structure of the model they developed using the results. Their study considers the views of environmental educators while obtaining a sense of the larger trends regarding views in EE. This research greatly influenced the development of the method and survey instrument used in the present study.

In Canada, Hart (2003) used a qualitative methodology, specifically using storied narratives collected by interviews, to consider EE from the practitioners’ points of view. Hart did not attempt to draw conclusions about particular teaching behaviours; rather he gave a voice to a set of motivated educators who excelled in bringing EE to their learners. However, there were dilemmas with this approach including, “How to capture the complexity of teacher motivations as tacit, intuitive, and only partially coherent and
consistent” (p. 201). This book was very influential in crafting my research study as it encouraged my desire to hear what environmental educators have to say about their own field of expertise. However, it should be noted that Daskolia and Flogaitis, as well as Hart, focused solely on teachers in the formal educational settings, whereas EE also occurs within many non-formal educational contexts.

Taylor and Caldarelli (2004) explored the beliefs of 13 environmental educators working in non-formal settings, specifically outdoors in U.S. state or local nature park settings. Qualitative methodologies were used, including interviews and photo-elicitation techniques, whereby a video of the participant delivering an EE program was observed and discussed between the researcher and participant. Among their results were themes common among educators working in non-formal settings, which included: (a) identifying themselves as “jacks-of-all-trades” to carry out their work, (b) customizing the programs to be “participant-centered” while using a “hands-on approach”, and (c) making the experience “fun” (p. 457–462). Taylor and Caldarelli concluded that their findings may be specific to those working in state and nature park settings, and should not be generalized to all non-formal contexts.

In addition, a framework by Sterling (2001) separated concepts into different levels of thought. Sterling’s distinguished three different levels of learning and change. At the first level learning takes place within accepted boundaries of conventional education and leaves basic values unexamined and unchanged. The second level learning process has elements of critical reflection, and examines the learner’s assumptions. In order for the third order of learning to take place, also known as transformative learning, a shift in the person’s paradigm must occur and they will begin to consider the situation with “a deep awareness of alternative worldviews and ways of doing things” (Sterling, p. 15). The
latter form of learning is of particular value for EE as it allows education to sincerely begin to address environmental content and ethic. Sterling applies this framework to the current environmental context by explaining, that first order learning may lead us into doing more of the same actions, the same ones which have generated this crisis. Conversely, by reflecting on our practices (second order learning) or by achieving transformative learning (third order learning) within educational systems, teaching and actions supporting a more sustainable future may be facilitated.

Summary of the Literature Review

The present study draws upon the previous literature in the field of EE in order to provide more in depth background for the research questions listed in Chapter 1. The magnitude of our environmental impact has created a critical situation on the planet where complex systems are being disrupted on a global scale. EE strives to prepare students for a future that will pose, as yet, unknown challenges upon them. National and provincial curricula have partially integrated the concepts of EE. However the educators who are responsible for teaching EE have not necessarily been provided with adequate preparation to integrate EE within their teaching practices. Previous research has been conducted on knowledge and abilities important for environmental educators, as well as teacher education for EE. However, it will be beneficial to further explore the perspectives of Canadian environmental educators regarding their teaching of EE. In the following chapter the methods used to investigate the research questions are clarified.
CHAPTER 3

METHOD

Overview

This chapter describes how the research questions of the study were investigated, and is divided into four sections. The first section explains the use of a mixed-method approach, incorporating quantitative and qualitative research. The second section discusses the logistics of the study including the location and duration of data collection. The third section describes the research design and the instruments used, specifically, an electronic survey (e-survey) and interview guide. The fourth section of this chapter clarifies the process for selecting participants and explains how the data collection was carried out during the e-survey and the interviews.

Mixed-Method Design

I developed a mixed-methods approach in order to investigate environmental educators’ perspectives. The mixed-method approach allowed a more full investigation than would have been possible by qualitative or quantitative means alone (Tashakkori & Teddlie, 2003). This approach involved the collection, analysis and integration of both quantitative and qualitative data in order to best answer the research questions. The need to consider educators’ views in-depth, through qualitative methods, struck me as being of the utmost importance. However, in addition, I wanted to gain a general perspective from as large a population of Canadian environmental educators as possible by using quantitative methods. Therefore, in order to avoid sacrificing ‘breadth for depth’ or vice versa this study employs both qualitative and quantitative methods (Patton, 2002, p. 227).
Employing the strengths of both methods provides a more comprehensive picture of environmental educators’ views and may assist in gaining new insights that would not otherwise be identified (Axinn & Pearce, 2006; McMillan & Schumacher, 2006).

Employing mixed-methods requires competency working with each method type, as well as extensive data collection. In order for the mixed-method approach to function, it is important to ensure validity for the quantitative elements and credibility for the qualitative ones. In order to achieve reliability for the survey, I selected a large enough sample group to enable me to remark on general trends and to consider generalizations. For the qualitative research to be viewed as credible, I worked to demonstrate quality, authenticity, as well as value and utility (Patton, 2002). The present study also employs multimethod research, which means “what is learned from one particular method is integrated in the application of a later method” (Axinn & Pearce, 2006, p. 1).

Environmental education research has been conducted using many approaches, including those that I have selected for this study, surveys and interviews. By using an e-survey instrument, I was able to solicit the views of a large number of respondents on the topic of instructing environmental education. However, the survey limits possible responses to the options available, which may not adequately represent the opinions of the participants. Therefore, in addition, I conducted interviews with selected respondents to further understand their perspectives and gain snapshots of environmental educators’ views and beliefs. By using both methods, I investigated the perspective of a sample of Canadian environmental educators and then analyzed in-depth the views of a subsection of these educators, using interviews to gain a more detailed understanding.
Study Location and Duration

Prior to commencing data collection the research received ethical clearance from the Queen’s General Research Ethics Board. The two phases of the study were conducted at different locations at different points in time. The e-survey was web-based. Recruitment of participants and their responses were achieved through e-mail correspondence and the website where the survey appeared. I then sought additional permission from environmental education list-serves to assist in disseminating the address link to the e-survey’s website. The survey was made accessible for a period of one month in the autumn of 2007, during which responses were collected.

The second part of data collection, the interviews, occurred mostly over the telephone, as was the case with seven of the participants. However, it was possible to interview four of the participants in person, as they were located in areas to which I was able to travel. The interview locations included: (a) the graduate student facility interview room at the Queen’s Faculty of Education, (b) conference rooms in a museum, and (c) a participant’s living room. The interviews occurred over a six-week period, immediately following the e-survey data collection.

Research Design and Instruments

The present study included the design and use of two separate research instruments. An e-survey was designed to be widely distributed among environmental educators and capture their views regarding knowledge and abilities. The interview questions were designed based upon the e-survey results and aimed to elicit more in-depth responses from participants.
E-Survey Design

The aim of the e-survey was to gain a general snapshot of the views of Canadian environmental educators’ regarding what knowledge and abilities were important to possess for their work. After considering the numerous advantages and disadvantages of internet based surveys, I opted to present the survey in the format of an online website in order to make it accessible to a large number of potential participants, while to aiming to respect the environment by reducing paper use. Although, I recognize that e-surveys have their respective environmental impact as they require computer use.

Another concern was the authenticity of respondents’ identities. While I intended for the survey to be filled in by environmental educators, there was no way of verifying whether all respondents would typically identify themselves as such. However, since the participants self-identified within the survey as environmental educators, the unit of analysis for the e-survey can be considered a sample group of Canadian environmental educators.

The survey consisted of three sections: (a) demographic questions, (b) questions that ranked knowledge and ability elements, and (c) open-ended questions regarding missing elements and experiences influential to their EE practice (see Appendix A). The e-survey required 10–15 minutes to complete. This duration was selected in order to promote participation and to favour the response rate. The knowledge and ability elements were selected based on an existing instrument by Daskolia & Flogaitis (2003), guidelines developed by the North American Association for Environmental Education (2007), suggestions made by Environmental Education Ontario (2003), research by Hart
(2003) and my own knowledge as a graduate from an environmental science undergraduate program.

When selecting the 36 elements to be used in the survey, I used a framework set out by Sterling (2001) based upon three orders of learning and change. First order elements of change or learning would take place within accepted boundaries of conventional education and leave basic values unexamined and unchanged. Second order change or learning would have elements of critical reflection, and would examine the learner’s assumptions. Third order change, or transformative learning, occurs when a person considers an issue from a completely different perspective, enabling a shift of consciousness to occur with resulting changes in beliefs or actions. Using this framework and my subjective interpretation, I categorized each of the 36 elements as being of first, second, or third order. For example I labeled, “the goals and evaluation methods commonly used in EE” as a first order knowledge element, “adding components of EE into multiple discipline areas” as a second order ability element, and the knowledge of “complexity of environmental systems viewed through a holistic perspective” as a third order element. This organization of the elements allowed me to create six questions each containing six elements, two from each of the three order levels. The arrangement of the elements was assigned randomly.

Participants were asked to rank the six elements within each question in order of importance. Three of the six questions asked participants to designate how important it was to have knowledge of a specific element, such as the “the goals and evaluation methods commonly used in EE.” In the other three questions participants ranked the importance of an ability to execute a particular element, such as to “role model reasoned, respectful, and environmentally responsible behaviours to students.” The final section of
the e-survey consisted of three open-ended questions where participants were given an opportunity to explain other knowledge or abilities that they felt had been omitted from the list. Participants were also invited to share an experience that they considered had been influential in developing their views regarding EE.

**Interview Questions**

The second phase of the data collection used a multimethod design strategy, in that the interview questions were formulated based upon the preliminary results from the e-survey. This allowed further investigation of the factors that environmental educators had selected as being most important on the e-survey. A standardized open-ended approach was selected for the interviews as they provided an avenue through which the environmental educators could give elaborate and descriptive responses, while also focusing the content of the interview on the research question. In addition, having standardized questions facilitated analysis, “making responses easier to find and compare” (Patton, 2002, p. 346). While the questions were standardized, participants were free to omit or modify questions to suit their context. One participant opted to not follow the standardized questions; rather he touched upon all of the content of the questions using a narrative approach. Therefore, while the research was facilitated by using a standardized interview approach, when it was evident that it would not be effective in a particular context, I adapted the method.

The set of twelve open-ended questions in the interview guide focused on: (a) their views and beliefs concerning elements important to the teaching of EE, (b) their personal experiences that had fostered these views, and (c) their opinions regarding how future environmental educators could best be prepared (see Appendix B). By using a pre-
determined set of questions the interviews yielded (for the most part) responses that focused on the central themes of the study and facilitated the analysis process. The unit of analysis for the interviews was the individual, as each person’s perspective was unique and context specific. This is similar to a constructivist framework which suggests that the unique experience of every individual in “making sense of the world is as valid and worthy of respect as any other” (Patton, 2002, p. 97).

Participant Selection and Data Collection

The participants for the e-survey and interviews were Canadian environmental educators recruited electronically through EE list-serves and personal communications. The data collection occurred over several months beginning in October 2007 with the e-survey, followed by the interviews which were completed in January 2008.

Phase 1: The E-Survey

The first phase of data collection was an e-survey sent out to environmental educators. The criterion for participating in the survey was that participants were to consider themselves to be educators who had integrated EE within their teaching practices. Participants included (a) classroom teachers, (b) facilitators at outdoor centres, museums and camps, (c) interpretation staff at parks or nature areas, and (d) leaders of recreational groups or clubs.

I employed a number of approaches in recruiting participants for the e-survey. The first approach was to gain access to environmental educators by contacting various EE organizations at the local, provincial and national levels, including Environmental Education Ontario (EEON), the Alberta Council for Environmental Education (ACEE),
and the Canadian Network for Environmental Education and Communication (EECOM), and requesting permission to use their list-serves to send out an e-mail with an explanation of the study and link to the e-survey website. The other method I used was a form of purposeful sampling known as the snowball approach, or chain sampling. I began by contacting acquaintances in the EE field and alumni of the Queen’s University Outdoor and Experiential Education program and asked them if they, or any of their environmental educator colleagues, would be interested in participating in the e-survey. If that was the case, I requested that they forward a survey link via e-mail to the other educator(s) and to notify me of the number of people that the survey would reach. I recruited participants for a period of one month. During this period approximately 1750 environmental educators received recruitment e-mails, from which I received a total of 148 responses. The response rate was 8.5%.

The survey was created as a series of linked web pages, designed using Dreamweaver software. The first page consisted of an introduction with information typically found in a letter of information and consent form (see Appendix C). Individuals who consented to the terms of the research could then proceed to the webpage with survey questions. Once participants submitted their responses two things occurred (a) an e-mail was sent to my account with their responses and (b) they were redirected to a third webpage, the purpose of which was to thank them for their participation and to recruit potential participants for the interviews (see Appendix D). Respondents then either closed their web-browsers, or if they were interested in taking part in an interview, submitted an e-mail address and additional demographic information. When this information was submitted once again two actions occurred, (a) participants were directed to a final webpage to be thanked and (b) a new e-mail with their information was sent to a different
e-mail account. Having the two e-mails from a respondent sent to separate accounts allowed for the survey responses to be anonymous, by not becoming associated with the participant’s e-mail address.

The analysis of the e-survey responses involved entering the data into Excel software. Participants had ranked the top three elements in each question (of which there were six). As a result each of the 36 knowledge and ability elements had a certain number of participants who had selected it as the being the “first,” “second,” or “third” most important element in its question. Using these rankings I found the elements that had received the most “first most important” selections within each question. I also calculated a score for each element by assigning weighted point values. Three points were awarded for each time that an element had been selected as “first most important,” two points for “second most important,” and one point for “third most important.” I then added these points together to find which elements had the highest weighted point value, and therefore were regarded as most important by the participants. These weighted point values were used to determine the top ten ranked elements discussed in the results chapter.

Phase 2: The Interviews

In order to conduct the standardized open-ended interviews, I aimed to select approximately 10 environmental educators from the pool of e-survey participants who had indicated that they were interested in participating in an interview. This pool was composed of 74 individuals from the original 148 participants. The reasoning behind having about 10 interview participants was to allow for an array of different perspectives to be included while maintaining a small enough sample to ensure that in-depth qualitative analysis could be conducted within the timeframe of the study. The objective
was to select a sample reflecting a variety of backgrounds and years of experience, hence providing a wider range of possible influences on EE views from which to draw upon during qualitative analysis. Although the data generated from these interviews is not generalizable to the entire population of environmental educators, using a heterogeneous set of interview participants helped to ensure a rich and varied data set.

A mixed purposeful sampling approach was used, which combined various strategies to obtain my desired sample. Interested interview participants provided their e-mail addresses and demographic data at the end of the e-survey. I used this information to separate potential interviewees into different categories, based upon (a) their years of work experience (1-5 years, 6-10 years, and 11 years or more) and (b) settings in which they had taught EE (camps, gardens or agriculture, museums, outdoor centres, parks, recreational clubs, schools, or others). I then randomly selected participants from within each stratified group, using a random number generating website (Haahr, 2008). This resulted in the initial selection of 10 interview participants. E-mails requesting participation were sent out to those selected and included a short description of the interview as well as an attachment with a letter of information (see Appendixes E and F for recruitment e-mail and letter of information). After a week and a half had passed, I once again randomly selected potential participants from categories in which no interview participants had yet been secured, and sent out the recruitment e-mail. This process continued until I had sent out a total of 20 requests and had received confirmation from 11 participants that they would agree to be interviewed. Interview volunteers who were not selected were sent e-mails to thank them for their interest.

I communicated with interviewees by e-mail, providing them each with the set of questions prior to the interview taking place. Some questions such as “What do you
consider to be environmental education?” could be somewhat difficult to answer on the spur of the moment, therefore by seeing the questions beforehand I hoped participants felt prepared, or at least more at ease, to provide meaningful and in-depth responses. This was also intended to allow those who would be interviewed over the telephone an opportunity to see the questions, as opposed to only hearing them. E-mail was used to set up the time and location of the interviews. They were intended to last 45 minutes to one hour, to obtain a useful amount of information without fatiguing the participants (Axinn & Pearce, 2006).

On average the interviews took a full hour to complete, the shortest was 45 minutes and the longest 2 hours. Four of the participants met with me in locations of their choice. In these locations a digital recorder was used to record the interview. The other seven participants were situated in geographical locations that I could not feasibly access. Therefore, I conducted these interviews over the telephone using a callcorder wire that connected my digital recording device directly to the telephone line. This variation in interview method did not pose any major differences. However, there were particularities in both scenarios to consider. The in-person interviews required me to be physically involved in the conversation by looking at the interviewee and exchanging facial expressions. In-person there is non-verbal communication which allows for more to be said than is heard in the recording. Unfortunately, it is precisely because of these added variables that it is more difficult to take detailed notes during the interview itself, as it was distracting for me, and possibly the participant too. The telephone interviews did not provide the same interaction. There are no facial expressions to read, therefore at the outset of most telephone interviews I requested that participants not hesitate to ask for clarification on any of the questions, since I would not be able to visually assess if they
had understood. However, a benefit of telephone interviews was that I was able to take extensive handwritten notes on the content of their responses. I feel these interviews, while not as intimate as meeting in person, provided me with the opportunity to learn about the views of a diverse group of educators from different parts of the country.

In all the interview settings I attempted to develop rapport with the participants, by responding to their inquiries, adding questions of particular relevance to the conversation, and occasionally briefly mentioning some of my own experiences. I understand that as the interviewer I was part of the process and hence impacted the responses. Nevertheless, I remained conscious to the need to ensure that their views and beliefs did not become “ours” (Seidman, 2006). I went to great efforts to remain silent at pivotal points in the interview and allow them the time to fully construct their responses without intervention on my part.

The ethical considerations regarding participants’ consent varied slightly for the two interview methods. Participants whom I met with in person were given two copies of the letter of information and consent form. I kept one of the signed copies of the consent form and they retained the other for their records (see Appendix G). In the telephone interviews, in order to obtain consent I read a scripted version of the letter of information and consent form to the participant prior to commencing the interview (see Appendix H). The final statement I read was, “Do you still wish to participate”? To which all of the interviewees agreed.

The interviews were conducted using the standardized questions and participants were encouraged to provide as much detail as they desired in their open-ended responses. I occasionally used probes to elicit more in depth understanding, or re-worded questions that had terminology which were not familiar to all participants. For example, the
definition of the word “holistic,” or specifying that questions regarding the “current educational system” referred to their experience of educational systems as opposed to a particular provincial context. Many participants had read the questions beforehand and some had even prepared references to relevant works or had printed out documents that they believed might be of interest to me.

At the conclusion of the interviews I asked participants if they would like to look over their transcripts once they were ready, to which seven of the participants were receptive. This form of member checking was to preserve the participants’ basic rights to the interview material and to ensure that they were comfortable with its use in the study (Seidman, 2006). At the conclusion of telephone interviews, I sent an e-mail to the participants with the contact information normally found on a consent form, to ensure that should they have any inquiries or concerns, they could direct them accordingly (see Appendix I). Once each interview had concluded I went over the handwritten notes I had taken during our conversation, filling in any incomplete thoughts and adding in comments about such things as the interviewee’s comfort with the process or any circumstances, such as time constraints, which may have impacted the interview process.

I transcribed six of the interviews and the remaining five were typed by a transcriber (see Appendix J). This combination allowed me to experience the transcription process, get a sense for the data and ultimately, have a greater amount of time to dedicate to analyzing the contents of the interviews. The transcriptions completed by the transcriber were full transcriptions. Some of my transcriptions were partial in nature, with a minimum of 80-90% of the original content being transcribed. This allowed me to exclude portions which were of minimal relevance to the purposes of this study, as well as to include French terms used in a couple of the interviews which might have otherwise
been problematic. However, no translations were conducted, as all terms were explained in English by the interviewees at later points during the interviews.

The interviews were imported into Atlas-ti software in order to facilitate the qualitative data analysis process, which occurred over a period of several months. I read though opening sections in a few of the interviews and attempted to perform microanalysis of the content, followed by open and axial coding (Strauss and Corbin, 1998). This process was not overly successful, as I had difficulty in filtering out details of the interviews and creating themes at a more abstract level. This initial coding of the interviews resulted in the creation of 89 separate codes. Many of these codes were demographic descriptors or were used to divide the interviews into the separate questions I had asked. This phase of data analysis was useful in helping me to become much better acquainted with the data. However, it was ineffective in framing dominant themes emerging from the interviews and did not provide me with a solid grasp of how to interpret the information participants had given me.

