Creating Federal Policies to Support Environmental Education in Canada

Kathryn Rehse
Grenfell Campus
Memorial University of Newfoundland

Environmental Education is an essential component of childhood education and can play a vital role in the development of positive environmental attitudes, community involvement, and environmental awareness. One of the main challenges faced by Canadian educators is the lack of support and funding to fully engage and participate in Environmental Education programs that are locally available. To better understand the viewpoint and challenges of educators and Environmental Education programs, this paper includes an interview series with three Environmental Education leaders, followed by a discussion section on significant commonalities. Through the research of peer-reviewed literature, federal documents, and environmental networks, this research paper aims to interpret the development and challenges of K-12 environmental education in North America as well as to review the established programs, networks, and resources available to Canadian educators.

Introduction

Since the publishing of Rachel Carson's *Silent Spring* in 1962, the environmental movement has spread, rooted, and developed a demand for a greener, more holistic, way of life. More recently, Education for Sustainable Development (ESD) has gained international support after the Johannesburg World Summit in 2002, where 178 countries committed to develop frameworks that would support and promote environmental literacy, community involvement, and new environmental standards. Although Environmental Education (EE) has gained momentum in North America, it has struggled with establishment and continuity within all levels of the education system. For existing programs, there is a lack of consistency on curriculum outcomes, resulting in scattered levels of knowledge, understanding and commitment.

One of the main challenges faced by Canadian educators is the lack of support and funding to fully engage in Environmental Education programs that are locally available. Through a series of interviews with local education professionals this paper seeks to identify key issues that challenge the progression of Environmental Education and Education for Sustainable Development in Canada as well as to underline the importance of developing federal and provincial policies to support new and existing initiatives to support such education.

Methodology for this paper includes: significant peer-reviewed literature and federal document research, identification and contact of interviewees, writing the semi-structured interviews, as well as the conduct of interviews using a sound recording device. The organization of this paper begins with an Introduction section followed by The Development of Environmental Education in Canada, Provincial Frameworks and EE Networks in Canada, An Environmental Education Discourse, The Importance of Developing Policies sections, and ends with a Conclusion section.

Canadian Environmental Education for the 21st Century

Incorporating environmental education within the public school systems is essential as parents today work longer hours and rely heavily on educators to teach children social responsibilities and ethics. It is also essential that youth are not only educated about environmental systems and processes, but that they are enabled to critically assess the world around them and to realize the possibilities that can be created from a sustainable future. With an increasing disconnect between the current generations and the natural environment, environmental education can help to re-establish the inherent relationship that has been lost. Without this relationship, humans are unable to realize foreseeable future outcomes, an ability that has allowed our species to thrive throughout history. As tomorrow lies within the youth of today, it is fundamental that they are provided with a sound understanding of interconnectedness, finite resources and the need for a sustainable future.

While the Canadian Federal Government has committed to the idea of Education for Sustainable Development and supported the establishment of many programs, public school educators continue to struggle with coordinating field trips, logistics, and securing funds which are required by most existing programs. Even though program fees are essential for maintaining the programs themselves, they are not a feasible option for most educators and students. The responsibility for program implementation must be determined with a focus on the importance of policy making at both a federal and provincial level to ensure the success of environmental education, and most importantly, a shift in fundamental learning outcomes geared towards a sustainable future.

Defining Environmental Education

Within existing programs across North America, Environmental Education is taught through an array of different mediums including experiential education as well as classroom settings. Environmental Education can include many concepts and can have a wide range of definitions, including Education for Sustainable Development which has become the supporting idea behind (and ahead of) Environmental Education. As stated by Marcinkowski, (2010, p.41):

> Although EE has had a longer history than ESD, it is evident in passages from the Bruntland Commission report that ESD is much broader in scope than EE. As such, ESD, like SD (Sustainable Development), seeks to address social goals (e.g., access to food and water, healthcare, and education; basic literacy), economic development goals (e.g., alleviating poverty, improving living standards), and technological development goals (e.g., cleaner and more efficient technologies to serve local needs), as well as environmental goals (World Resources Institute, 1992).