With the assistance of my supervisor, I embarked on the second analysis phase. Together, we looked at the interviews with a fresh perspective and used an in-vivo coding approach (Strauss and Corbin, 1998), whereby we began by looking at the interviews anew and elicited codes from terms that the participants had used themselves. For example, “creating awareness” was mentioned as a form of engagement and interest, therefore this became a code that was general enough to be applicable throughout the interviews and still conserved its meaning. This time I limited the number of codes to 18, and maintained them at a more abstract level.

In an effort to add credibility and strengthen confidence in the coding of the interviews, I used a form of triangulation, inter-rater reliability, whereby a colleague in
the Master’s of Education program re-coded portions of the transcripts so that inconsistencies could be evaluated. I gave a sample of text from each transcript to my colleague, equalling in length approximately one tenth of the entire transcriptions. I also supplied a list of the 18 codes, and their definitions that I had developed and assigned to the data during the analysis process. Unfortunately, due to geographical constraints, I had to e-mail the transcript excerpt and code list to my colleague along with instructions on coding procedure. Therefore, we did not have an opportunity to code a sample transcript together in-person, which would have assisted in giving my colleague a feel for the extent and type of coding that I had conducted.

This turned out to be problematic as when we did have an opportunity to meet in person, after my colleague had conducted most of her coding, it became clear that there were some discrepancies in our understanding, and therefore also our use of the codes. For example, the code “passion of educator” was assigned 25 times throughout her excerpt as she used it whenever the participant stated something passionately, whereas I assigned the code only twice, when the educator explicitly mentioned their passion for their work. Similar differences were apparent for 5 of the 18 codes. In addition she had applied the codes at a much higher rate than I had, assigning 177 codes throughout the transcript excerpt, compared with only 91 codes assigned in my version, representing almost a 2:1 ratio. Of note is that my colleagues’ tendency to apply large amounts of codes to the data was very similar to my initial attempt at coding the data. Unfortunately, the discrepancy in quantity and style of coding made it impossible to obtain a good inter-rater reliability figure.

However, once we met in person it became evident that despite our different use of the codes, our overall agreement was very high. We both agreed on the strong
emergence of certain codes, the lesser presence of others, and even discussed similar relationships between codes that we had noticed individually. For example, we both found similar passages where the code “EE mandate” coincided with the code “creating awareness.” Therefore, I believe the lack of a strong inter-rater reliability figure is representative of poor initial communication between my colleague and I, rather than unreliable coding. The trustworthiness of the coding and data can also be assessed by comparison with existing literature in the field, which is present in Chapter 5: Analysis and Discussion. In the next chapter, the opinions and perspectives of the educators are shared as well as the major themes that emerged from the interviews.
CHAPTER 4

RESULTS

In this chapter the results of both the e-survey and the interviews are reported. In the first section I describe the sample of environmental educators who participated in the e-survey and report the elements that they ranked as most important. In the second section of this chapter general demographic information about the 11 interview participants is given and the major themes that emerged during the course of the interviews are shared. I list the 18 codes that were constructed and assigned to passages in the interviews. The relationships between the codes were analyzed in order to group the contents of the interviews into major themes. The 12 themes provided responses to the study’s three research questions listed in Chapter 1. The first five themes relate to the question about which knowledge and abilities were most important to environmental educators. The next two themes relate to the research question on influential experiences for the educators. The final five themes relate to the research question on how to better prepare environmental educators. Analysis and discussion of these themes is presented in the next chapter.

Electronic Survey

The e-survey was widely distributed among environmental educators in an effort to establish the views of this population regarding what knowledge and abilities are important for teaching EE. The e-survey’s objective was to provide a general overview of their perspectives so that appropriately geared questions could then be developed for use in the subsequent interviews. The views of e-survey participants are shared below.
Participants

The survey received 148 responses from environmental educators, of which there were 98 women, 41 men, and 9 people who did not specify their gender. The participants had worked in a variety of formal and non-formal settings teaching EE and many reported working in more than one setting over the course of their EE careers (see Table 1). Three quarters of the participants had experience working in school settings. The other category in the table included settings such as at home, with charitable organizations, in government, and in industry. The respondents had taught students from Kindergarten-Grade 6, Grades 7-8 and Grades 9-12 (78%, 79% and 80% of respondents respectively) and as well at the post-secondary level (61%). Thus, the educators taking part in the survey represented a wide range of experience in this field.

Table 1

Settings Where Participants Taught EE

<table>
<thead>
<tr>
<th>Setting</th>
<th>Respondents (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>75</td>
</tr>
<tr>
<td>Outdoor centre</td>
<td>53</td>
</tr>
<tr>
<td>Camp</td>
<td>46</td>
</tr>
<tr>
<td>Park or conservation area</td>
<td>43</td>
</tr>
<tr>
<td>Recreational group</td>
<td>32</td>
</tr>
<tr>
<td>Museum</td>
<td>16</td>
</tr>
<tr>
<td>Garden or agriculture</td>
<td>14</td>
</tr>
<tr>
<td>Other</td>
<td>24</td>
</tr>
</tbody>
</table>
The respondents were distributed almost evenly between having 1-5 years experience (32%), 6-10 years experience (32%) and 11 or more years experience (36%). The participants’ responses came from all jurisdictions across Canada, with the exceptions of Manitoba, Nunavut and Prince Edward Island. However, the main jurisdictions in which e-survey participants had taught EE were Ontario (34%), British Columbia (21%) and Quebec (14%). This may be an artefact of having had a large number of personal contacts in those provinces. However, the largest numbers of recruitment e-mails were sent out by a list-serve in Alberta, with Alberta-based environmental educators representing 9% of respondents.

The respondents had a wide array of educational backgrounds (see Table 2). Many of the participants possessed bachelor of education degrees or teaching certifications (51%) and some participants had completed undergraduate degrees specifically in environmental studies or science (18%). In addition, 59% of the e-survey’s respondents state that they had some form certification in EE. Examples of certifications included by the participants were: (a) Bachelor of Education degrees specializing in outdoor and experiential education; (b) Master’ degrees in EE; (c) training to use EE programs such as Project Wild, Project Wet, and Below Zero; (d) workshops on heritage interpretation, and (c) outdoor activity certifications such as wilderness first aid and Leave No Trace training. Therefore the e-survey participants possessed a diversity of educational backgrounds with the majority having had some training or education related to EE.
Table 2

**Educational Backgrounds of E-Survey Participants: University Degrees Attained**

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Disciplines Included</th>
<th>Undergraduate degrees</th>
<th>Graduate degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Curriculum studies, elementary, intermediate, secondary, first nations, outdoor and experiential education, special education</td>
<td>64&lt;sup&gt;a&lt;/sup&gt;</td>
<td>11</td>
</tr>
<tr>
<td>Arts</td>
<td>Anthropology, Canadian and Arctic studies, communications, child and youth studies, development studies, drama, economics, English, fine arts, French, geography, history, museum studies, political science, photography, psychology, religion, sociology</td>
<td>49</td>
<td>4</td>
</tr>
<tr>
<td>Science</td>
<td>Agroforestry, atmospheric science, biology, cognitive science, computer science, ecology, engineering, ethnobotany, geography, geology, library science, math, natural resource management, zoology</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>Environmental</td>
<td>—</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Science</td>
<td>—</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Environmental</td>
<td>—</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Studies</td>
<td>Kinesiology, sports management, physical and health education</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Health</td>
<td>Heritage interpretation, outdoor education and leadership, recreation administration, leisure studies</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Outdoor Recreation</td>
<td>Commerce, environmental management, marketing</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Business</td>
<td>Environmental law</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Law</td>
<td>—</td>
<td>0</td>
<td>23</td>
</tr>
</tbody>
</table>

Note. The number of degrees listed in the table exceeds the number of participants as many educators held multiple degrees. The dash is used where disciplines were not applicable.

<sup>a</sup> Of the 64 undergraduate degrees, 21 were specialized in outdoor and experiential education.
**E-Survey Results**

Based on the methods used for ranking responses as described in the previous chapter the results of the e-survey are displayed in Table 2. The ranking was obtained using the method described in the previous chapter. The two highest ranked elements in the survey, hence viewed as most important, were the ability to engage learners (i.e. facilitate questions and encourage analysis and interpretation of content) and knowledge of the importance of developing relationships with the natural world through first-hand experience.

In a separate question on the survey (see Appendix A, question seven) participants were asked which one element, of the 36 listed in the survey, was the *most* important for teaching EE. The elements cited by the largest number of respondents were knowledge of the importance of developing relationships with the natural world through first-hand experience (25% of respondents) and the ability to engage learners (12% of respondents). Interestingly, 30% of respondents did not select an element, rather they check marked the box that stated “no one element in particular is most important.”

Another means of considering these results of the survey is to look at them relative to the orders of learning model by Sterling (2001). Of the ten elements listed in Table 2, I had designated six of them as requiring third order learning (elements ranked 2nd, 3rd, 4th, 5th, 9th, and 10th in Table 2). That is, I viewed these elements as requiring a shift of perspectives from the ones found within conventional educational settings in order for these elements to be valued.
Table 3

*Ranking of Most Important Knowledge and Ability Elements*

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Element</th>
<th>Order of learning and change $^a$</th>
<th>Number of respondents who selected element as:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>1</td>
<td>Ability to engage learners (i.e. facilitate questions and encourage analysis and interpretation of content)</td>
<td>●</td>
<td>67</td>
</tr>
<tr>
<td>2</td>
<td>Knowledge of the importance of developing relationships with the natural world through first-hand experience</td>
<td>●</td>
<td>86</td>
</tr>
<tr>
<td>3</td>
<td>Knowledge of place (i.e. experience of environment through local cultural history, geography and ecology)</td>
<td>●</td>
<td>64</td>
</tr>
<tr>
<td>4</td>
<td>Ability to teach EE from a holistic perspective by underscoring the complexity and interconnectedness of the natural environment with society, technology and the economy (i.e. include concepts such as systems dynamics, participatory democracy and the precautionary principle)</td>
<td>●</td>
<td>65</td>
</tr>
<tr>
<td>5</td>
<td>Ability to facilitate holistic experiences that nurture a deeper caring and appreciation for the environment</td>
<td>●</td>
<td>53</td>
</tr>
</tbody>
</table>
### Table 3 (Continued)

**Ranking of Most Important Knowledge and Ability Elements**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Element</th>
<th>Number of respondents who selected element as:</th>
<th>Order of learning and change(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1st choice</td>
<td>2nd choice</td>
</tr>
<tr>
<td>6</td>
<td>Ability to teach students to assess the ecological sustainability of their everyday choices and behaviours (i.e. calculate environmental footprint)</td>
<td>●</td>
<td>44</td>
</tr>
<tr>
<td>7</td>
<td>Ability to role model reasoned, respectful and environmentally responsible behaviours to students</td>
<td>●</td>
<td>46</td>
</tr>
<tr>
<td>8</td>
<td>Knowledge of the responsibilities associated with EE (i.e. value-based elements are approached responsibly, behaviour modeled in class is conducive with EE)</td>
<td>●</td>
<td>47</td>
</tr>
<tr>
<td>9</td>
<td>Ability to connect with members of your community to share knowledge and create opportunities for environmental actions (i.e. with local interest groups, elders/seniors, local businesses)</td>
<td>●</td>
<td>36</td>
</tr>
<tr>
<td>10</td>
<td>Knowledge of own personal views regarding environmental issues and their relation to instruction of EE</td>
<td>●</td>
<td>37</td>
</tr>
</tbody>
</table>

*Note.* The ranked order was determined by the calculation of weighted point values for each knowledge and ability element, as described in the Method Section.

\(^a\)The order of learning or change was assigned to each element prior to the e-survey based on definitions by Sterling (2001).
This suggests that many of the participants did not limit their perspectives to knowledge and ability elements that they may be familiar with due to conventional education programs. It implies, that many of the participants emphasized alternative approaches to EE, specifically those that use place-based, holistic, or reflective knowledge and abilities.

The final questions of the survey (see Appendix A, questions eight and nine) elicited open-ended answers regarding what important knowledge and abilities were lacking and information on participants’ influential EE experiences. The purpose was to gain a wider perspective of the educators’ views to better tailor the questions in the interview guide. The responses included elaborations on the importance of enabling first-hand outdoor experiences with learners and the significance these types of experiences held for the educators. Many recalled the importance of childhoods spent outdoors, and parents that demonstrated environmental ethics, as being influential to their development as educators. In addition there were numerous references to possessing knowledge of the learners in order to involve them as much as possible and adapt EE to the age and interests of the audience. The abilities of role modeling environmental actions, facilitating learner driven learning and engaging in reflective practice were also mentioned by many participants. The educators also elaborated on the significant influence environment related post-secondary education programs and work-based learning had on their development as educators. These e-survey results are similar to the themes that emerged from the interviews.
Interviews with Environmental Educators

The major themes that emerged from the interviews with eleven environmental educators are described below. The first section describes general demographic information about the 11 educators whom I interviewed and an overview of their definitions of EE. While each individual had their own views, I did not attempt to construct case studies about each participant, but rather to share their views in a comprehensive manner. The following sections explore the initial codes assigned to the interviews and the major themes of participants’ responses. The 12 themes are separated into three sections representing the three research questions that have guided this study. Within each section individual themes are explored and examples of interview quotations are given. Quotes have been labeled with the participant’s transcript number followed by a dash and the line number of the quote (e.g., T6-149). The selection of quotations was based on providing an overview of the range of perspectives held by the participants. In this process I included quotations that I felt were diverse, some of which represented views I found problematic, and other with which I agreed.

Participants

The 11 participants were selected for interviews, from the e-survey respondents, with the aim of representing a diversity of professional backgrounds. The sample consisted of five men and six women. These participants also varied in the number of years of experience teaching EE. Six of the participants stated that they had between 5 and 10 years of experience, whereas the other five had between 20 and 30 years. They were from across Canada, with representatives from four provinces, five taught in Ontario, three in Quebec, two in British Columbia and one in New Brunswick. They worked in
many settings, including schools, camps, outdoor centres, outdoor guiding operations and museums.

The focus of the interviews, EE, is a term with multiple definitions as discussed previously in the literature review chapter. Therefore my first question to the interviewees was what they considered to be EE. As one participant stated, “Part of EE is imparting knowledge of the environment, part of it is trying to inspire an appreciation and deeper connection with the environment, and thirdly it’s a provocation or motivation to action” (T5-101). Four of the educators agreed with David Orr’s statement, found in interview question four, that, “All education is environmental education” (1992, p. 90). While another three participants thought that this statement should be the case, but is not the current reality. As one educator remarked, EE is, “the basic education of being a human on the planet” (T2-66).

Coding the Interviews

The interviews were read numerous times and the result of the process was the creation of 18 codes that categorized the content of the interviews (see Table 4). The codes were assigned to individual quotations throughout the interviews. Many of the participants’ quotations had more than one code that was applicable, in these instances the codes were said to co-occur with each other. Of the 18 codes I identified, 8 of them had quotes that co-occurred with at least 13 or more other codes. This indicated that many of the concepts were intricately interconnected.
Table 4

*Interview Codes and Number of Co-Occurrences*

<table>
<thead>
<tr>
<th>Code Names</th>
<th>Number of Co-Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating awareness</td>
<td>16</td>
</tr>
<tr>
<td>Outdoor activities</td>
<td>16</td>
</tr>
<tr>
<td>Changes to school curricula</td>
<td>15</td>
</tr>
<tr>
<td>Relationship with nature</td>
<td>15</td>
</tr>
<tr>
<td>Alternatives or changes to teacher education</td>
<td>14</td>
</tr>
<tr>
<td>Interconnectedness</td>
<td>14</td>
</tr>
<tr>
<td>Using existing curricula</td>
<td>14</td>
</tr>
<tr>
<td>Responsible actions</td>
<td>13</td>
</tr>
<tr>
<td>Educational experience of interviewee</td>
<td>12</td>
</tr>
<tr>
<td>Passion of educator</td>
<td>12</td>
</tr>
<tr>
<td>EE mandate</td>
<td>11</td>
</tr>
<tr>
<td>Using existing teacher education</td>
<td>11</td>
</tr>
<tr>
<td>Indoor activities</td>
<td>10</td>
</tr>
<tr>
<td>Resource or funding constraints</td>
<td>9</td>
</tr>
<tr>
<td>Sharing among environmental educators</td>
<td>9</td>
</tr>
<tr>
<td>Advantage of EE certification</td>
<td>8</td>
</tr>
<tr>
<td>Drawbacks of EE certification</td>
<td>7</td>
</tr>
<tr>
<td>Childhood experience of interviewee</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note.* The number of co-occurrences refers to the number of other codes that shared quotations with the code in question.
Inspired by concept mapping (Novak, 1995), I cut out papers with the code names written on them and arranged them on a sheet of paper. I then drew in lines between codes that had co-occurred. This assisted me in visualizing certain codes as central to the others; particularly the codes of outdoor experiences and creating awareness. All the interviewees had quotes that fit within these two codes, and these codes included the largest number of quotations. Therefore, I came to interpret this as these two codes were central to environmental educators’ views and may be larger themes important to the analysis of the data. While the co-occurrences did not signify the presence of generalizable or directional relationships, they were helpful in understanding that there were relationships between the codes and were essential for uncovering the larger themes within the interviews.

Question 1: Which Knowledge and Abilities are Important for Teaching EE?

The knowledge and ability elements important to environmental educators centered around five main themes: (a) environmental awareness, (b) outdoor experiences, (c) connection with the environment, (d) environmental actions, and (e) passion of educators for their work.

Environmental Awareness

The theme of environmental awareness includes elements such as creating interest and engaging learners about the environment. All of the participants brought up the theme of environmental awareness, either as possessing knowledge related to the environment or as the ability to inspire awareness and engagement within learners. With reference to possessing specific knowledge, one participant explained, environmental educators must “have been with nature, and understand nature and be in awe of nature and then and only then can these environmental educators foster environmental literacy” (T3-334). Being
environmentally aware was a prerequisite for many of the environmental educators to do their work.

The educators also indicated the importance of assisting their students to becoming environmentally aware, as one participant stated, “My job is to increase awareness, create engagement possibilities and create interest at every age level” (T1-49). Many suggestions were made regarding what abilities would be useful to possess to encourage environmental awareness in students including, knowledge of how much information to share and choosing the appropriate times to do so. For example, one participant stated, “I could easily swamp them with way too much information so I have to pick and choose what I teach them” (T1-321). Encouraging learners to explore and think on their own was viewed as important to creating lasting awareness among learners. For example, one teacher elaborated that awareness can be attained by “encouraging scepticism, questioning, debate, [and] engagement” (T10-322). Along similar lines, another educator recounted how he allowed students to make their own discoveries, such as finding a salamander under a log. In these circumstances “they own that discovery, they’re so excited about it” (T9-243).

Ensuring that EE content was age appropriate and did not overwhelm students with negative content was another important ability to several educators. As one participant remarked “Global warming is very complicated, the carbon cycle, all of that stuff. It’s not something that I want to teach a grade four and plus you don’t want to engender what David Sobel calls a sense of eco-phobia, you just scare the hell out of kids and don’t give them any hope” (T9-187). Two other educators held a similar view and stated their belief in approaching EE from a positive angle and making it fun for learners. One way of accomplishing this was by providing EE in the outdoors.