Marcinkowski continues to explain, "that the roots of education for sustainable development are firmly planted in environmental education" and "that Nature Study, Outdoor Education, and Conservation Education contributed to the purposes of, infrastructure and sites for, practices in, and research/evaluation base for EE" (2010, p. 41).

For the purpose of this paper, the term Environmental Education will refer to all other types and divisions of EE, including but not limited to: Outdoor Education, Nature Education, Outdoor Pursuits, Adventure Education, Climate Change Education, Environmental Science and Environmental Studies/ Literacy under the same umbrella term of Environmental Education, as a

developed education involves multiple teaching methods and covers a range of topics. The following table summarizes each concept through the delivery of lessons, setting, and teaching outcomes:

Table 1.0 Types of Environmental Education

Outdoor Education	Follows traditional curriculum outcomes in an outdoor setting. Often uses nature as a teaching aid, tool or context.
Nature Education	Lessons are specific to natural science, often involve a local environment.
Outdoor Pursuits	Lessons about the natural environment are incorporated within outdoor recreation activities and include a focus on skill development.
Adventure / Experiential Education	Primarily based on reconnecting students with the natural environment and focuses on behaviour and attitude development.
Climate Change Education	Focuses on recent global climate changes and can cover aspects from natural science to social sciences.
Environmental Science	Primarily takes place in a classroom or laboratory, will use the local environment for sample taking, drawing on examples of natural processes and integrates both physical and biological sciences.
Environmental Literacy	Theory based, is interdisciplinary with a focus on critical thinking. Usually takes place in a classroom setting.

Other aspects to Environmental Education can also include the promotion of School Yard Naturalization. As today's school yards mostly consist of brick and asphalt, there has been a movement in recent years to create learning environments which foster creativity, promote environmental stewardship through a direct relationship with nature , as well as to create a second classroom, among many benefits.

Of all Environmental Education concepts, most fall into one of two categories. Learning experiences such as Adventure Education and Outdoor Pursuits rely first on direct experiences with the natural environment and then build upon theory as a secondary outcome. Others such as Climate Change Education and Environmental Literacy focus primarily on theory based lessons and then build upon local environments and the natural world as learning contexts and applications. Delivered through different contexts, both types of lessons work towards developing a thought process that teaches students about the interrelationships of the natural world as well as the human-nature disconnect of the twenty-first century.

The UN Decade of Education for Sustainable Development

Declared by the United Nations General Assembly in 2002, at the Johannesburg World Summit in South Africa, the years 2005-2014 became the international Decade of Education for Sustainable Development (DESD). With the United Nations Educational, Scientific, and Cultural Organization (UNESCO) delegated as the head agency, "the overall goal of the DESD is to integrate the values inherent in sustainable development into all aspects of learning to encourage changes in behaviour that allow for a more sustainable and just society for all" (Pigozzi, 2010, p. 257). Also noted by Pigozzi (2010, p. 258), "if successful", this decade will "enable learners to be actors for sustainability".

Although there has been much success in the development and integration of Education for Sustainable Development within higher education institutions, where funding is readily available, ESD has struggled with fully incorporating programs into primary and secondary education. Although many programs exist across Canada and the United States, these programs are often organized independently of the school system and require additional funding.)"Even in countries that have ESD coordination bodies (such as Canada) there remain constraints to working across ministerial, departmental, and other boundaries. This is further complicated by funding and budgeting processes, which emphasize conventional boundaries, rather than encouraging collaboration" (Pigozzi, 2010, p.263).

One of the advantages to Education for Sustainable Development is the underlying theme of interdisciplinarity, which connects values, engagement of critical thinking, and the address of social, cultural, as well as economic issues of the present and future days with the objective reality of the physical environment. Such an interdisciplinary nature connects quality of life and the reality of today, as the true lessons, to students, educators, and families engaged in ESD.