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Outdoor Experiences

The majority of the participants emphasized the value and importance of providing EE experiences outdoors to their learners. Similarly, participants were interested in knowledge and abilities related to outdoor experiences and nature. As one educator stated, “Being outside with nature is the first most important part of actual EE” (T3-330). A number of the educators viewed EE, experiential education and outdoor education to be closely related. For example, one educator elaborated “EE would be a more hands on, experiential based learning, that is not taught through a textbook, or a lecture format” (T7-15). While another educator stated that, “My whole focus, is I want people outside. And I think that it’s really important that we talk about it, the environment when we’re in it” (T5-273). It appeared that for some participants EE’s objectives were interchangeable with those of experiential education and outdoor education. One participant explained that environments, possibly outdoor environments although it was ambiguous, can be used to teach EE as well as other concepts. She stated:

You have a concept like data management, some boring math moment…if you use the environment as your vehicle to get to that destination, some days the environment is where you end up and some days, it’s how you get to something else…. So, you can either use it to illustrate a point or just have it be the point. (T4-169)

Knowledge of outdoor activities for EE was mentioned by all of the participants as being important. Therefore, not surprisingly, having the means to bring learners outdoors was another element that emerged often during the interviews. The ability to facilitate outdoor experiences for learners included having appropriate safety certifications and integrating EE within existing curricula and school settings.

A primary concern to all educators taking their students outdoors is risk
management. Insurance policies, certifications in first aid, life guarding and other skills were mentioned as being required by organizations and school boards in order to bring children outdoors. Since safety is an important concern one participant elaborated that having educators knowledgeable and able to deal with safety and risk-management issues helps ensure that students are “in a comfortable situation where they’re actually capable to learn, and be interested” (T7-47). Being knowledgeable about the risks of going outside allows educators to counteract a society that is increasingly wary of allowing children to explore outdoors. The fear of many school boards and parents to allow their children to go outdoors was discussed by a few of the participants. One educator stated that, “Someone needs to tell them, what kind of children are we bringing up that are afraid to be outside” (T9-227)?

Many participants explained in detail how they were able to integrate EE within the curricula of their particular settings. In a non-formal setting, a participant explained how she was able to bring EE into guiding by including “ecological concepts into the adventure trips” (T8-49). Another educator working in a formal educational setting gave an example of teaching EE indoors using materials brought in from the natural world, he shared:

We’d bring back into the classroom, insect larvae, aquatic insects, and various crustaceans. We’d do net sweeps in the water and bring them back in the classroom for examination. The children would have their own aquariums. All the desks would be covered with bottles, and boxes, and jars and every horizontal space would be equipped with these containers. We’d grow plants in them and put duckweed in. (T10-85)

From the accounts of these educators, being able to connect students in some way to the natural world was essential to EE even if it involved bringing the outdoors inside. However some participants felt that there was more to EE that exploring the natural world.
A couple of educators articulated that being in nature was not enough. They asserted that factual knowledge related to the environment and the area in which EE was taught was essential as well. As one of these educators stated, “The most important thing is just establishing a connection to environment. You can’t do that without having good natural history knowledge” (T9-335). This alluded to there being some basic knowledge that is associated with being an environmental educator. However another participant did not hold the same view, she stated:

You don’t need to know the name of every plant … if you could have a sense of how things function and why things are the way they are, like, big picture…. and if you can get into how it affects people … you could start in a place where they know and then take them into other areas. (T4-453)

Another interviewee explained that it was important to continue being curious and researching in response to learners’ demands. He stated that he would be alongside the river when “inevitably, some elementary school student asks … a question about something that I don’t know about, and that makes me go learn something” (T1-321).

While knowledge about the environment and the ability to take students outdoors were mentioned repeatedly in the interviews, there appeared to be another important element, regarding have an affective connection with the environment.

*Connection with the Environment*

The importance, for the environmental educators, to possess a sense of connection with the natural world, as well as the ability to inspire a similar relationship within their learners was mentioned in ten of the eleven interviews. As one educator expressed, “I’m always concerned about the nature–culture dichotomy where we separate ourselves from the rest of the world and then use that as an excuse to do whatever we like to the rest of the world” (T9-39). Another participant viewed this human–nature separation as a timely
Concern due to the large number of children who are no longer having regular interactions in or with the natural world. She believed that, “The relationship with the natural world with first-hand experience is needed. If we don’t have that….That’s when we lose the connection with the rest of the world, the rest of the reality” (T2-70).

Connection with the environment was described by one participant as “it’s a feeling, [and] it’s a knowing” (T3-94). The knowledge and ability elements that were the focus of the survey can not be considered in isolation of affective elements. This is clearly understood as two educators articulated this position and alerted me to this overlooked element in the initial interview questions. One of these educators explained that the connection with the environment is not just “the expression of the environment as physical stuff all around, but also a spiritual link to all these things” (T11-25). However, another educator warned that EE can not be simplified to just having a connection, she stated that there were certain environmental issues which could never be adequately approached by solely having outdoor experiences or by forming connections with the natural world, for example, “just being outside and playing with nature that’s not it …Burn CO₂ it has an impact. But you don’t see it in nature, you don’t see it anywhere” (T2-74).

Another major consideration for educators was the need for balance between being holistic in scope, viewing everything as interconnected, and not providing enough instruction about any particular area, resulting in EE that is ineffective at creating awareness and connection. As one participant shared:

Everything is ultimately about the environment whether it’s geology, or biology or economics, or social studies, but if you were to try to teach it in that way, I think you would end up watering it down so much that it would become meaningless (T9-167).
The importance of forming a connection between the environment and humans (both the environmental educators and their learners), was also viewed as a precursor to participating in environmental actions. The ultimate purpose of EE for a number of participants was encouraging environmentally responsible actions among their learners.

**Environmental Action**

Most of the educators made the link between teaching EE and having the ability to spark action among their learners. A participant expressed this by considering the relationship between a sense of connection and action, she stated, “You need to touch the people and their feelings inside so they can actually change their mind. If you just give them numbers and facts, they’re not going to change their habits and their ways of life” (T2-42). According to another participant, educators must go even further and provide learners with knowledge and abilities to implement change. She argued that, “Telling people, kids, about climate change is a pointless exercise if it’s not going to connect them with why it’s important out there, in their own backyard, and how it is that they’re going to implement change” (T5-546). This view was shared by a number of participants and many offered suggestions as to what educators should be able to do in order to help empower students to act in environmentally responsible ways.

One participant wanted to see environmental educators affiliate with engineers “to make their schools energy efficient and making, green roofs, solar panels, and at the same time, teaching kids about that stuff” (T9-483). Another participant explained with reference to an elementary school setting, “you start with recycling, you start with easy things and then, maybe …go more towards the what I call the transformative curriculum” (T3-722). This optimism is joined by many of the other educators who felt that they
played an important part by role modeling environmentally responsible actions within their teaching practices. As an interviewee stated, by “role modeling respect for the environment, it shows students, it gives them more accountability” (T7-135). Having educators who are able to demonstrate environmental actions is dependent upon the individual educator’s environmental ethic and desire to bring it to their learners. The interview participants often felt this greater sense of responsibility and purpose within their work, and accordingly, stated that they often made efforts to demonstrate environmentally responsible actions within their teaching practices.

*Passion for Teaching EE*

The environmental educators articulated their reasons for partaking in the instruction of EE despite the complex nature of beliefs and views related to this choice. Most of the educators were driven into this field by a sense of duty towards the natural environment. This stance was exemplified by an interviewee’s statement “we have this incredible natural environment around us, and I feel compelled to take a part in passing this legacy on to future generations” (T5-273). The rationales behind these educators’ teaching practices are their personal values, beliefs and worldviews. The drive behind educators’ reasoning may also be related to the positive influence they have on learners, as one educator stated, “I just took the time to figure out what was important in my life…I felt a sense of mission…When you meet someone who is passionate about something, that passion is transmitted and has to do with values” (T11-237).

Those who teach EE often must persevere despite obstacles and the possibility of getting demoralized by the declining health of the planet. Educators used various methods to keep themselves focused and passionate about their work. For example, one participant
made conscious efforts to keep learning and continued to question herself on what it meant to be a good environmental educator (T11-530). These educators were using their passion for the environment and teaching to provide students with EE experiences.

In response to my initial research question regarding what knowledge and abilities are important for instructing EE. I have outlined the major knowledge and ability themes reported by participants as useful in teaching EE, or influential to their desire and willingness to incorporate EE in their teaching. The next section will consider more in depth the experiences that were influential for the interview participants in pursuing careers in the field of EE.

**Question 2: What were the Influential Experiences for Environmental Educators?**

The prior experiences of environmental educators have undoubtedly contributed to their interest to work in the field of EE. While the interviews did not extensively probe the significant life experiences of the educators, many participants shared anecdotes about where their desire or passion for teaching EE stemmed. This section is divided into two themes: (a) influential childhood experiences, and (b) influential educational experiences.

*Influential Childhood Experiences*

The recurring theme of childhood experiences relating to the outdoors emerged from nine of the interviews. Many of the educators had been avid campers as children. The following participant’s statement is representative of this trend, she said:

I kind of grew up doing this summer camp canoe tripping thing. This was something that I came to that seemed to work pretty well for me... I’ve spent a lot of hours in Algonquin Park, a lot of trees. (T8-57)

Similarly another educator attributed his draw to EE to his “passion for the outdoors”
which stemmed from “personal experiences just being close to nature” (T7-143) that he had from camping with friends as an adolescent.

Many of the participants had also begun to engage in environmental actions by a young age. For example one educator participated in the planting of 50,000 to 60,000 trees, by the age of thirteen (T1-217). This was done with his parents and it assisted him in gaining perspective on the importance of the natural world. Another educator as well, attributed his understanding and care for the natural world to his parents’ modelling of actions, despite not realizing they were environmental actions at the time. He shared the following statement:

We used to have a pool. The pool broke. And finally we have a garden that’s 24 feet wide, a circular garden that’s 24 ft wide. And I learned the expression “organic food” much later on, but I always ate organic food during the summer because my dad would have his own garden and it wouldn’t have any pesticides or anything. (T11-253)

This type of childhood recollection came from a number of the participants and seems to have played influential roles in their lives.

Influential Educational Experiences

Within the theme of influential experiences, education was another element to emerge. The educational experiences of the educators varied greatly. For example, three of the educators had Master’s degrees related to EE, whereas two of the educators had had formal instruction in EE through professional development programs, and only six of the interviewees had teaching certifications. However, the majority of the educators had taken a combination of courses or programs related to both teaching and environmental issues.

A number of the educators recalled influential experiences from elementary or
secondary school. For example, one educator stated, “I remember most clearly from my elementary school days, the trips that we took out to field sites and I realized that I learned more from those field sites …than just about anything else in school” (T1-209). Another participant explained that, “In Grade 7 and 8…we were in the hunting and trapping club and we learned how to skin beavers and set traps and do fun stuff… It was [in] downtown Toronto” (T4-349). In both of these cases the interviewees experienced forms of EE which made a lasting impact, and have influenced their understanding of what is possible in EE.

University courses and programs were mentioned by nine of the educators as having been beneficial in learning how to instruct EE. One educator shared how her Bachelor of Arts and Science degrees were a practical combination for preparing her to instruct in the field of EE:

My BA was in recreation and outdoor environmental studies. So from that, I took courses in interpretation, park management, and from the other side, I took ecology, fluvial geomorphology, physical landforms, so I had both sides. This is how things function, this is how things work and on the other side, here’s how you explain it to other people in English. (T4-369)

University courses were useful to many of the participants as it assisted them in gaining subject-specific knowledge that had been useful to incorporate when instructing EE. However a couple of the participants preferred to teach themselves content related to EE, by researching and reading books out of their own interest, rather than taking formal courses. One of these educators viewed his lack of formal training in EE as a benefit as he was stimulated by looking to the natural world to collect his information and then make further sense of it by “examining other people’s divinings by what is published” (T10-339).
While some of the participants felt they benefited from university courses and others did not, one participant had a unique perspective on the influence of her university program. The participant in question had taken a business administration degree that was about “making lots of money, to the expense of the environment” (T3-474). The impact on the environment was often not discussed, and she described this as the “null curriculum that was not taught to me, [but] was very apparent” (T3-474). This influenced her to persevere in learning more about environmental issues. She undertook a Master’s degree and found herself “understanding more and more, but at a feeling level not so much at a pure physical, biological level” (T3-746). She elaborated that the use of contemplation outdoors was very important to providing her with this new perspective. This participant is one of three educators who had undertaken alternative Master’s degrees related to EE and found them to be very influential.

In addition, many of the interviewees had also learned about EE in non-formal educational settings. Certification courses such as Project Wild and Project Wet (Wild BC, 2008) were mentioned by a number of the participants. One participant recalled workshops on EE to be particularly helpful, he stated that they “really opened my eyes into the potential and the systems for creating experiential educational models” (T1-249). Another educator had been influenced by her work experiences where she learnt about teaching EE on the job. She shared this account about working aboard a sailboat:

We actually lived on a ship. And all the resources had to be managed. All the waste had to be managed. And we actually weighed the waste and the compost. And we had so much water, and 30 people using it, so it was like the planet…. Plus we had a lot to do together, a lot of teamwork, a lot of human bonds were created. (T2-171)

This experience provided an opportunity to learn about EE in an atmosphere that emphasized the connection between humans, resources and the environment. In addition,
having fellow educators and students be an integral part of the experience, provided the participant with opportunities for connections to be formed between individuals. Many other interviewees also felt that sharing among colleagues and learners was a positive part of their educational experience.

The influential experiences in the educators’ lives involved many elements that can not be adequately investigated within the scope of the interviews, however the assortment of quotations in the two themes of childhood and educational experiences, provide a better understanding of what influenced these educators to teach EE. In the next section the educators’ perspectives on the third research question are shared.

*Question 3: What are Educators’ Views on Preparing Environmental Educators?*

The five main themes emerging from my interview questions regarding recommendations for improving the preparation educators receive for EE were: (a) Using existing school curricula and moving towards change, (b) making changes to teacher education, (c) sharing between environmental educators, (d) alternative options, and (e) certification of environmental educators. These themes bring together what the participants thought could be done to help prepare educators to become knowledgeable and able to teach EE.

*Teaching EE within the Existing Curriculum and Moving Towards Change*

The curricula used in schools as well as in non-formal settings catering to school groups, must conform to each province’s ministry guidelines. In some instances educators viewed their jurisdiction’s curriculum as having elements conducive to EE and for others it was not so evident where EE fit within the curriculum’s expectations. First, I consider
educators who viewed curricula to be either inclusive or flexible enough to accommodate EE. Then the barriers that participants mentioned as hampering their efforts to integrate EE are explored.

A number of participants regarded the curricula and educational setting in which they worked as inclusive of EE, and some mentioned that content in their curricula discussed EE. Specifically, one educator taught her grade nine geography class about the collapse of East Coast fisheries using the curriculum guidelines. In addition, an interviewee discussed how recent restructuring of his province’s curriculum resulted in environmental awareness being added to the objectives in a general manner. However, he stated, “People are still adjusting. Now what’s interesting is they have all the latitude. So if the educator has the values, we can talk about the environment” (T11-161). Another participant explained that it is a matter of being familiar with the requirements of the curriculum and then developing lessons that meet them and still integrate EE.

Many of the interviewees had specific ways of bringing EE to their work, and offered them as suggestions during the interviews. One participant would bring in EE by collecting data outdoors, taking field trips, and having students interact with one another on related issues. A number of other educators suggested writing letters regarding environmental issues, recycling and composting, and then moving towards more progressive activities such as starting a school yard garden and changing the cafeteria food. Whether or not an educator would choose to facilitate such activities is dependent on how they regard EE. It is very important that the educator see EE as part of the curriculum, and not an additional element that must be fit in. As one interviewee stated, “It’s not, ‘oh, I have to stop and take the kids outside, I’m going to waste time, I’m going to take time away from something.’ It’s actually time to help with something” (T4-245).
While there do appear to be some ways of integrating EE within various curricula, many of the educators felt that more widespread changes would be important in order to effect integration of EE within schools at a larger scale.

Many of the participants felt that there were barriers present to implementing EE within their teaching practices. Curricula are designed by government departments and as such reflect the knowledge and values desirable in future citizens. However, as one educator questioned, “Is it possible to change an education system without changing the society it exists within?” (T8-330). Many educators viewed a lack of encouragement for EE was felt when funds were allocated to other content areas such as literacy or numeracy to the exclusion of EE. Another barrier to implementing EE is the nature of school buildings. Many educators viewed them as non-conducive to EE. One participant’s statement articulates this view eloquently:

School is an institution, it has a building, and so the kids are in the building. I mean it starts there. And as a science teacher I can have a lab and show them parts and basic elements, but I can’t show them the big picture, they can’t be immersed in nature. (T11-129)

In response, another participant suggested having greener schools and involving the students in the process of organizing and assisting in projects that make the school more environmentally friendly, such as schools with green roofs, straw bales, solar and wind power (T9-483). Thus educators may play a role in helping students become involved in their school, as well as their community.

There was a sentiment among educators that the curriculum was so full that teachers were often left struggling to accommodate all of the material necessary. In respect to this one interviewee stated “There’s not enough flexibility in the way curriculum is allowed to be presented in the classroom, it’s geared towards exams and a
particular knowledge set, which tends to become a very fossilized kind of knowledge set”
(T10-161). This rigidity within curricula and school regulations limited a number of the
educators in being able to structure their teaching to include outdoor activities in
particular. This limitation is greater in certain settings than in others, as is evident in the
statement below explaining why one educator opted to teach at the elementary level:

I had much more control of timeframes, and agenda and schedule, so that I can
take advantage of particular weather conditions or particular time of year, to place
concentration where I felt it was needed given what was happening outdoors. And
that was a freedom I had, that I wouldn’t have had if I were in high school. (T10-
217)

In addition to finding time in the curricula or ways of integrating EE, many educators
must become adept at finding ways of raising funds or finding means of obtaining
resources to support EE. According to one participant “If you’re in the city, where there’s
nothing around it’s hard to get to the natural world. And then you need an extra effort,
and then you need budget to get on the bus, and then to get somewhere” (T2-98).
Therefore limited resources must be circumvented. Some educators mentioned doing this
by opting to stay close by and make use of the local schoolyard as a place for EE. As
another educator explained, “It’s really cheap to go in to the schoolyard … The way I
would teach environmental educators, teachers to teach EE, would be to go in their
backyard at the school….There’s so much you can do in your backyard” (T3-586).
Many educators agreed with this view and mentioned using the schoolyard for EE;
however a few educators also acknowledged the potential challenges of concrete
schoolyards and urban settings. Implementing EE within existing curricula may also
require changes at the level of teacher education; this theme is explored further in the next
section.
Making Changes to Teacher Education

This section considers the views of participants regarding how EE is or could be integrated within teacher education. The overarching trend among educators was to recommend various changes to teacher education. Nevertheless, there were several elements of current teacher education programs that participants felt were useful for furthering EE. One participant recalled her B. Ed. experience, in an Outdoor and Experiential Education program, as having given her the opportunity of “being exposed to a lot of different thoughts, a lot of different people’s opinions, even ones I didn’t necessarily agree with or never thought of before, never heard of before” (T8-209). In addition, another educator felt that the ability to engage learners was approached within existing teacher education. However these types of remarks regarding teacher education were limited and dwarfed by the number of suggestions regarding changes to be implemented within teacher education programs.

The interview participants provided a series of suggestions on how teacher education’s content, course structures and admissions policies could be modified to better prepare new teachers for EE. As one participant stated:

If EE were the thrust in teacher training. If that was at the very core of it. If teacher training was EE, then everything would flow out of that and people would be able to better prepare our society to be adapted. (T10-217)

A number of educators focused on the need for content to be presented in manners more conducive to EE, such as holistically. One interviewee thought that content would be best received if there was “integration across all subject area, curricula areas” and that future teachers would benefit from “tools and tricks, and tips for getting that knowledge transferred into engagement” (T5-533). Another goal of EE in teacher education is for
future teachers to see that EE transcends subject boundaries and can be incorporated everywhere. A participant’s vision of this situation is a B.Ed. program where “you came out of it, thinking of yourself as an environmental educator even if you came in thinking of yourself as an art teacher or a French teacher” (T8-294). In order to accomplish this most participants thought EE must be present in the teacher education program.

More than half of the participants suggested that a mandatory course on EE become part of all teacher education programs. However as discussed in the literature review chapter, many teacher education programs do not include EE components. Participants felt that teacher education programs, particularly one-year degrees, have a very limited amount of time. This concern led one educator to question the need to perhaps have teacher education programs that were longer in duration, perhaps with “one year of general teaching and one year of specialty” (T9-511). Another more radical change was proposed by another educator to have an admissions policy that preferentially selected future teachers that possessed a connection with the natural world, or basic environmental literacy. Therefore the future teacher would already have this connection and have the passion to be transmitting it to their students. While this alteration to admissions policies might be unlikely, another concept regarding student-teacher school placements might be more feasible.

Mentorship programs were suggested by four of the educators. One participant envisioned a mentorship program would have “teachers go along with professional outdoor education centres, maybe as a volunteer, or maybe they can be paid through professional development, to work with somebody who is delivering programs…like an apprenticeship of some sort” (T7-232). Advantages to the educator would be that it could “break down the barrier of being afraid of teaching something new” (T7-232) and would
provide them “the opportunity to view those skills and benefits and form their own belief about it” (T7-228). While there do seem to be potential benefits to having a mentorship program, the ability of teacher education programs to offer these types of experiences for all students might be challenging. However, the educators also discussed other ways other to share information between educators.

Sharing Between Environmental Educators

Sharing information and support between environmental educators was a theme that emerged from nine of the interviews. Many viewed sharing opportunities as essential to gain feedback, new perspectives and encouragement by knowing that other educators are also integrating EE into their teaching practice. As one participant explained:

Sharing…it’s just learning from each other and just being encouraged through a network of interpreters and environmental educators, I think that is the most important thing of all is just strengthening networks of people to work towards this common goal together and support each other. (T5-454)

The importance of having peers with which to share was another factor mentioned by participants, as working with fellow educators may be less threatening and a sense of trust may be developed. However, an interviewee noted that it can be challenging to give feedback to peers and that it requires “serious trust in a person” (T8-270) in order for it to be well received and useful for improving instruction of EE.

Another form of sharing among educators is to have role modeled examples of EE taking place. This was described by one participant who often found that teachers accompanying their class on one of her outdoor activities would comment on how they had learnt a new trick or approach to integrating EE by simply watching. This role-model approach does create a hierarchical situation where one educator is demonstrating their practice to another. One educator described an experience where the principal had given
her the informal title of “in-house environmental educator” which designated her as the person to whom the other teachers could ask for help with teaching EE. However, she found the teachers were “stubborn” in that they did not wish to seek out help (T3-722). Another participant stated almost the opposite, “The best part for me to learn more is from other teachers. Is to actually find out where other teachers are taking their kids for experiential education, for EE” (T6-144). Many of the educators felt they had gained useful information, encouragement and feedback, by sharing their EE experiences with their peers. In the next section the perspectives of the educators regarding alternate ways to prepare individuals to instruct EE are discussed.

Alternative Options

Alternatives to conventional teacher education included various forms of professional development such as additional qualifications courses, workshops, conferences, and retreats. Professional Development courses in faculties of education were viewed by participants as not practical for learners living outside the local area; therefore some of the educators suggested options for making these workshops or events more accessible. One interviewee suggested having on-line resources provided by a university that could “train you in methodologies or train you in knowledge and abilities that could then be brought back down to the ground level” (T1-344). Another participant stated that he “would like to see more local conferences for teachers, and that’s going to help get that ball rolling, in terms of inspiring teachers and getting new program ideas into the schools” (T7-204). In addition, an interviewee recommended EE be approached in a retreat setting, perhaps over the weekend or the course of a week. She stated: “You need to be in a group living, sharing some experiences together, doing the actual EE
hands-on. I think you need to be immersed in it” (T2-267).

For teachers working in formal school settings, one participant suggested having presentations regarding EE during staff meetings or as a workshop during a professional development day. She had some concerns that it “costs money and somebody has to pay for the time and materials” (T6-184). However, she entertained the possibility of having their teacher’s union fund these events. These alternative options provide means of bringing EE to educators outside of teacher education programs. Another form of preparation given consideration by the participants was EE certification programs.

Certification of Environmental Educators

One of the interview questions asked for participants’ opinions regarding an initiative by, the North American Association for Environmental Education, to implement a national EE certification program in the United States, which may possibly extend into Canada as well. In terms of responses, three of the educators considered a certification program to be advantageous, two of the educators saw it as having major drawbacks, one educator did not comment on this question and five of the participants had mixed views on this topic. Educators, particularly those in non-formal settings, voiced a need for having certification in the field of EE, while others were more hesitant about the implications of having a specific set of EE criteria defined.

The appeal of certification for a few of the participants was that it could provide an opportunity to better understand the history and evolution of EE as well as potentially improve communication between environmental educators. According to an interviewee, this would occur naturally by the certification program reinforcing “a common language or a common way of explaining things and then a better ability for people to
communicate amongst themselves” (T8-261). In addition, it was stated by several participants that certification could be useful to people outside the profession as they would have an easy way of knowing the base level of knowledge or abilities for any certified educator. One participant felt that certification might even provide a competitive advantage when seeking employment with a school board, as he envisioned schools would like to have “somebody on staff who has that certification so that they can design these programs and it’s recognized” (T7-200).

Another advantage of a certification program would be that it could provide a means of legitimizing the credentials of many outdoor educators working in non-formal settings and give them an opportunity to improve their skills and knowledge. As one interviewee explained:

I have a lot of friends who work at these places like Outward Bound and they don’t want to get a B.Ed., they don’t want to be a teacher and they don’t see that as relevant but they aren’t given a lot of credit for their experience. (T8-294)

Therefore this participant felt that having a certification program could provide recognition to non-formal educators without forcing them to seek it through the formal school system.

While some educators viewed EE certification as a positive advancement for the field others were concerned about possible negative implications. By having a set certification program some participants questioned whether it would devalue other forms of knowledge or experiences important in teaching EE. Several educators wondered how their years of experience would be accounted for. In addition there were questions regarding which organization would be relegated the task of overseeing the certification program in Canada. There were other concerns regarding the feasibility of implementing EE certification and making it accessible to educators living in more remote locations. In
one interviewee’s opinion, the most challenging element to starting up a certification program would be deciding on the content to be included, she stated, “Trying to get a group of people to agree with that would be hard” (T8-266). As well there may be some resistance from educators already teaching EE regarding obtaining certification, as one participant stated, “You don’t need to go through that many hoops to still be considered an environmental educator if you’re aware of what’s around you and can engage people” (T4-425). Therefore, diverse views were shared by the educators, both in favour and against, the implementation of an EE certification program.

The participants’ views regarding how to better prepare others for teaching EE extended over different themes and provided a diversity of ideas. While there was some focus on how teachers could be prepared to integrate EE within the current educational context, many of the suggestions involved making changes, whether to curricula, teacher education or alternate modes of preparation for teaching EE.

Summary

In this chapter, findings from the e-survey and interviews with environmental educators were presented. These included the diverse perspectives and suggestions of the educators regarding teaching EE. In addition, the common themes that emerged from the interviews are explained. In the following chapter, analysis and discussion, I consider the relationships between the themes and the existing literature in order to draw conclusions regarding the significance of this study.
CHAPTER 5

ANALYSIS AND DISCUSSION

This chapter is divided into two major sections, analysis and discussion. In the analysis section I compare the educators’ perspectives on selected themes with related research in the literature. The themes selected for further analysis are separated by the three research questions, as in the results chapter. The first section focuses on three themes regarding the knowledge and abilities important to environmental educators. The second section analyzes the two themes, based on the research question on influential experiences of the educators. The third section analyzes three themes stemming from the research question on ways of preparing environmental educators. The second half of the chapter, the discussion, is divided into four sections in which the findings are examined, the implications and limitations of the study are acknowledged, and a conclusion is presented.

Analysis

The analysis was conducted by selecting themes from the interviews with the 11 environmental educator participants and comparing them with the published literature on EE. The themes that were selected from the results section to be further analyzed were those that were particularly rich and offered perspectives that provided interesting, diverse or novel content that would benefit from comparison with the literature. The themes were analyzed by looking for trends among the participants’ views and then comparing the educators’ perspectives with those found in the literature in order to see if they paralleled one another.
Knowledge and Abilities Important to Environmental Educators

Many of the educators in the survey and all of the interview participants held the view that having knowledge of the importance of first-hand experiences in the natural world, and having the ability to engage learners, were of great importance when instructing EE. These perspectives are in agreement with two of David Orr’s (1992) foundations for ecological literacy. These foundations are, “The way education occurs is as important as its content” and “Experience in the natural world is…an essential part of understanding the environment” (p. 91). The importance of the educator possessing values or beliefs that reflect a connection with the natural world was also mentioned by a number of educators, and as one participant stated, “I think something is missing there, and it’s feeling” (T3-426). The themes selected from the knowledge and abilities section of the results chapter that are analyzed below are: (a) environmental awareness, (b) connection with the environment, and (c) environmental action.

Environmental Awareness

Awareness about the environment was considered to be of primary importance to the interviewees. As one participant stated, “It comes down to an ethic of just being aware that there are other living things that merit being treated gently and merit consideration” (T9-39). According to Krathwohl, Bloom, and Masia (1964) awareness occurs when the learner is “conscious of something [in this case their environment]….it does not necessarily imply attention…. [and] the individual may not be able to verbalize the aspects of the stimulus which cause the awareness” (p. 176-177). Interview participants viewed the ability to create awareness as being dependent upon providing appropriate and
adequate environmental information in order to “ignite curiosity” (T9-243) among learners.

The importance of choosing content that is developmentally appropriate was cited by a number of the participants, as well as by other researchers. One participant mentioned David Sobel’s (1996) work on *ecophobia*, defined as a “fear of ecological problems and the natural world” (p. 5). Sobel (2008) states the necessity to approach environmental issues, such as climate change, “from a perspective that maximizes hope” (p. 141) in order to minimize the risk of breeding “ennui and helplessness” (p. 146) due to the overwhelming nature of environmental problems. Sobel also offered the recommendation that a more appropriate approach would be to provide nature experiences to the youngest generations in EE programs, a view echoed by many of the interview participants. Hutchison (1998) argues that there is a time-critical stage of development between the ages of about six and twelve when the child comes to co-construct a functional cosmology of the universe – a “working theory” of the world” (p. 83). A similar view was espoused by an interviewee, who stated:

> If we want environmental education to occur in the schools, what is a Kindergarten [student] ready to learn, what is a Grade 5 ready to learn and to really look at the literature, look at psychology and come up with a strategic plan so environmental stuff occurs right through all grades and it makes sense. It’s like Grade 5, a time when kids are most, ready to learn about the outdoors, what’s in science? Organ studies [in the Ontario curriculum]…That makes no sense to me. Is a kid intrigued about organs at that age? I don’t think so. (T9-555)

This participant’s statement does argue the need for age-appropriate EE and closely parallels Sobel’s (2004) thought that, “Schooling should start out the back door with a focus on the neighbourhood rather than the solar system in the early grades” (p. 8). The importance and need for outdoor experiences to be geared towards younger learners can
also be analyzed by considering adults’ recollections of their childhood experiences outdoors.

Cobb’s (1977) inquiries into children’s interactions with nature suggest that vivid recollections of childhood experiences represent a:

A momentary sense of discontinuity–an awareness of his [sic] unique separateness and identity–and a revelatory sense of continuity–an immersion of his whole organism in the outer world of forms, colors, and motions in unparticularized time and space…. Inner and outer worlds are sensed as one in these moments of form-creating expansion and self-consciousness (p. 88).

Therefore, both the participants and researchers in the field see the value in assessing EE content so that it may be developmentally and age-appropriate, in order to have a lasting positive influence on learners.

*Connection with the Environment*

Having a connection with nature and the environment during childhood was viewed by participants as very important and associated with their development of concern for the environment and partaking in environmental actions. One quote that exemplifies this stated, “You can go through the motions and not engage the learners. But if you give them first-hand experience, and you engage them, that’s when you create people who actually care and will make a difference” (T6-56). In the literature suggestions can be found on how to enhance learners’ engagement in EE. Littledyke (2008) proposes using science education that integrates both effective and affective components, requiring a shift towards science education that reflects a constructive post-modern worldview that is more appropriate for EE. Examples of such education would include scientific methods to assist students in interpreting and understanding the world,
all the while encouraging “a sense of beauty, respect, reverence and awe in approaches to the environment” (p. 5).

Despite the appeal of using a cause-effect relationship to describe learners’ progression from having environmental awareness inspire a sense of connection, resulting in action, it is not necessarily the case. Rather, as Sobel (2008) states, “It’s more like a sense of agency and control leads to knowledge of issues and action strategies, which lead to an intention to act, which under the right precipitating conditions, leads to environmental behaviour” (p. 145). He argues that greater focus should be placed on developing behaviours that address environmental issues, and having schools be models of sustainability, as opposed to focusing merely on the dissemination of knowledge. In order to give students an opportunity to understand how actions are undertaken, action competence can be integrated within EE.

*Environmental Action*

All of the interview participants viewed teaching about environmentally responsible actions as part of EE’s mandate. Jensen and Schnack (2006), state that, “One of the overall objectives of environmental education is to build up students’ abilities to act—their action competence—with reference to environmental concerns” (p. 471). Examples were given of individual actions that could be accomplished by students. Jensen and Schnack also discussed the need to have students act on the larger environmental issues directly, which would occur when a student “decides to do something…whether it is a question of a change in behaviour or an attempt to influence the conditions of life” (p. 476). A similar view was held by one participant:

Because for the first years, 4, 5, 6, it’s more taking care and teaching the different actions. Show them how to recycle; show them how to play in nature and stuff
like that. As it goes on you can understand problems and the solutions….Finally tell them the solutions like the Montreal Protocol and the fact that we can choose products that don’t have CFC’s. (T11-37; T11-49)

In this quote it appears that the interviewee would be in agreement with Jensen and Schnack in that teachers should be familiarizing their students with environmental actions.

The majority of participants agreed that teachers could have a positive influence by role modeling environmental behaviours. While role modeling by the educator can encourage students to emulate their environmental habits, this technique does not encourage learners to truly think about their actions. Therefore, this method may have limited impact on future actions, especially if the student is in a new context outside of the educational setting in which they had become habituated to the actions. As Jensen and Schnack (2006) explain, role modeling focuses on behaviour modification, rather than the thought and decision processes required before taking new actions. Educators could encourage action more directly by offering students experiences in which to “gain knowledge, form positive attitudes about the environment, and practice action skills” (Chalwa & Cushing, 2007, p. 441).

A number of the interviewees stated the need for EE to consider multiple perspectives of an issue and avoid creating a dichotomous view of actions as being either good or bad for the environment. One participant stated that promoting simplistic views about minimizing footprints by not driving and eating locally was “hypocrisy, that’s not really environmental education. It doesn’t take into consideration cultural differences, or poverty, or limited access” (T4-45). The importance of providing a range of views, as well as opportunities for learners to develop and articulate their own perspectives emerged in more than half of the interviews. For example one educator stated, “You need to have teachers who are open and able to …create safe space for kids to talk about all
their different viewpoints” (T7-335). In this regard, Disinger (2005), stated the importance recognizing that EE “does not mean teaching for (i.e., unequivocally endorsing) any particular set of values, but it does mean teaching about all of the values” (p. 154). Disinger also quoted an excerpt from Hug (1977, p. 73) which articulated the necessity for environmental educators to “be familiar with all sides, stand firm for each advocate’s right to be heard, and provide a rational stage for informed debate.” A very similar statement was made by a participant who explained:

“I think that it’s important for them to hear both sides of an issue and for me to not try and guide them into thinking ‘clear cutting is bad’...[I] give them the information and have them come up with their own ideas. (T6-52)

Peer-exchange opportunities can be another means of gaining an understanding of environmental actions. Hutchison (1998) hypothesized that co-construction with both peers and adults of a functional and ecologically sensitive view of the world can prepare children for a more substantive and critical exploration of environmental challenges latter in life. Interestingly, some of the most important adults in children’s lives, their parents, were mentioned by very few of the interview respondents. Specifically, only one participant articulated the importance of gaining parents’ support for teaching EE. However, in Chalwa and Cushing’s (2007) study parental interest was an integral element to assist and support the students as they participated in community projects. The importance of having the opportunity to construct an ecological view to provide the basis for opting to engage in environmental actions in the future, was shared by the educators, and found within the literature.
Influential Experiences of the Educators

Many educators had experienced particular events that had influenced their connection to the natural world as well as their desire and commitment to teaching EE. The two related themes analyzed below are childhood experiences, particularly in the outdoors, and educational experiences. The views of the interview participants regarding influential experiences is compared with the numerous studies on similar topics, specifically significant life experiences.

Influential Childhood Experiences in the Outdoors

Throughout the interviews, a number of participants mentioned the significance of having had outdoor experiences during their childhood years. The positive influence of these experiences on educators is reflected in their beliefs regarding the importance of providing outdoor experiences to their students. However, the educators had differing perspectives regarding what the important elements were within outdoor EE experiences.

As one participant stated, “In nature an educator doesn’t need to talk that much because it goes to the heart” (T11-141). While this view may have merit in emphasizing the importance of feelings for the environment, it is also understating the role of the educator in facilitating EE outdoors. While examples exist, such as in Native cultures, where sustained exposure to the natural world can be the sole source of EE, in short-term educational programs the role of the educator is essential. Environmental educators play an important role in ensuring that learners make the most of their experience for example by preparing for the activity or lesson, asking questions at an appropriate level and time, as well as in assisting learners in frontloading and debriefing an outdoor EE experience. The importance of having role models who set an example of noticing nature in an
appreciative way is associated with developing one’s own appreciation for nature (Chalwa, 2007). There are many people who have outdoor experiences as children yet the impact of the experience on future environmental commitment may be most dependent on “who you go fishing with... or who you you’re talking to when you’re walking” (Chalwa, 1999, p. 20).

The importance of demonstrating for learners an appreciation for elements in the environment, regardless of their utilitarian worth, was discussed by a few of the participants. As one teacher explained, with reference to the amphibians and insects his class would collect, “There has to be an ethic of caring, of treating these things as though they’re valuable in their own right, intrinsically valuable, rather than valuable because of what we get out of them” (T10-89). While this participant is attempting to instill an ethic of caring, he is also allowing students to hold mastery over other creatures by capturing and releasing them. While these hands-on experiences may be positive in assisting students to become aware of their environment, it raises questions regarding how we as humans can relate to other species and elements in our environment.

Bonnett (2007) claimed that we can not attain a holistic perspective if environmental concerns are founded on “loving only what we believe meets our needs and desires—which...is an expression of metaphysical mastery” (p. 712). Therefore a more holistic ethic, that allows for the valuation of all species and elements would be more appropriate for EE. As one interviewee stated, “If you never played outside, if you never walk in a forest, swim in a nice place, calm place; How can you want to protect it? You don’t have that sensitive link that attaches you to the rest of the planet” (T2-70).

However at this time, many children, particularly those living in middle-class suburbs, are limited to experiencing the outdoor environment though car windows or by playing on
manicured yards and sports fields. Malone’s (2007) research questions how growing up in a “bubble-wrapped generation” will impact these children’s environmental learning, sense of community and stewardship. With increasingly prevalent suburban childhoods, outdoor education, combined with EE, can play a significant role in exposing students to more natural settings and developing their sense of place.

The emergence of place-based education has been a response to counter the sense of alienation from the earth that schools often promote by teaching standardized curriculum without making the content relevant to the students’ community and physical environment. Sobel (2004) defines place-based education as:

The process of using the local community and environment as a starting point to teach concepts…. Emphasizing hands-on, real-world learning experiences, this approach to education increases academic achievement helps students develop stronger ties to their community, enhances students’ appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens. (p. 7)

A number of the participants shared their positive views regarding place-based education. For one educator, she saw place-based education fitting well within elementary schools as “there’s a lot of routine in there and sense of place has a lot to do with going back to the same place….There’s a lot that could be done with pretty small green space like outside their school yard” (T6-129). Another educator articulated his place-based approach to EE by stating, “I definitely maintain a point of going directly to the places that we’re teaching about” (T5-43). The influence of outdoor experiences on the educators’ teaching practices was important; however there was another facet of significant experiences, education.
Beliefs regarding teaching are influenced significantly by formative educational experiences (Taylor & Caldarelli, 2004). Many individuals enter teacher education programs already possessing well-established views on the profession as a result of having spent a better portion of their lives as students within classroom settings. In the present study, many of the participants shared important educational experiences, however there were surprisingly few comments regarding positive EE related formative experiences occurring in traditional indoor classrooms. As one educator stated, “The great irony is that in school, we teach kids about the rest of the world within the confines of four walls as if somehow we can relate…it’s a bit sad really” (T9-83). However, there are a growing number of examples within the literature of schools that are designing their buildings to be more environmentally friendly and connected to the natural landscape. For example, in Britain designs were drafted to be used as templates in the building of future high schools incorporating ideas of sustainability (Power, 2003). One feature on the exemplar was a “series of external learning/teaching gardens incorporating existing trees and distinctive features….These external spaces are key to establishing and promoting enduring bonds between the school and the locality” (p. 277). In addition, when designing new buildings, schools should consider factors that can impact students’ attitudes and learning, such as having: (a) natural lighting, (b) good acoustics, (c) thermal comfort, (d) all the components for daily use, including kitchenette, and (e) transition spaces between the inside and outside environments such as a porch (Jacobs & Sargo, 2005).

While school building might now be on their way towards change, the participants themselves did not have recollections of their indoor elementary or high school
educations contributing to their interest in EE. However, more of the educators did feel their university experiences, in arts, science, recreation or education degrees, had influenced their views and abilities with regards to EE. One educator in particular described being significantly influenced by completing a Master’s degree, related to the environment that was based entirely on principles of experiential learning. She recalled:

> We traveled on a school bus and we camped out every night. You’re living in this community, so you have to deal with these people, yet every experience we did we talked about it beforehand and we talked about it after and it really made me look at my impact on the planet. I learned things that I’d never even thought about before. (T6-116)

Despite the lack of influential indoor educational experiences for some of the interviewees, all the participants viewed potential ways of using formal teacher education to help prepare other educators to instruct EE.

**Preparing Environmental Educators**

Formal educational experiences, and particularly teacher education programs, have the potential to integrate EE and assist in preparing educators to expand their teaching practices and include the environmental domain. Powers (2004) stated, “The power of the pre-service curriculum is its multiplier effect” (p. 3). The themes analyzed with regards to this third research question are: (a) making changes to teacher education, particularly having compulsory EE in teacher education, (b) sharing between environmental educators, specifically mentorship experiences, and (c) certification of environmental educators.
Teacher Education Programs: Necessary Changes

The need for a change to teacher education programs, specifically by having EE become mandatory within all such programs, was advocated by the majority of participants. This parallels the view that future educators need to be able to deal with “complex real world problems [and that] requires a significant shift in school curriculums” (Paige, Lloyd & Chartres, 2008, p. 23). However, there were mixed views among the educators regarding the way EE content should be included in teacher education programs. In this section I consider the perspectives of the interview participants and compare them with literature discussing EE’s place within teacher education programs.

Many jurisdictions have mandated that EE be incorporated in teacher education, for example Wilke (1985) shared how the state of Wisconsin did so more than twenty years ago. In Ontario, a recent report made a recommendation to have EE become a teachable subject, and it appears that the Ministry of Education may adopt this proposal in the near future (Ontario Ministry of Education, 2007a). One recommendation stated that all student teachers should be given training as well as the science behind environmental issues as EE “is a content area and can be taught” (Ontario Ministry of Education, 2007a, p. 10). This raises an important question regarding how EE could be integrated within teacher education, a question which was answered by some of the participants and has also been investigated in previous literature.

The interviewees had different views on how EE could be integrated. One quote exemplifies how an educator was divided on this issue, “I would say ideally, you do both. You have environment in other subject areas but you also have people who are specially
trained and you have a separate subject called environmental studies, environmental science” (T9-547). This format of integrating EE would be allow for specialization in EE for interested educators, while still ensuring that all future teachers had been exposed to some minimum of EE content. In addition, the participant referred to EE as either environmental studies and environmental science, however these can be very different courses depending on whether governing policies restrict the lens with which the environment may be viewed. For example, if EE is provided in the form of a science course, the felt-based knowledge elements may be omitted, and if EE were presented as environmental studies, the scientific understanding behind environmental issues might not be fully covered. It appears that having interdisciplinary courses could offer a solution, and this avenue has already been explored in the literature.

Bonnett (2007) considered that conceiving of EE as a holistic and cross-disciplinary, would misleadingly imply the existence of “some single environmental grand narrative to be conveyed. Instead, it should be developed from within the differing perspectives that existing school disciplines have to offer” (p. 717). Some examples of teacher education programs integrating EE within the disciplines can be found in the literature. Powers (2004) investigated different options for integrating EE within American teacher education programs and found that faculty members strongly agreed with the need for pre-service teachers to be prepared to infuse EE in their curriculum. Powers suggested that in order to meet this objective, (a) more faculty development be offered, (b) greater emphasis be placed on EE as a vehicle for teaching all subjects, and (c) teacher candidates be given more practice in classrooms with EE.

Paige, Lloyd and Chartres (2008) considered the use of transdisciplinary courses in teacher education programs which would “integrate science, mathematics and
environmental aspects of society” (p. 19). They also discussed the implementation of such a course, and the placement of emphasis on “the need to be ‘disciplinary’ before ‘transdisciplinary’ in the three courses by focusing upon discipline specific aspects and identifying epistemological commitments for each of the disciplines” (p. 27-28). One interviewee considered the matter on a similar level, stating:

> There is a need I think, for cross-disciplinary, not just in professional domains, but academic ones as well, reaching right down to elementary school. We need to be looking at the principle even in something like art, or even religion….There is this need for examination outside the boundaries to make sure that the principles being applied in history or geography, or mathematics, or literature, or religion, are consistent with the principles that are being derived elsewhere. (T10-53)

Because universities are divided into faculties working from within their respective frameworks and theoretical underpinnings, offering courses that cross these boundaries can prove challenging. However, Faculties of Education may be excellent places to attempt these types of courses, as diverse subjects are already approached during the instruction of teaching methodologies.

Using a method that integrates different disciplines relies heavily on collaboration between staff and students. While this integration may be an initial challenge, benefits would include an opportunity for collaborative learning and professional development (Van Petegem, Blieck, & Imbrecht, 2005). The need for collaboration is also necessary at the level of the educator. As one participant stated with regard to the role of the teacher, “The curriculum’s there and it’s mandated by the government, ‘You shall teach this’. How you teach it, I think, is up to you, and what makes all of us a little bit different” (T6-52). Teachers, as professionals with flexibility to teach in a manner of their choice, could greatly benefit from a culture of collaboration, where the exchange of ideas and experiences is facilitated.
In reference to moving towards sustainable educational changes, Hutchison (1998) stated, “the more holistic of these educational reform initiatives stress the importance of collegiality and collaboration throughout the change process” (p. 155). This quotation implies that changes to schools, whether by greening infrastructure, or by having ideological and methodological shifts towards integrating EE within education, could be facilitated by sharing knowledge between educators, whether through mentorship experiences or peer interactions. Four educators in the present study recommended mentorship programs as a valuable tool, where educators could share EE knowledge and abilities through experiences working together. One participant stated this to be a “situation where people could help mentor teachers through encouraging….That might be really helpful” (T5-486). Although it is common practice to have required practicum or placements within teacher education programs, mentorship in the EE context has only been considered by a few researchers. For example, Dubel and Sobel (2008) describe a graduate teacher certification program that offers “real-world learning internships” (p. 326), where future teachers have opportunities for working with either a “school science teacher, acting as a place-based educator for a whole elementary school …teaching with environmental or agricultural education centres… or designing professional development workshops for teachers” (p. 327).

In the UK, Corney and Reid (2007) investigated the sources of learning of teacher candidates regarding preparation for the related discipline of Education for Sustainable Development (ESD). They found that many of the student teachers were stimulated by a number of sources during both school placement and university courses. In school-based
learning settings, the participants most often mentioned the importance of “discussion between student teacher and mentor about approaches to ESD in general” (p. 41), followed by “joint planning of student teachers’ lessons” and “debriefing of student teacher teaching with mentor” (p. 42). However, in Corney and Reid’s experiences these forms of collaborative teaching between mentors and interns were often limited in the field of ESD.

With respect to EE it is probable that a similar situation may be occurring as many of the interview participants did not recall having mentorship experiences related to EE, and only one participant recalled having a “mentor in the environmental education world” (T3-202) which facilitated her gaining an understanding of such issues as green purchasing, social responsibility, and community outreach. The desire for mentors in this field may be a marker that EE is simply not pervasive in teacher education. Future educators may be noticing this void, and desiring to remedy the situation by gaining instruction on how to integrate EE in their teaching, in this case, in the form of mentorships.

Another participant voiced a concern regarding implementing a high school EE course that requires that different subjects be merged together. She stated, “I don’t even know if could do it without some serious mentorship. I just don’t feel like I’ve ever had that experience of how to connect those credits together and I think I’ve had probably more experience than a lot of teachers have” (T8-161). Gabriel (1996), makes a point on this regard, stating that, “Incoming teachers who have seen their peers successfully integrating EE material are more likely to find a way to adapt their own teaching” (p. 16).

The use of mentoring may prove very beneficial, and alternative mentoring formats that are less entrenched in hierarchical power structures may be most appropriate
for EE preparation. Mullen (2005) views mentoring as “a holistic form of teaching and learning” (p. 106) that can enable the development of learning partnerships between mentor and mentee. Examples from Mullen of some alternative mentorship formats include, (a) peer coaching between two experienced educators, (b) mentoring mosaics, where multiple mentors offer numerous resources and ways of learning, and (c) mentoring communities, where learning and sharing are an enlivening process for all who choose to become members in the community. While mentoring may be an important element for preparing educators to instruct EE, mentoring experiences and other alternative means of professional development for EE are not widespread. Concerns over the quality of preparation that educators receive for instructing EE and the lack of opportunities to learn about EE in formal settings, have led to initiatives to certify environmental educators.

EE and Certification

The participants shared their thoughts regarding alternative options for preparing environmental educators, including the NAAEE’s professional certification and accreditation program being implemented within the United States (NAAEE, 2008a). In attempts to “offer a set of recommendations about the basic understandings and abilities educators need in order to provide high-quality EE” (Simmons, 2005, p. 174), the NAAEE published the Guidelines for the Initial Preparation of Environmental Educators (NAAEE, 2004). Subsequently, certain American states adopted these guidelines as the basis for programs to assess educator competency and certify individuals as environmental educators. The rationale behind the programs was to “improve the practice of environmental education and elevate the profession” (Simmons, p. 175, 177). Three
states, Kentucky, Texas and Utah are offering pilot certification programs, and as more programs become accredited with the NAAEE the aim is to expand EE certification across other states and provinces (NAAEE, 2008b). In addition the NAAEE is working towards becoming accredited by the National Council for Accreditation of Teacher Education, in order to have EE become an integral part of teacher preparation programs in the United States (Baust, 2007).

Participants’ views were split on this issue; some felt a certification program would provide advantages while others had serious concerns about the value of a similar program in Canada. Interestingly, three of the educators who favoured certification had less experience in the field (5 to 10 years) and were working within non-formal settings. A common theme was the need to have their EE knowledge, abilities and skills recognized. Having a certification program would provide recognition to these educators without having to seek professional designation as a teacher. Brown (2007) stated that environmental educators may be viewed as more integral parts of educational settings if others, such as employers and administrators in both the formal and non-formal sectors had a better understanding of EE and its educators. Misconceptions about EE included having a radical agenda that would be inappropriate for a school setting, or conversely, in the non-formal setting, EE being of lesser importance than issues requiring urgent action such as species at risk in a threatened habitat (Brown). Therefore, a professional certification and accreditation program may provide the infrastructure of support to assist environmental educators in justifying their role in both formal and non-formal educational settings.

While some educators were very much in favour of implementing a certification program in Canada, others voiced concern over possible negative implications. A
certification program would teach knowledge and abilities and could even attempt to
instil a connection between the educator and the natural world. However, a participant felt
that, “Because it’s such a feeling subject… what we need is more people to be…feeling
that we’re all connected… [but] you can’t certify that” (T3-554). This raises the issue of
whether a certification program may neglect affective elements and favour knowledge
and abilities that may be more easily assessed and certified through a program. Another
educator questioned whether the certification program would truly target those who are
not yet knowledgeable in EE and give them an opportunity to learn, or whether it would
end up being a place for “people who already are good at it to come and get formal
certification” (T8-306). This statement implies that the role of certification and its
different objectives, such as giving educators a greater understanding and ability to teach
EE, or providing a professional title, have not yet been clearly defined for the participants.

The lack of clarity regarding what constitutes an EE professional was addressed
by MacDonald (1997), who questioned whether environmental educators could become
professionals without betraying the deeper meanings of EE. For example, a professional
body of environmental educators might be at odds with having to: (a) “establish a unified
body of general and systematized knowledge,” (b) require a long period of university-
based specialized training, with certification and licensing,” (c) “clarify the unique social
service, particularly its intellectual practice,” and (d) “control standards of entrance and
exclusion, enforce a code of ethics, and verify the necessary level of autonomy”
(MacDonald, p. 79–80). In addition, in order “to professionalize environmental education,
clear enforceable boundaries would have to be established around the esoteric
knowledge” that is part of EE’s domain (MacDonald, p. 70). Therefore, it should also be
considered whether the formation of explicit boundaries around EE may be
counterproductive to establishing a holistic perspective of the environment from which to teach learners knowledge from multiple domains.

There are other alternative options that may be appropriate to better prepare educators for EE. Respondents mentioned options such as professional development opportunities though workshops, conferences or retreats. For approximately half the participants, these options appeared favourable as there were many concerns regarding having to meet specific guidelines for certification, and having pertinent prior work experience in other fields recognized. One respondent liked the idea of certification and saw it as being beneficial to learn more, particularly about teaching methods. However, he stated, “I think if I’d gone through a teaching course or environmental course, I wouldn’t necessarily have been given the specific knowledge that I needed to fulfill my requirements for this position” (T1-301).

The majority of participants viewed certification as having both positive benefits as well as major limitations, and therefore it will be interesting to note the progress of the NAAEE certification program and investigate implications the expansion of this program or similar certification may have on environmental educators in Canada.

The participants of the interviews shared with me their views on working and learning within the EE field. By considering their diverse perspectives, I had the opportunity to consider the issues regarding knowledge, abilities and educator preparation from different angles, and consider possible implications of using these views to inform further work in the field of EE.
Discussion

This section of the chapter focuses on bringing together the results and analysis for discussion, highlighting the views most widely held by participants as well as elements that contribute to the field of research on EE. This section is divided into four sections in which I (a) examine the findings, (b) explore the implications of the study, (c) discuss the limitations of the study and suggest questions for further inquiry, and (d) present a conclusion.

Discussion of the Findings

The perspectives of educators on important knowledge and abilities have many similarities with the knowledge and abilities they desire to impart to their learners. The priorities for the participants in this study appear to be centered on several themes: (a) having an awareness of one’s environment, (b) developing a sense of connection or relationship with the environment, particularly through outdoor experiences, and (c) being willing and capable to take action, not only by teaching students but by demonstrating environmental behaviours as well. The participants whom I interviewed seemed to be passionate about their work, and appeared committed to doing their part to make their actions, and those of others, environmentally responsible. These individuals are currently part of a subset of educators who are actively engaged in EE, despite some not having had extensive EE present in their educational experiences. However, if EE becomes a formal part of the curriculum or public interest increases in the future, a broader range of educators may consider integrating EE in their practices. Assuming that not all teachers and educators will have had extensive previous knowledge or experience related to the environment, there should be means available to assist in preparing them to instruct EE.
This could be done using various methods, such as having EE become part of teacher education programs, as well as though mentorship experiences, and/or certification programs.

The purpose of educator preparation would be to assist in providing EE that surpasses merely teaching subject content but also includes some of the affective elements such as values and feelings that were viewed as important by many of the participants and in the literature. Having educators, who are knowledgeable and able to reflect on their practices, may permit second or third order learning on the part of the educators.

The educators’ views in both the e-survey and the interviews were reflective of the importance of higher order learning as they selected knowledge and ability elements that would require reflection on different approaches and elements found in EE rather than merely improving the efficiency or effectiveness of current instruction. As noted in the results section, I had designated six of the top ten elements ranked by e-survey participants as being characteristic of third order learning. These included knowledge of place (i.e., experience of environment through local cultural history, geography, and ecology), as well as the ability to teach EE from a holistic perspective. Noting the diversity of content areas and pedagogical abilities considered important by the educators was very promising, as within EE there are many elements, not just educational practices that require new perspectives. In the literature there is reference to the need for new ways of thinking about the environment if environmental problems are to be mediated, at both the political as well as personal level, (Orr, 1992). Current anthropocentric (human-centered), worldviews and their corresponding actions on the planet have resulted in our present environmental situation, and a shift towards more environmentally considerate
ethics will be important for positive change. In order for widespread environmental actions to occur changes are required at various levels, including the political and economic realms. However, at a smaller scale, by having individual educators integrate EE within their teaching practices, students may have an opportunity to learn and think about their environment and future.

The educators had a multitude of suggestions regarding how to better prepare future educators to instruct EE. These included ideas about where and how this may best occur. While teacher education programs may appear to be a natural place to integrate EE, it is not being taught in many teacher education programs across Canada, and has been left to the discretion of the individual institutions and faculty members. While all participants were in favour of including EE in teacher education, there were hesitations regarding adding it as an additional subject. Teacher education programs have a limited amount of time in which to prepare educators and additional content may not be received favourably. Therefore, having teacher education programs that would integrate EE within the other subject areas, as well as offer EE as a separate elective course, should be considered.

This importance of integrating EE within other subject areas is to ensure that complex and interrelated nature of EE can be explored from within the perspectives of its different components, for example, considering environmental issues in biology as well as in economics. However, a course that introduces educators to EE as a separate subject may assist in providing an initial basis of understanding of the nature of EE. Perhaps in the future, teacher education programs could also attempt to offer specializations in EE where more time could be devoted to developing awareness, connection, decision making abilities, and action competence.
Another element that many of the educators viewed as important was having mentors or peers with which to share knowledge and experiences. Having opportunities to discuss, observe or experience EE with others was viewed very positively by many of the participants. Suggestions included having accessible conferences or the development of networks for communication. The importance of sharing between educators, including those already teaching and those preparing to do so, should be taken into consideration when developing programs. The perspectives of educators regarding the professional certification program developed by the NAAEE for environmental educators were quite diverse. Therefore, before considering implementation of a similar program in Canada there should be further investigation of possible outcomes. Benefits might include having a set of standards for environmental educators that would assist in developing a legitimate place for EE within the educational system. While disadvantages might include the challenges of creating a professional certification program that is consistent with the objectives of EE, and attempting to certify the various forms of knowledge and experiences that environmental educators should possess.

The interview participants all demonstrated a passion for their work. While barriers to integrating EE were mentioned, the educators seemed committed to environmental issues, and were able to bring EE to their teaching practices. As Corney and Reid (2007) stated, “Teachers’ learning of any particular aspect of ESD may draw on a variety of sources, and this is likely to be influenced by their preconceptions about ESD and education, as well as their experiences on their teacher education course” (p. 49). This statement serves as a reminder that preparation for becoming an environmental educator stems from a range of both personal and professional life experiences.
Implications of the Study

This study provided an opportunity for educators to share their perspectives and reflect on their work, while allowing others an opportunity to gain an understanding of what is of importance for teaching EE and how these educators gained the knowledge, ability and desire to teach EE. As the researcher and a continuously aspiring environmental educator, having the opportunity to investigate what people already working in the field recognize to be important has provided me with many ideas as I prepare for my own teaching practice. Examples of my new understanding include a greater appreciation for the role outdoor education plays in EE, particularly with respect to creating an initial sense of awareness and connection to the natural world, prior to exploring environmental problems. In addition, I have learnt about the importance of having opportunities to share ideas and knowledge with colleagues, peers, or mentors. The concept of mentoring was particularly interesting as it would allow for educators to share in teaching experiences and practice-based knowledge, providing new environmental educators with collaborative partnerships to assist in their work.

I have gained from this study what I had originally sought, a strong theoretical understanding of the field of EE and answers to some of my questions regarding how educators prepare for teaching in this field. I have had the opportunity to communicate and meet with numerous environmental educators and document their views from the field, which I then understood within the greater context of the research literature. Throughout this process I have gained a greater respect for those teaching in this field and feel encouraged to continue on this path. I have given myself a foundation in the theory of EE and learnt from the perspectives of practicing environmental educators. I am now
more fully aware of the obstacles to instructing EE, and more importantly, how others have circumvented them. I am confident and reassured, as I continue my educational journey in a teacher education program, that I will be able to integrate EE within my future teaching practice.

The participants in the study may have also been impacted by taking part in the research, as a number of interviewees stated that they found the questions had given them an opportunity to step back and reflect on their work and their motivation for teaching EE. On a larger scale, this research may give individuals interested in EE a window through which to view the perspectives of others. While the participants worked in diverse educational settings, they shared many thoughts in common and this study provides an opportunity to convey these views.

**Limitations and Further Research**

This study was intended to provide information at two levels. The e-survey gathered the views of a large number of environmental educators (n=148), however, their perspectives could not be explored in depth due to the nature of the e-survey instrument and the limitation of conducting the research within the timeframe of a Master’s thesis. Therefore, while the information from the e-survey provides a small snapshot of Canadian environmental educators’ views of what was important for their work, it was limited to providing a ranking of knowledge and ability elements. The interviews (n=11) provided a more in-depth understanding of the educators’ perspectives, yet they are not generalizable to a larger population. The interviews were broad in focus, asking for participants’ views in three research question areas. This approach meant that the interviews had a limited ability to investigate any one topic in great detail, but instead
allowed for the emergence of larger themes and a diverse assortment of ideas and views. Therefore, further research could be focused on particular themes identified within the present study and allow for more in-depth exploration. Examples of additional areas of inquiry might include, (a) conducting case studies of teacher education programs attempting to instruct knowledge, abilities, and emotional connections, important for teaching EE; (b) considering the feasibility of a variety of potential mentorship experiences for environmental educators; and (c) investigating at a larger scale the opinions of environmental educators, particularly those working in non-formal settings, regarding the value of having a professional EE certification program in Canada.

Conclusion

The e-survey and interview participants shared their perspectives on what knowledge and abilities elements were important for them to teach EE. Specifically, a list of the top ten elements important to this subset of Canadian environmental educators was compiled. A further understanding of elements important for teaching EE were provided in the interviews. By determining the major themes found within the educators’ perspectives and comparing them with the literature, many similarities between theory and practice were addressed. In addition, by considering the significant life experiences of those already teaching EE, as well as their formal educational backgrounds, insight into what elements contributed to their development as environmental educators was obtained. The final questions of the interviews elicited suggestions from the educators regarding how to best prepare others to integrate EE within their teaching practice. Both the educators and the literature showed the importance of having knowledge of first hand experiences outdoors as well as having the ability to engage learners and create a sense of
environmental awareness, including an affective component. In terms of assisting educators in preparing to teach EE, changes to teacher education as well as alternative approaches such as mentoring opportunities were suggested by many of the participants. The value of a professional certification program was also considered and inspired mixed opinions among the educators.

Further research in the field of EE is needed, as are the continued efforts on the part of teachers, educators, administrators, and faculty members to implement research based EE initiatives. The present study identified several knowledge and ability elements as well as themes that are of value to consider and investigate in future studies. The importance of having EE in classrooms and other places of learning should not be underestimated as environmental issues are, and will continue to be, of urgent importance. Having educators that are prepared, able, and willing to integrate EE within their teaching practices is essential if students are to become environmentally aware citizens. By having educators and learners consider their place within the environment, practical actions can be developed that result in positive change for the earth and its inhabitants.
REFERENCES


APPENDIX A

ELECTRONIC SURVEY

Environmental Education Survey

Leah Dobrinski, M.Ed. Student
Faculty of Education, Queen's University
Kingston, Ontario
October 2007

Part 1: Demographic Information

Gender: ☐ Female ☐ Male

In what setting(s) have you integrated environmental education into your practice? (Check all that apply)

School: ☐
Outdoor Centre: ☐
Museum: ☐
Camp: ☐
Park or Nature Area: ☐
Garden or Agricultural Setting: ☐
Recreational Group or Club: ☐
Other, please specify: ______________________________________________________________________
With what grade or age levels have you worked with?

Grades K-6 (ages 5-11) □
Grades 7-8 (ages 12-13) □
Grades 9-12 (ages 14-17) □
Post-Secondary (ages 18 and up) □

Jurisdiction in which you taught environmental education for the longest period of time:

For how many years have you been involved in teaching environmental education?

5 or less □ 6 to 10 □ 11 or greater □

What is your educational background?

Degree(s): □
Major(s): □
Other, please specify: □

Do you possess any formal education or certification related specifically to environmental education?

□ Yes
□ No

If yes, please elaborate.
Part 2: Survey Questions

The following six questions each have several knowledge or ability items listed. Please rank the top three in each set which you feel are most important for teaching environmental education (EE).

Question 1)

<table>
<thead>
<tr>
<th>It is important to have a knowledge of:</th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Ministry of Education's curriculum expectations and guidelines related to EE</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Awareness of own personal views regarding environmental issues and their relation to instruction of EE</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The goals and evaluation methods commonly used in EE</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The responsibilities associated with EE (i.e. value-based elements are approached responsibly, behaviour modeled in class is conducive with EE)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Available professional development opportunities related to EE</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>EE as an educational process, not particular to specific outcomes</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
**Question 2)**

It is important to have a **knowledge of**:

<table>
<thead>
<tr>
<th><strong>Ways to use or adapt settings to help connect learners with their environment (i.e. EE in conservation areas, parks, green schoolyards)</strong></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>The importance of developing relationships with the natural world through first-hand experience</strong></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Environmental issues or problems (i.e. current local and global environmental issues)</strong></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Fundamental ecological concepts (i.e. ecosystems, biodiversity, natural selection, population dynamics)</strong></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Techniques commonly used to mediate impacts of environmental problems (i.e. recycling, composting, habitat restoration)</strong></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>The complexity of environmental systems viewed through a holistic perspective (i.e. interdependence of biotic and abiotic elements at various scales and over different timeframes)</strong></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
**Question 3)**

<table>
<thead>
<tr>
<th>It is important to have a <strong>knowledge of</strong></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>The multiple perspectives and points of view to be presented in EE (i.e. lobby groups, companies, local residents)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Place (i.e. experience of environment through local cultural history, geography and ecology)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Pedagogical models and instructional methods commonly used in EE (i.e. integrated programs, place-based education, rediscovery initiatives)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Available materials, technologies and resources for programs and activities in EE</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Students’ views regarding EE and the ways that they are affected and changed over the course of EE instruction</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The history of EE, landmark events and changes over time (i.e. declarations, environmental laws, leading research)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
**Question 4)**

<table>
<thead>
<tr>
<th>It is important to have the <strong>ability to:</strong></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuously update environmental information, while evaluating accuracy and reliability of sources</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflect on past experiences to improve teaching practices in EE</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitate holistic experiences that nurture a deeper caring and appreciation for the environment</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critically evaluate existing EE programs to determine appropriateness to your context</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engage learners (i.e. facilitate questions and encourage analysis and interpretation of content)</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persevere in order to work towards goals in EE (i.e. keep projects running, provide continuity in programs)</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Question 5)**

It is important to have the **ability to:**

<table>
<thead>
<tr>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and coordinate pedagogical activities (i.e. scientific or social research experiments for students)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Connect with members of your community to share knowledge and create opportunities for environmental actions (i.e. with local interest groups, elders/seniors, local businesses)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Allow learners' interests and initiatives to guide EE instruction</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Manage bureaucratic work associated with EE (i.e. fundraising activities, risk-management policies and legalities)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Develop a professional support network of mentors, advisors or fellow educators to assist in implementing EE instruction</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Role model reasoned, respectful and environmentally responsible behaviours to students</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
### Question 6)

It is important to have the **ability to**:

<table>
<thead>
<tr>
<th></th>
<th>1st choice</th>
<th>2nd choice</th>
<th>3rd choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teach EE from a holistic perspective by underscoring the complexity and interconnectedness of the natural environment with society, technology and the economy (i.e. include concepts such as systems dynamics, participatory democracy and the precautionary principle)</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Build consensus, from the different points of view that students, parents, administrators and community members hold, regarding the teaching of EE</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Add components of EE into multiple discipline areas (i.e. through simulation models or case studies)</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Teach students to assess the ecological sustainability of their everyday choices and behaviours (i.e. calculate environmental footprint)</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Remain procedurally neutral while presenting different points of view in EE</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Organize events and special activities to raise environmental awareness (i.e. ecological monitoring programs, school ground naturalization, shoreline cleanup)</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
</tbody>
</table>
Question 7)

Of all the knowledge elements and abilities listed above, is there one in particular which you consider most important for teaching environmental education?

Yes, it is the element I ranked as 1st choice in question number

No element in particular is most important

Question 8)

Are there knowledge elements or abilities, important for teaching environmental education, that have been omitted in the previous questions? If yes, please specify:

Question 9)

Do you attribute your views regarding environmental education to any particular significant experience? If so, would you describe it?

To submit your information please click on the button below.
APPENDIX B

INTERVIEW QUESTIONS

1) What do you consider environmental education (EE) to be? What would you not consider to be EE?

2) In what types of setting(s) have you worked as an environmental educator?

3) What are the ways that you are integrating EE into your teaching practice and why are you doing so?

4) What do you think of the following statement?
   “All education is environmental education”

5) The results of the survey showed that knowledge of the “importance of developing relationships with the natural world through first-hand experience” and the ability to “engage learners” were the most highly valued elements on the list provided. What is your opinion of these results?
6) The six knowledge and ability elements chosen as being most important in the e-survey are listed below along with statements 1 and 2. Which of the two statements, if either, better describes the context which would allow for these knowledge and abilities to be acquired? Please elaborate if you chose statement 1 or 2, both, or neither.

Statement 1) Requires adjustments to the existing educational system in order to be enacted

Statement 2) Could be enacted through improvements to efficiency and effectiveness of current practices

Knowledge of:

a) The importance of developing relationships with the natural world through first-hand experience

b) Place

c) The responsibilities associated with EE

Ability to:

d) Engage learners

e) Teach EE from a holistic perspective by underscoring the complexity and interconnectedness of the natural environment with society, technology and the economy

f) Role model reasoned, respectful and environmentally responsible behaviours to students

7) What knowledge or ability elements, if we have not already discussed them, do you think are of great importance to environmental educators?
8) In what contexts and settings, did you acquire these knowledge and/or ability elements?

9) Do you feel that any of your academic programs or certifications related to environmental education have helped you in acquiring the EE competency elements that you mentioned earlier as being important?

10) The following statement discusses the benefits of the EE certification program from The North American Association for Environmental Education’s website. What do you think about the following statement?

When someone indicates that they are an environmental educator, individuals within our own field often wonder what is the background or training that this person brings to the table. Do they have a strong background in environmental issues, natural resource content, and/or educational issues? Can they define environmental literacy? Do they know why Tbilisi is important to the field of EE or the history of environmental education? Can they write a lesson plan, talk to educators about educational issues, or explain how EE can be used to enhance their state standards? By implementing a state EE certification program, these questions can be addressed, creating a baseline of knowledge and skills for people who complete the program. Therefore, if you have an EE certification, then others know what you know and are able to do.

11) Where do you think are opportune place(s) to learn about the knowledge and abilities important for instructing EE?

12) What would you want to see happen to best prepare environmental educators in the future?
APPENDIX C

E-SURVEY: LETTER OF INFORMATION AND CONSENT FORM

Dear environmental educators,

I am conducting a research study on environmental education and would appreciate your participation in an online survey. This study is part of my Master of Education work at Queen’s University. The research focuses on the views of environmental educators regarding what knowledge and abilities are important when teaching environmental education. Please consider filling out this electronic survey if you have ever incorporated environmental education into your teaching practices. These would include, but are not limited to, classroom teaching, facilitating at outdoor centres, instructing at museums and camps; interpreting at parks or conservation areas; and leading recreational groups or clubs.

The electronic survey will take 10-15 minutes to complete and responses are submitted anonymously.

Participating in this study is completely voluntary and there are no known risks associated with participating. You may choose to not answer any given question or you may withdraw from the survey at any time by simply closing the browser. By submitting a completed survey, you give your consent for your responses to be included in the research study and related publications. Individual survey responses will be seen only by those working on the research study (myself and my supervisory committee members). In addition, responses will be stored in a secure location for a period of five years, at which point all the computer files and paper documents will be deleted or destroyed.

If you have any questions about this research exercise or you would like a copy of the data analysis, feel free to contact me, Leah Dobrinski, at 51nd@queensu.ca. You may also contact my thesis supervisor, Dr. Rena Upitis (613-533-6212; rena.upitis@queensu.ca) with any questions about the research exercise. For questions, concerns or complaints about the research ethics of this study, contact the Education Research Ethics Board (EREB@queensu.ca) or the Chair of Queen’s University General Research Ethics Board, Dr. Stephen Leighton (613-533-6000 X 77034; greb.chair@queensu.ca).

If you agree to participate in this research, please click on the link below to access the survey.

Proceed to Survey

Thank you for your consideration of this request.
APPENDIX D

INTERVIEW RECRUITMENT

Thank you! Your responses have been submitted.

Would you be interested in an interview?
If you are interested in possibly participating in a follow-up interview to this survey it would be greatly appreciated if you could provide your e-mail address so that we may contact you. The e-mail address will be stored separately from your e-survey to ensure that responses are anonymous. You are under no obligation to participate and you may withdraw at any time with no adverse consequences. The interview will be held at your convenience, in person or by telephone. It will concern your views and beliefs regarding teaching environmental education. It would require approximately 1 hour of your time. Thank you very much for participating in the survey and for considering this request.

If you would be interested in participating in an interview please leave your e-mail, answer the two demographic questions below and press the "submit" button:

E-mail:

In what setting(s) have you integrated environmental education into your teaching practice? (Check all that apply)

School: □
Outdoor Centre: □
Museum: □
Camp: □
Park or Nature Area: □
Garden or Agricultural Setting: □
Recreational Group or Club: □
Other, please specify: __________________________

For how many years have you been involved in teaching environmental education?

5 or less □ 6 to 10 □ 11 or greater □

To submit your information please click on the button below.
Dear Environmental Educator,

Thank you for completing the electronic survey for my study on environmental education. In it you expressed interest in participating in an interview on the same topic. Therefore I am writing to ask you to participate in this second part of the research study.

The interview lasts approximately 1 hour and will be held by telephone, or if possible, in a location of your choice. It will consist of 12 questions on your views and beliefs regarding the knowledge and abilities important to teaching environmental education as well as the experiences that have helped foster them. It would be audio-recorded to assist in analysis. More information is contained in the attached file entitled “Letter of Information for Interviews.”

I would sincerely appreciate the opportunity to discuss with you your views on the subject of environmental education and I would be more than happy to answer any questions or concerns you may have with regards to the research project. If you are interested it would be helpful if you included a few options of days and times when you are willing to set aside one hour. My schedule is flexible and would accommodate both daytimes and evenings.

At your earliest convenience, please reply to leah.dobrinski@gmail.com
Thank you for your consideration of this request.

Best regards,
Leah Dobrinski
M.Ed. student, Queen's University
Kingston, Ontario
APPENDIX F

LETTER OF INFORMATION FOR INTERVIEWS

Study Title: Teaching Environmental Education: Practitioners’ Views and Beliefs

Dear Environmental Educator,

I am asking you to participate in an interview on environmental education as part of the research for my Master of Education thesis at Queen’s University. Its ultimate goal is to investigate the views and beliefs of environmental educators, such as yourself, about the knowledge and abilities important for teaching environmental education, in order to help improve the preparation that educators currently receive for teaching this content area.

The interview will consist of a set of 12 questions; however you may opt to not answer any question(s) that you find objectionable or uncomfortable. The interview should last approximately 45 minutes to 1 hour, and will take place by telephone, or if possible, in a location of your choice. It will be audio-recorded so as to allow for transcription at a later date. There are no known risks associated with participating in this interview.

The data will be used in the production of my Master’s thesis and related publications. Your confidentiality will be protected by omitting defining characteristics and the use of a pseudonym. The data will be seen only by those working on the research study (myself and my supervisory committee members). In addition, the data will be stored in a secure location for a period of five years, in accordance with Graduate Ethics Review Board policy, at which point the computer files will be deleted and any paper documents will be shredded.

Participation in this study is completely voluntary. Therefore you may withdraw at any point and request the removal of part or all of your data, with no consequence whatsoever.

If at any point you have any questions about this research exercise or would like to have a copy of your transcript, please feel free to contact me, Leah Dobrinski, at leah.dobrinski@gmail.com. You may also contact my thesis supervisor, Dr. Rena Upitis (613-533-6212; rena.upitis@queensu.ca) with any questions about the research.

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

Thank you for having already participated in the electronic survey portion of the research study. Your continued participation in an interview would be greatly appreciated.

Best regards,

Leah Dobrinski
APPENDIX G

INTERVIEW CONSENT FORM

Title of Study:
Views and Beliefs of Environmental Educators and Implications for Teacher Education

- I understand the purpose of the study is to investigate the views and beliefs of environmental educators about the knowledge and abilities important for teaching environmental education, in order to help improve the preparation that educators currently receive for teaching this content area. My involvement will consist of answering related questions in an interview location of my choice.
- My questions concerning my participation, if any, have been answered.
- I am aware that an audio recording device will be used in the interview.
- I understand my responses will be treated as confidential, and that my identity will be protected to the extent possible. I understand the data will be kept in a secure location for a period of five years, after which the paper notes will be destroyed, and computer files will be deleted.
- I understand that the data will be analyzed and used for the purposes of a Master’s of Education thesis and any ensuing publications.
- I understand that I will not be expected to answer any questions that might make me feel uncomfortable or that I find objectionable.
- I have read the description of the interview as contained in the letter of information and retained a copy of the letter for my records.
- I understand that my participation in the research survey is voluntary, and that I may withdraw at any time without pressure or consequence.

I understand that if I have any questions about this research exercise, I can contact the researcher Leah Dobrinski (leah.dobrinski@gmail.com) or the thesis supervisor, Dr. Rena Upitis (613-533-6212; rena.upitis@queensu.ca). I may also contact the Education Research Ethics Board (EREB@queensu.ca) or the Chair of Queen’s University General Research Ethics Board, Dr. Stephen Leighton (613-533-6000 X 77034; greb.chair@queensu.ca) if I have any questions, concerns or complaints about the research ethics of this study.

Please retain the duplicate copy of this consent form for your records.

Participant’s Name: __________________________

Signature: ________________________________

Date: ________________________________
APPENDIX H

LETTER OF INFORMATION AND CONSENT FORM SCRIPT
FOR TELEPHONE INTERVIEWS

Hello <Participant>. Thank you so much for agreeing to be contacted for this telephone interview. Firstly, I would like to go over what the interview will consist of, as well as some details that might be of interest to you. Then, if you agree to participate, we can begin the interview.

As you may remember from the electronic survey you have already completed, the subject of this research study is environmental education. Specifically, the objective is to investigate the views and beliefs of environmental educators, such as yourself, about particular elements of knowledge or abilities important for teaching environmental education. This is a part of my Master’s of Education thesis, which I am working on at Queen’s University in Kingston, which is unfortunately a bit too far away for me to come meet you in person for this interview.

So, the interview will consist of a set of 12 questions and should last approximately 45 minutes to 1 hour. I will be audio-recording our conversation so that I can transcribe it later.

As we go through the interview, if you have any questions about the content, simply ask and I’ll do my best to answer. Of course, if there’s question that you do not feel comfortable answering just let me know and we will omit it from the interview. After all, the purpose of this interview is to understand what your views and beliefs are so I want you to be comfortable with the questions.

I will be using the data from our interview for my Master’s thesis and any related publications. Rest assured that I will protect your confidentiality by leaving out any defining characteristics and using a pseudonym instead of your name. In fact, I along with my supervisory committee will be the only ones with access to the data prior to publication as it will be stored in a secure location for the next few years before being destroyed.

I want to remind you that participating in this study is completely voluntary. If at any point you wish to withdraw from the study, simply let me know that you would like your data, or parts of it, removed and there are no consequences whatsoever.

Finally, if at any point you have any questions about this research exercise or would like to have a copy of your transcript, please feel free to contact me, Leah, either by telephone or at my e-mail address, or that of my supervisor.

If you have any questions I could answer them now and if everything seems o.k. with you we can begin. Do you still wish to participate?
Dear <Participant>,

Thank you for participating in the interview on environmental education. Your contribution to the research study is very much appreciated.

Should you have any questions or concerns about the interview, please feel free to contact me, at 51nd@queensu.ca. You may also contact my thesis supervisor, Dr. Rena Upitis (613-533-6212; rena.upitis@queensu.ca) with any questions about the research study. Finally, for any 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 General Research Ethics Board, Dr. Stephen Leighton (613-533-6000 X 77034; greb.chair@queensu.ca).

Best Regards,
Sincerely,
Leah Dobrinski
Leah Dobrinski (LD):
Good we’re all set. So we can begin! So the first question, you can follow along on your paper, it doesn’t really matter is, what do you consider environmental education to be and what would you not consider it to be environmental education?

Participant One (P1):
Uh, I guess for me, I consider it to be sort of both things that are taught about the environment, outside of that environment so like teaching environmental education in a science classroom or anything that’s done outside, even if it’s not necessarily directly um, related to like a specific ecological or environmental concept. If you’re spending time outside, I would, I would consider that one, sort of generally to be environmental education. Um I guess I would not consider like Math, I don’t know, like things that are really far away from it um, I don’t have any really passionate problems, like I think my opinion right now is that the more people who call themselves environmental educators the better because that will continue to sort of bring awareness and bring knowledge to the field even if it’s maybe a little bit, you know, if there’s some controversy within the field, I think that’s healthy but I’d rather see it sort of be a broader scope with more people involved than a really narrow scope that excludes a lot of people. Um, I guess an example for me for that is that I’ve been involved with [name of organization removed], do you know that?

LD: Yes

P1: The outdoor ed council and because they have this word ‘outdoor’ in their, in their name, it often excludes people who don’t necessarily feel that their work is outdoors, like the really excited world geography teacher who might be doing some really good environmental education but isn’t ever doing it outside. So, those people tend to get really quickly excluded from that organization which to me is kind of too bad because a lot of what the organization is doing, you know, is more applicable to that world geography teacher necessarily than like your camping instructor kinda person, so, I guess yeah.

LD: That’s a pretty good explanation. Thank you. Um, alright, so what types of settings have you worked in as an environmental educator? This is more of a demographic question.

P1: Um, so I taught two years at an outdoor ed centre, like a pretty typical, um it was privately run, called [name removed], if you want to look it up, yeah. I taught there for two years as like their teaching assistant position right when I finished my B.Ed and then I did um, kind of, I’ve sort of been working off and on with Outward Bound which is another kind of work that’s in environmental ed but a little more adventure based and, then I guess, the other thing that’s a bit weird is I’ve spent two separate chunks of time uh,
working overseas doing education programs overseas. The first one was with a group of Canadian volunteers, so they go overseas and they do these health, primarily health education pieces overseas and that was 2005 and then, just recently, 2006-2007, I spend a year in [location removed] where I was doing again health education stuff. Uh, so one of the things I’m really interested in is this sort of, this sort of idea of environmental health like the combination of the two, and that’s why I’m working at [organization name removed] right now. Although, to be honest, if you don’t tell anyone.

LD: No, don’t worry.

P1: [Section omitted at request of participant]

LD: No that’s great.

P1: I need to kind of like, sneak out some things here. So, one of the, so for that coming to this [name removed] job, was kind of neat because I think it will give me a little bit more of an idea of what kinds of other work there is with, with education. So.

LD: Would you think of your work at the [location removed] qualifying as environmental health?

P1: Mm.. I’m working in [specific health related occupation removed] so like I would say maybe yes. Uh, It’s not, it’ not env-, it’s not environmental education to me I guess in the same way that it’s, like I’m not trying to convince people to save the Earth, more like save themselves or create like a safe environment for them which is I’ve only been there for a couple of weeks, so, it’s kind of an interesting like perspective on what is environmental ed and does this fit in and like environmental health and like your safe water, safe drinking water certainly fits in with it, you know, tobacco, we’re doing a lot [project name removed] so that’s kind of environmental education in a sense but like in the same way I work in a place where everyone gift wrapped their cubicle for Christmas. You know what I mean? So like, I don’t know, maybe that would answer that question

LD: Yeah no

P1: I’m sort of debating how that fit together

LD: No and that’s real life

P1: Yeah, I don’t know, maybe eventually I’ll say yes but right now, my initial instinct is probably no but yeah.

LD: No that’s interesting.

P1: It’s really, I think it’s going to be an interesting job but the [organization and division name removed] promotion sounds very prestigious but, we’ll see. Like I said, so far today [content omitted at request of participant].
LD: All right, so thank you. Ah, so, you said right now, you’re not really sure if what you do is environmental education so these questions apply to your experience in general, so what, what you were saying, the outdoor centre, Outward Bound and if you feel it applies. So please, draw from anywhere.

P1: Ok.

LD: So question number three is what are the ways that you are integrating environmental education into your teaching practice and why are you doing so?

P1: Ok, yeah, so, one of the things that I was really keen on when I was working at Outward Bound which was quite, like [year removed] I worked the whole year and then I worked a bit this fall and one of the things I was really keen on was the idea of, of integrating um, like specific ecological concepts into the adventure trips cause a lot of the Outward Bound stuff is very much adventure based, so you’re going like you’re going to portage, you’re going to carry your boat, and like you might see a moose and that’s great but teaching these specific concepts of environmental education was something that, that I was kind of keen on and I often did it like through History surprisingly enough. Yeah. Um, which was something I was kind of interested in like, so looking at stories, historical stories and how they kind of teach specific ecological principles. Um, Like one of the things that I, like I don’t know if you want like a specific example but,

LD: Yeah sure. I’d love one.

P1: We um, so there’s a lot of white pines, big towering white pine trees in Algonquin Park so when kids see the white pines, they’re usually pretty impressed with them but they can’t really connect to them in any way so looking at, looking at like how humans connect to their environment in other ways, um, so I, the question I would ask is how is Napoleon Bonaparte connected to the trees in Algonquin Park? And then of course no one could figure that out cause it’s a pretty big stretch but you can kind of go through that when he cut off the shipping lanes to, then you know, people had to come here to get their wood and the British sailing ships were built from these trees and then they cut the forest down and like, and then from that, you can move to ok, well, when we look around here, can you, is there anything you see here that’s not, like what are signs you can see of human influence? Like, this how I usually word it and they can usually say like “oh I can see a candy wrapper on the ground” and like “someone broke the stick off the tree” or whatever but to get people to think about “well, these trees, in fact, have all been, a lot of them have been logged” so this idea of the concepts, I guess on a, on a bigger scale that’s not really an ecological principle but I guess this human interactions with their environment and then yeah, from there, there’s lots of other connections that I can, that I used to draw out from that. That’s one of the ways I guess I was doing it, is looking for specific pieces that were not necessarily boring, like little tidbits of interesting things that were linked specifically to something that was around us now, like this now factor with something I guess that I used and the why I guess is cause it’s really important and because it’s also hard I think to teach this stuff without sounding preachy with uh, especially with the populations that I working with which were like pretty well off, highly educated, well motivated, often Toronto private school kind of genre. Um, and they’ve
heard this all before, like they’ve heard it, they’ve heard it, they’ve heard it. They’ve heard be green, recycle, blah, blah blah, but they don’t ever have any connection to it, like real connection like personal connection. So things like gathering wood and making a fire, and then connecting like the wood we gather is from these trees, where are these trees from? What’s the history behind the trees? Like trying to close the gap a little bit. Yeah. It’s a lot of blabbering.

LD: So, and you, did you find you were able to do that, to make that connection?

P1: Well, as best as I can. Yeah, like I’d say, this was in all of the, the kinds of work I’ve been doing, I like kind of grew up doing this like summer camp canoe tripping thing. This was ah, something that I came to that seemed to work pretty well for me so, yeah. I’ve spent a lot of hours in Algonquin Park, a lot of trees.

LD: I think you just reminded me when you said you were working with a specific group of, you know, children from Toronto type area, probably just going back to question two what types of settings I should ask did you work with any particular age groups or as you said, genres of children in your experiences?

P1: Yeah, well that was, with Outward Bound, most of the work that I did was these short days like, I’d say three to ten day courses with like the grade 9 girls of [school name omitted] or the grade 10 [school name omitted] kids. So it was a very specific school program.

LD: Was it high school usually?

P1: High school, yeah, or 7/8 like. Yeah, um, and but I also did some stuff there in the summer time with youth at risk so that was, but that was specifically to the summer um, and then at the outdoor centre we did like K to 12 with a primarily focus on like 4,5,6,7 kinda thing so that was our, I would say the most number of days I’ve spent were would be with that range just because of that.

LD: Grade 4,5,6,7?

P1: Yeah, 4,5,6,7 just because of the, the bookings, like those were the people who wanted to come kind of thing.

LD: And the final question which I missed earlier was if you had to credit yourself with just a average number er, approximate number of years of experience in environmental education, randomly?

P1: Um, maybe 10? Yeah? Just from summer camp I would say, I’d say.

LD: I’m not say like, that was the whole issue but do summer camp but no.

P1: I’d say 10.
LD: Give me an approximate number, alright.

P1: Makes me feel old.

LD: I keep on talking to you and you don’t get a chance to eat!

P1: No no. It’s good.

LD: So, question number four asks what do you think of the following statement and that is “all education is environmental education?”

P1: I guess I just think really concisely that it’s probably really right because it’s really hard to separate our life from our environment and it’s hard to separate our life from our education so yeah, that’s kind of what, I definitely think that’s true although how it looks in practice maybe isn’t, isn’t as true as it should be, kind of.

LD: I’ll accept that. That sounds like a well thought out answer. Alright so now we’re, this next question has to deal with the survey which you already completed. So the preliminary results um, ranked knowledge of the importance of developing relationships with the natural world through first hand experience and the ability to engage learners as the two most highly valued elements from the list that you saw earlier. What is your opinion of these results?

P1: Um, yeah, I’d agree with those, yeah, I think those are both really important. I can’t recall the rest of the list off the top of my head but from, I certainly wouldn’t disagree with those. Like this idea about engaging learners I think is what I was talking about earlier, that’s what I was trying to say and developing relationships with the natural, yeah, yeah. That’s the kind, the same kind of thing I was thinking about, really. So yeah,

LD: You would even put it into what you were saying about Algonquin

P1: Yeah, like the idea that they just don’t ever have that experience, that first, first hand experience. They just don’t have that, so it’s hard to engage them to, to see how it relates to their life but I think it’s probably really important skill for transference later on for them to be able to take anything you teach them in one environment and transfer it to another, like take an outdoor experience and transfer it back to their suburban life. They have to be able to see their relationship as important and for that to happen, they have to be engaged as learners. It makes me sound very smart when I see all these big words on the paper.

LD: Well, no, this is, it’s been such a great experience listening to what people think on these issues and coming from different backgrounds. Um, alright. We can go on to number six. Number six actually is quite poorly worded so maybe I’ll just read it to you in my newer version. Um, updated today. So um, if I had to ask you, like we just mentioned, the importance of developing relationships with the natural world through first hand experience is-was the most important knowledge abil-knowledge listed, would you say that it requires, that it requires adjustments to the existing educational system in
order to be taught or would you say that it could be taught through improvements or instructed through improvements to efficiency or effectiveness to current practices? Or do neither apply or do both apply?

P1: Mm, so, like you mean to the current education system? In, just generically?

LD: Or whatever that means to you, like a summer, I’ve spoken with a teacher, so to her, that’s in the classroom but through the current system that you’ve experienced,

P1: Um,

LD: You can also refer to the Ontario system perhaps

P1: Yeah, I would say, see I guess I’m hung up over what the difference between adjustments or improvements are so I guess, yeah I would say, I would, yeah,

LD: If I had dich-dif sort of differentiate them, I would say adjustments to the existing system would be that there’s something intrinsic or inherent part about the system right now which would have to be altered as opposed to just sort of working with the current system for efficiency or effectiveness

P1: Hmm. I think I would probably say number one. I might be a bit idealistic but um, I mean, I certainly could see improvements through efficiency and effectiveness, but I could see big improvements but to actually get to the ideal, I think that there would need to be some really significant change um and I don’t know if that would just be the education system or all of society.

LD: Yeah, no, see.

P1: Cause I think the change has to be on how people prioritize this kind of education and um, like I’m thinking in my head, I look at, at schools that do prioritize this or systems that do prioritize this like the private schools prioritize it to an extent, um that I worked with and they definitely I think are more successful especially in terms of providing those first hand experiences. Whether or not that’s effective in actually making change within those students, I’m not sure because I’m thinking of the outdoor centre I worked at, some of the students, if they came from the same school all the way through Kindergarten to like grade 12 or whatever it is, they get some sort of ridiculously high number of days of outdoor, of taught directed outdoor education experiences, I think it’s like 60 or something. It’s stunningly higher than the private school the public schools are but they still I don’t think really change the behaviours of those kids in the long term they might sort of make them think a little differently but I don’t think they change their behaviours and to change their behaviours I think their entire educational system would need to be changed.

LD: Entire education system?
P1: Yeah, like this, this first one I would agree with but that’d be really hard, I wouldn’t wanna write my master’s on how to do that.

LD: I’m not writing my master’s on how to do that, let’s make that quite clear!

P1: Oh good.

LD: Yeah cause I would never end. So, thank you, that was, I think you made sense of that question. So, thank you for working with it. So I’m basically going to ask you the same question um, with two other knowledge abilities and then, three uh two other knowledge elements and three abilities. So, if you had to sort of describe between one or two or both or neither for teaching a sense of place, what would you, do you think that could happen in the current system or would you need a change?

P1: Um, I think that could happen actually within the current system. That one I would say to an extent yes, it could happen because the kids go to the same, especially in elementary system-school system, they go to the same classroom everyday, they have the same teacher, there’s a lot of routine in there and sense of place has a lot to do with going back to the same place. So I think they do have that structure about going back to the same place in there in the education system right now, most kids go through like, K to 6 or K to 8 or whatever in one school so there’s a lot that could be done with pretty small green (inaudible), you know, like outside their school yard, they could learn a lot about sense of place there so I think that one with some efficiency and effectiveness, sense of place could be worked with.

LD: I never thought of that before, thank you for sharing that.

P1: Yeah, that was my first thought.

LD: So, if we had to go on, so if you were to enact responsibility associated with teaching environmental education, so this is for the teacher’s perspective about teaching environmental education responsibly, um, whatever that means to you, um do you think that’s possible within the current system or would there need to be intrinsic changes?

P1: Uh, I don’t know, um my first instinct was yes, I think it would be possible within the current system. I think that comes from a bias of having spent a lot of time with a lot of really good people who are teaching really responsibly about environmental education and who are also modelling that to, through their own personal lifestyle choices.

LD: That model, is that part of the responsibility?

P1: I would say so, yeah. I would say that things like the school and how the school approaches daily practices would model responsible environmental education to me so thinking about the schools I’ve worked in, and taught in, and supply taught with, ow, don’t want to do that again, um there’s a lot of opposition to taking extra time or putting extra effort into these kinds of practices but I think the system is there it could be done if people wanted to and if people almost, I don’t want to say forced but if they were forced
to they could be a little bit more responsible with their daily school life. And then just changing how like, a bachelor of education is done, changing how um the curriculum is written, like those kinds of efficiencies, yeah, that could be, that could be worked with.

LD: We’ll get more into those questions a bit later. Um, so, same thing again but now with some ability elements. So, the top ranked ability element to engage learners, do you think that’s possible within the current system through effectiveness and efficiency increases or would it need a change for the system?

P1: Engaging learners in relation to environmental education?

LD: Yes. Absolutely.

P1: Um, yeah, to me, I think, what I, I would say it needs to be like a bigger adjustment would need to be made to do that. just because I don’t know how and I’ve never seen a successful way of engaging people about environment education without actually doing something without actually going outside and doing something or working on an advocacy project within your own classroom and the system right now just doesn’t support that extra stuff so yeah, it doesn’t, there’s not enough time, the curriculum’s overworked, teachers, it’s just not a priority for them to these extra things and then like field trips, or yeah. going outside, even like when I did my B.Ed and I was, I taught like a unit called human interactions with the environment which I was really excited about and I thought it was going to be great, we were gonna go outside lots, um but it was in uh like December or something, it was cold, it was like this time of year and all the kids wore uniforms and the girls all wore skirts everyday and the biggest obstacle I faced in going outside was that the kid didn’t come to school dressed properly to be outside for anymore than like 10 minutes at a time and to convince the kids in the class to bring warm pants but then they were like “we can’t wear them and we can’t wear them in the hallway” and then we had to give them 10 minutes to go and change and like the efficiency of the system was just so ridiculously against any idea of going against the norm um, so yeah, that was, that was hard.

LD: It’s a great example to illustrate. Yeah. I can picture the frustration. Was it a frustrating experience?

P1: Oh yeah, oh yeah.

LD: Sorry.

P1: No no, that was for sure. It was probably one of, it was frustrating and also really disappointing cause I was really, I was very idealistic, I was very young and excited and willing to work really hard and put all these extra things together but the more time I spent working, the more I realized I didn’t know enough about how the system worked to actually be effective in what I was doing and I was sort of kicking myself in the face over and over again like putting together a big outdoor ed thing and then not being allowed to go outside because it was cold out which if I had been teaching longer, I would have thought about but my past experience was like “of course kids go outside, that’s what
they do” where I worked before. So in this place, it was like “no no, school is 8-4 and it’s indoors or 8-2 or whatever and it’s indoors and the kids aren’t expected to be able to go outside.” And that’s it. So. That was very hard.

LD: Ok. So the next one is the ability to teach environmental education from a holistic perspective and by that I mean underscoring the complexity and interconnectedness of the natural environment with society, technology and the economy? So do you feel that the ability to teach from a holistic perspective is possible within the current system or would there need to be more changes, larger changes?

P1: Yeah, I would say this one also needs bigger changes. When I, my first thought when I see this is that there are programs that do this like um, like, oh shoot I’m get a blank here but ID, like interdisciplinary programs or interdisciplinary credits where students do four school credits with the same person or the same two teachers for a semester and they get like an English credit a phys ed credit, a environmental geography or whatever, they get four credits but they don’t do four classes and I think things like that allow a lot more opportunity for, for connections. Right now the system is such that there is no connections at all between either any of the subjects so the teachers don’t know what each other is, are teaching. The curriculum’s not even coordinated so that you might have a chance of doing overlap like that doesn’t even happen. So, that’s a long, a long one and the idea of natural environment and technology, it’s like wow. Like the system that I’ve seen at schools is just so far from that but you know there’s a, like at Outward Bound, there’s a private school that runs out of there and the kids come for a semester and they do like a semester course there and I’d say they do a really good job of, of connecting all the classes because they don’t, the students don’t ever know “like, now I’m in English” or “now I’m in geography” or “now I’m in whatever” they just have class and they go to class and at the end of the year, low and behold, they get four credits and I don’t know if you even ask those kids if they could tell you what project led to what credit and that’s a totally different system design and I’d say, but to teach in a system like that, I don’t even know if, like I don’t even know if could do it without some serious mentorship. I just don’t feel like I’ve ever had that experience of how to connect those credits together and I think I’ve had probably more experience than a lot of teachers have so

LD: Yeah

P1: That scares me a little bit that I don’t know, I don’t know if that could just be you know, improving efficiency at the school, like I think that would really require a bigger change.

LD: That’s interesting that you said that. Um, when you’re talking about these credits, you’re talking about high school level credits you mentioned?

P1: Yeah. You can definitely go on their website

LD: For Outward bound?
P1: Yeah, outwardbound.ca website and you can read all about, like pretend you’re a student about to enrol and see how it works.

LD: Yeah, I know. A friend’s little sister is doing it. I should probably learn more about this but. Um, so the last one on this section is the ability to role model reasoned, respectful and environmentally responsible behaviours to students? So it’s a bit tied into the one we had before.

P1: Uh, think that my first thought on this is yeah, we could probably do this within our system because we don’t, we all don’t need to go and live in bushes to be environmentally you know, we don’t all need to go live in the forest or be some sort of crazy like forest monkeys with big beards and only eating granola. This is what in fact would probably be more effective to teach people how to live within their own lifestyle um and I think there’s lots of examples where this has been done well like companies that have made good decisions about how they’re going to set up their building or how they’re going to use the water in the building, like things like that I think could be improved and then be successful.

LD: Not that it was a good answer but it was well explained. Alright, so move onto another, oh wait. Conclude at question seven. Is basically, if you wanted to think if there were any knowledge or ability elements that we haven’t discussed yet but would you think are of great importance to environmental education? So if there’s anything we haven’t really just covered up to now, think about it for a second.

P1: I think that those are pretty much all covered. I mean, there’s certainly more pieces but I think this is, this is a good overall summary of them. Yeah.

LD: Good.

P1: Good.

LD: So, this is sort of going back into your history a little bit, about in what contexts and settings did you acquire these environmental education related knowledge and ability elements? So these could be from anywhere.

P1: That’s a good question.

LD: I should probably rewind, I didn’t speak up on that one. This is picking everything up.

P1: Um, ok. So where did I learn these things, um, so I’ve, I mean, I’ve already mentioned summer camp that’s kind of where I think I uh, I started with, um, learning this uh, sort of things and having some pretty good mentors at, when I was sort of coming through the summer camping system um, like, the sort of program director who felt really strongly about some of the issues and looking back, I definitely had a lot, it influenced me a lot more than I realized at the time.

LD: Is this a residential type of camp?
P1: Yeah, so it was like a summer camp?

LD: Two months away kind of?

P1: It wasn’t actually, surprisingly, um yeah, it was, it’s a summer camp that runs out of [city removed] and it was for kids who made, it just sort of an all-in invitation and the kids who could afford to come could and if they couldn’t, could and it was a very mixed bag of people and a friend of mine’s mom was really involved with the camp when I started going through that and yeah, it was like 5 or 6 days but the summer that I was 14, I went for a month and then the summer I was 15, I started working there so, well, you know, 15, 16, 17, 18, 19, I was there like. So it was a pretty formative time. Yeah, worked my way through the system and had some pretty interesting people especially in terms of like, engaging people um, sense of place, that’s like I think one of the places that I still think is really important to me about that cause I was always coming back to it. Yeah, um, where else, I think through experience, through working with other people, um, the first job I had at the outdoor ed centre, my first sort of official real job, I had, I worked with two amazing educators, who I really hope answered your survey. Umm, they were really good people to work with and, and ah, just I learned a lot from them especially around like the responsibilities, like you can definitely link that back to one particular person, [name removed], that’s his name if you want to find him, he’s around, he’s a really neat guy and then in terms of like engaging learners and things like that, again through just time in and just like spending time with people and seeing how it all works. Um, uh. I guess that’s, that’s really, I mean I did a B.Ed here um, I feel like I learned a lot that year, it was a really interesting year.

LD: Were you in the I/S or P/J?

P1: I/S and I was in [professor’s name removed] OEE program as well.

LD: So you did the OEE program?

P1: Yeah. and I think, I think I learned a lot of knowledge that year. I don’t know how much I learned in terms of abilities like actually practicing some of the things I was doing but I’m sure I learned more than I, than I realize right now. Um I just, that year I definitely think, the biggest thing I remember from that year was just being exposed to a lot of different thoughts, a lot of different people’s opinions um, even ones I didn’t necessarily agree with or never thought of before, never heard of before so yeah.

LD: And just, so you’re I/S, so you had two teachables? What were they if you don’t mind me asking?

P1: Biology and phys ed.

LD: And I guess your undergrad was in

P1: Yeah in phys ed
LD: In phys. Ed

P1: At [name of university removed]

LD: Ok, wow.

P1: Umm hmm with a degree in biology, environmental science. Yeah, so there’s probably other places where I acquired some of this, yeah.

LD: Well, so this is leading to my next question. You’ve mentioned environmental science, too?

P1: Yeah, well, yeah, I don’t know, not officially, but I did take a lot of sort of environmental stuff in my biology degree, not so much like, that was what I was interested in. I didn’t spend a lot of time with like genetics or any of those things.

LD: So you took like some courses?

P1: Yeah.

LD: Yeah. So that’s pretty interesting. So the next question part is do you feel that specifically your academic programs or any, maybe you have certification are related to environmental education that has helped you in acquiring these knowledge and ability elements? So maybe just...

P1: Um, yeah, interesting, eh? Um, ok, so, specific certifications. The only thing I guess I would say maybe this one about the holistic perspective with complexity and interconnectedness. I think probably doing a degree in biology definitely helped me to see some of the principles in general and have a pretty good idea of, of that. um, I think yeah, and more than just the actual concepts, an ability to read and interpret things pretty well afterwards, like to pick up a, a, paper on something and do things with it whereas a lot of people that I end up working for example at outdoor ed centres with who maybe didn’t have a science background struggled a lot more with not necessarily teaching science but taking information from one source and looking at it critically and putting it somewhere else. Like, I can specifically remember working with people who were like “naw, that’s like, I can’t deal with that, it’s too many words,” or “it’s too thick” or whatever and maybe a like, a no fear or limited fear of journal articles. Um, yes, certification definitely in things like uh, engaging learners I would say, like I’d say a B.Ed definitely helped with that. I did like a high ropes course certification that was pretty specific on like facilitation and engagement through that. Um yeah, little pieces here and there came from certification but really I think, the ability elements I think came from just time and watching other people

LD: And that was more in the summer camp and like?

P1: Working at the outdoor centre, working with Outward Bound, working with other
instructors, that’s where I’d say. Like Yes, I would definitely credit my academic programs, like, I’m not going to

LD: Yeah..(giggle)

P1: Diss them all together but in terms of the overall ability pieces, I just, I don’t know if any replaces time or experience for that.

LD: Probably a pretty fair statement but in terms, I think yeah. I think you’ve pretty well summarized it. Even though I’ve tried to lead you one way, you forced yourself back. That was good. Um, so, this next one you can take a big bite because this is a long one for me. Um, is a statement I took from the website from the North American Association for environmental education and it’s discussing someone’s comment about a certification program that they’re putting in. Well, this association is offering. So “when someone indicates that they are an environmental educator, individuals within our own field often wonder what is the background or training that this person brings to the table. Do they have a strong background in environmental issues, natural resource content, and/or educational issues? Can they define environmental literacy? Do they know why Tbilisi is important to the field of EE or the history of environmental education? Can they write a lesson plan, talk to educators about educational issues, or explain how EE can be used to enhance their state standards? By implementing a state EE certification program, these questions can be addressed, creating a baseline of knowledge and skills for people who complete the program. Therefore, if you have an EE certification, then others know what you know and are able to do.” So I just want to know what your reaction or opinion of this is.

P1: Um, sounds good. Yeah, like it’s some sort of certification that would provide more of a credibility that’d be lovely um, cause yeah, it’s true, things like Tbilisi, I don’t know who that is at all or what it is, um, and this thing, I guess that’s another thing, like natural resource content um, and just basic environmental like, identification pieces. Like you don’t think that’s really the most important piece but you know, I worked with a lot of really interesting people and one of the ones who influenced me once said like, his background was very much, I don’t know what the term for it is, but like he sort of [name removed] what that’s guy’s name? the scout guy, anyhow, he’s really into like this very woodsy

LD: I don’t know.

P1: Woodsy things where he, you know, goes for like three days and brings a knife and kills his own rabbits and like that kind of genre of outdoor ed and environmental ed and he’s just appalled when he meets people who call themselves environmental educators but who can’t tell their students the difference between like a pine tree or a spruce tree which there are a lot of people who can’t and he, that’s one of his big beefs is that people should. If you’re going to call yourself an environmental educator you should have some of these basic pieces. It’s just so hard to say what they should be though. I mean, this is a good statement.
LD: So you don’t agree with his view or do you?

P1: No I do, I really do. I really think that he, he’s on to something. You know, he said, when I met him, and he was talking about an experience he had going through a summer where he worked with a bunch of guides at a, like a canoe tripping guides, and being amazed by how many people had spent like three or four summers as guides but who couldn’t identify like, basic birds or who couldn’t talk about um, you know, how plants could be used, like which plants you could eat and which ones you couldn’t and he felt that there was a huge separation between what people claimed they could teach and what they actually knew themselves. Um, I guess, interesting, this is just the next, the other thing this brings up to me. This weekend, this past week I was at this training for my new job which is all about youth development and I was one, so I was there. A lot of the people were very, very new to working with youth or children or students or whatever, and they were trying to explain the importance of knowing the language. So being able to talk about like what is youth participation, what is um, advo-youth advocacy, like, this idea what are the language terms? And people sort of were like, “it’s not important for me to learn the definitions. It doesn’t really matter” and the facilitator made a really interesting comparison to other professions and he said, are we running out of time?

LD: No no. I’m just making sure it’s still working.

P1: He said “if you look at, if you go around and ask a group of people, you know to, what TV shows they watch and they say ok, I watch Grey’s Anatomy and Law and Order, and you say tell me what are some of the terms that they talk about in Law and Order? And everyone can tell you like subpoena or the perp, or you know, and understand what are the roles of the judges, the attorney. We can say the same thing about medicine, we can all say like he needs a biopsy or you know his aorta is burst but people don’t really know what that means but everyone can kind of talk it in society but people can’t talk that about education and about working with youth” and he said “that’s why as someone working in the field, you need to learn the language so that you can better explain it to other people” um, so, that’s I guess, what something like a certification program would even increase, right? Is this idea of a common language or a common um, way of explaining things and then an abil- a better ability for people to communicate amongst themselves. Yeah. I think about working at Outward Bound where you know, someone would show up and they might have worked some where else and just the idea ok, well, we’re going to do the same icebreaker game. Everyone knows the icebreaker games, no one knows what they’re called. You know, everyone can say, “oh yeah, that’s the one where you throw the balls around. I know, I call that like jumping monkeys,” “out here we call it flying fish” or whatever like, no one has the same language for it and while it doesn’t really matter for games, it often is the same thing about lots of other things like people don’t have the same language for um, you know the process someone goes through or the process a group goes through, or the process of experiential or environmental education even is defined differently all over the place. So within an organization, the more time you spend there, the more you learn their terms, the more you become more of their little bubble and the less accepting you are when you go somewhere else and hear how they explain things a little differently. So, it’s really hard because it’s, if someone asked me to, you know, create what some sort of certification would be, it
would just be, it would really challenging but very interesting to think about what would that look like and what would be the pieces that should go in to.

LD: I find this is interesting coming from especially from someone who’s graduated from the Outdoor and Experiential Education which I know a little bit about from working in this faculty and cause that isn’t a certification per say, but it is.

P1: Yeah and it is. It was an interesting year. It definitely opened me up to some new ideas and definitely got me sort of thinking about things a little differently but then I went to the [removed current job] and like the way they approach youth development, it’s all kind of the same thing right? It’s a whole other set of language and a whole other set of terms and whole other set of values almost around it and yeah. Like most professions have some sort of standard pieces that everyone ties back to but I don’t know if I could tell you what those would be for environmental education. I mean, obviously I think you’ve done a good job of summarizing most, like this list seems very good, I would hate to be in a room trying to get people to agree. You know, trying to get a group of people to agree with that. Oh that would hard.

LD: I didn’t go for focus groups, I could see especially a lot of people are quite driven by these issues so. Um alright, going on to question 11. so, where would you think are opportune places to learn about knowledge and abilities important for instructing EE?

P1: Well, mmm, well, from my, I guess from my experience, the best places I had the chance to learn were working with experienced people. So, I think that’s a pretty awesome place because you get pretty immediate feedback, you get a chance to play around with your ideas and with your, your actual teaching with good feedback, that was really good for me and then, specific targeted in-in specific targeted areas so I’m thinking like that high ropes instructor course was like a very specific targeted area where I learned specific knowledge and specific abilities, had a chance to put it into practice and then got good, good feedback like how to knot too tight together, but the problem with education is you just don’t get immediate feedback very often. Like you try something with a group of students and it’s just hard to know if it worked. Like did it make a difference, yes or no and then how do you know if it made a difference and how can you measure that for yourself if you’re, if you’re being effective in your teaching. You know, you hear all these stories, like 10 years later, Johnny came back and told me I changed his life but if you haven’t had those stories, like it’s really hard to, to know if you’re doing it right and then it’s equally hard to either give or receive feedback along those lines because without serious trust in a person, like if someone came to me and said “ok the way you’re doing environmental education is all wrong” unless I really trusted that person, I’d have trouble taking that in cause I’d say well, I’ve been doing it like this for what I said like 10 years, like come on there’s got to be some value in it but if you have that really good trusting relationship that’s, I think a really good place to learn um. Yeah, it would be nice if it could be done through a more formalized system, like if it could be combined somehow, you know, to have this sort of mentorship piece and then combine that with, with your certification.
LD: Mentorship based?

P1: Yeah I think that would be yeah. It would be neat to say come up with like a core competencies thing. Like of all the core competencies you needed cause that’s, that’s something I’ve done too with Outward Bound. They have like this core competency piece and you have to say ok like I’m pretty good at this and I’m ok at that. like some of them are really easy to mark, like I cannot you know, climb rocks at this level, like no, yes whereas some of the education ones are always a little fuzzy and who do you compare yourself to and how do you put yourself on scales but I don’t know yeah. So many options.

LD: And so these ones you’re working, mentioning is a place where someone in a specific context, someone could have a mentorship relationship with the educator to be.

P1: Yeah, so like an experienced educator, so going out on a ten day trip with someone whose done a lot of 10 day trips and you’re still the educator, you’re still in the role of teaching like, you’re not in a student role in that position but you get, you get that student piece yourself cause you have someone to talk to about how things went or didn’t go or who can give you some yeah, feedback as you go.

LD: So like I can see, would this, according to you, would this work for people who are becoming educators now as well people who are already educators and perhaps take an opportunity to go out and do this?

P1: Yeah maybe?

LD: Or would it be more limited? What’s the, I guess I’m like whose your target audience for this?

P1: The target audience I would say would be like beginning educators, whatever that means, right? Beginning environmental educators as well, but I can see the sneaky piece; the problem with that would be what do you do with the person whose been teaching 30 years doesn’t really have an interest in putting a lot of effort into learning how to instruct environmental education but maybe should and I guess that’s, all these questions are very connected cause that makes me think about the idea of changing the system or not changing the system and it would be very hard to take someone whose been teaching for 40 years or 30 years in one way and then, tell them they need to change to a different way. They’re not gonna really want to be in a mentoree position, they’re the mentors but if they, yeah, it’d be very difficult.

LD: Alright, good, interesting. So, second to last question, yes there’s a trick to number 13, what would you want to be see happen to best prepare environmental educators in the future?

P1: Umm..

LD: I’ll give you a second to think about that if you want.
P1: I guess what I would want to see is every person who goes through a formal education system, so if you come and you do a B.Ed, it would be great if you came out of it, thinking of yourself as an environmental educator even if you came in thinking of yourself as an art teacher or a French teacher, if you could come out and see how environmental education connects to your field, your teaching-teachables, like your field. Um, like a mandatory environmental ed class for every bachelors of education student in Ontario and I think that’s maybe a realistic within the scope of changing the system, I think that’s a realistic piece that could be added. Um, yeah and I guess the other thing that would be nice is to have a place for people who aren’t necessarily like B.Ed grads to increase their skills and knowledge and abilities and all those things in a certified formal system that’s not a B.Ed cause I have a lot of friends who work you know, at these places like Outward Bound and they don’t want to get a B.Ed., they don’t want to be a teacher and they don’t see that as relevant but they aren’t given a lot of credit for their experience, I guess, for lack of a better word. They’re not given a lot of credit for what they know or how well they can do it because there’s nothing for them to do and I think you see a lot of people in that field like hang on the names of the organizations they worked for, so say, oh I worked for Outward Bound, so people will automatically know ok, that must mean this or I’ve worked for this place so that must mean I know how to do this, kind of thing which I don’t think is particularly healthy, necessarily because you can come and work for 5 days for Outward Bound with you know a pretty minimal skill set and at the end call yourself an Outward Bound instructor or you can be there for 10 years and be an amazing educator in all sense of the word and you’re lumped into the same category by the general population.

LD: This non-formal.

P1: This like, non-formal like um you know, I’m like not credited so what you often see is a lot of people who, ok I’ve worked in environmental education for like 5 years, I know this is what I like, I know I’m pretty good at, I’m just going to go and get a B.Ed because I want people to understand what I do. I want my family to give me some credit for not, you know just wasting my life, get a real job, stop working at summer camp, like I’m going to get a B.Ed just because that will show other people, not because it’s valuable to me. So you see a lot of people, and I think that’s one of the downsides of that OEE program is that it doesn’t, it doesn’t recognize that a lot of people come into it and they, they pretty much like just want to be able to say I’ve done this and now I’ve got credit for it because when I go and talk to people in the rest of the world, they say “oh, you went there?” “Oh you did that program? Ok, I automatically, I know that’s a competitive entry program, I know it took you whatever” so it, it boosts your status a bit even if the program was crappy or you didn’t do anything in it or you complained the whole year which a lot of people do, so, you know, it’d be nice if the certification piece was more relevant to the knowledge and abilities piece. Perhaps, that’s not where it is now, so that’s kind of like the non-formal thing and I think another way that would be really nice would be to just give the people who are happy or satisfied within the formal education piece the opportunity to increase their environmental ed knowledge. Like I think right now the ministry’s introducing an AQ course like an additional qual course in some sort of environmental ed thing. I don’t know.
LD: Are they actually doing, I’ve been hearing bits and pieces coming along so.

P1: I don’t know, someone sent me an email about it, I can’t really, I wouldn’t want to speak for it.

LD: Yeah. I’m following that progress.

P1: I know, I know, it’s in, in progress. That’s would be good but then again who does it target, who does it target who, you know, what are the knowledge, skills and abilities that are important in that. Again, is it just going to be a place where people who already are good at it to come and get formal certification to give credit to what they do or is going to be an actual place where people who don’t know about it come to learn. That would be.

LD: You know it just struck when you were saying AQ, I was thinking of the high school level course.

P1: Oh no.

LD: That’s the one I’ve been following: AQ as in a teacher qualification.

P1: Qualification.

LD: Oh good, I haven’t heard of that one, so it’s like wait. Good.

P1: Yeah. lots of talking.

LD: No this is, this is it. I want to hear where you’re coming from and your opinions and views on this. Um, so, if we’re ready,

P1: Yeah.

LD: I’ll move to the next question number 13 which you don’t have because it’s trick question. In this interview about environmental education, knowledge and ability elements as well as educator preparation for environmental education, what do you wish I had asked you but didn’t think to ask?

P1: Mmm, let me think.

LD: Yeah, take a minute.

P1: I don’t know, very interesting. Um, there’s not really anything I can think of off the top of my head. I guess if I had, if it was like a forced choice and I had to say something, I’d probably say um, something about the, either the experience of youth who come through or like students who come through or something about more along the lines of how, is it possible to change an education system without changing the society it exists within?
LD: When you said the experience of youth, did you mean, as in the youth the teachers would be instructing?

P1: Yeah, what would it be like to be you know, to come through the school system as it is now versus what would it be like to come through this, you know, new system, what, how would you see a student’s learning progression or what experiences would they have? But that’s a big question. I’m, I’m very intrigued with these questions because on paper they don’t really look like you know, more than questions but definitely made me think a lot more than I was expecting to.