Current ESD in Canada

> In Canada, education is the mandate of each province and territory, supported by transfer payments from the Government of Canada to ensure continuing high standards. Through the intergovernmental Council of Ministers of Education, Canada (CMEC), provincial and territorial education ministers work together on common interests and consult and cooperate with national educational organizations and the Government of Canada (Canada, 2005, p. 1).

At the Johannesburg World Summit in 2002, "Canada presented *A Framework for Environmental Learning and Sustainability in Canada*, which, among other things, identified the need for a systematic approach to take environmental learning forward in the broader context of sustainable development" (Canada, 2002. p.1). Since the World Summit in Johannesburg, the Council of Ministers of Education, Canada, has created a council, ESD Canada, established in 2006, as well as the Education for Sustainable Development Working Group (ESDWG), created in 2008 which has recently published *Developing a Pan-Canadian ESD Framework for Collaboration and Action- Background Paper* (ESDWG, 2008).

Published in 2005, *Education for Sustainable Development in Canada: The Work of the Federal Government* describes how the government of Canada is implementing many ideas from its original framework, presented in 2002 at the World Summit. One of the highlights of this document outlines three activities that support Canada's commitment to ESD. These activities include:

a) Raising Awareness, which "aims to expose citizens and federal workers to the concept and principles of sustainable development" (Canada, 2005, p. 3).
b) Engagement, which "illustrates the variety of ways in which the Government of Canada calls citizens, global partners, and federal workers to greater personal and corporate responsibility for sustainability" (Canada, 2005, p. 3).
c) Information for Decision Making which, "exemplifies the many types of information offered by the Government of Canada, as well as the methods by which this information is conveyed, to help Canadians in making decisions that support sustainable development" (Canada, 2005, p. 3).

"Education for sustainable development is a process, not an end, taking place inside the traditional classroom but also moving beyond to encompass any means that empower people to reach toward the goal of sustainable development" (Canada, 2005, p.2).

Environmental Literacy, Community Involvement and Experiential Education

Essential components to Education for Sustainable Development are Environmental Literacy, community involvement, and direct experiences with the natural environment. According to McBeth & Volk (2010), Environmental Literacy has four main elements that include, Ecological Knowledge, Emotional Affect (verbal commitment-intention to act, environmental sensitivity, general environmental feelings), Cognitive Skills (issue identification and analysis, action planning), and Behaviour (actual commitment, pro-environmental behaviour).

> Learners (both adult and youth) will require a greater understanding of the interdependence of the economy, environment, and social issues; understanding of interrelationships and systems thinking, consensus building, and decision-making; and the ability to identify both sustainable and unsustainable practices. People will be challenged to envision a sustainable future, so that they will know what to aim for and can think through the consequences of their behaviour and actions (Canada, 2005, p. 6).

An Environmental Literacy component is important in building a sound understanding of environmental issues which is an essential step towards sustainable development.

A prominent community involvement program the Atlantic Coastal Action Program (ACAP) has been operating since 1991 around 13 different ecosystems, and is led and maintained at the local level (Ellsworth, 1997). According to Ellsworth (1997), "the objective was to facilitate the establishment of community-based organizations that could assume a leadership role for the planning and management of regional coastal ecosystems throughout the Atlantic region" (p. 126). This program is not only a critical component to the maintenance and health of its project ecosystems, but helps shape the community itself in regards to a sense of ownership and understanding of the interconnectedness of social, economic and environmental sectors. Specifically in regards to environmental action on an educational level, Schusler & Krasny state:

> environmental action aims not to modify specific behaviors like recycling or saving water, but rather engages youth in planning and taking action on environmental issues they find relevant. In addition to improving natural and built

> environments, these experiences can help youth grow as citizens because they involve authentic participation in community issues (2010, p. 208).

Finally, experiential education, both formal and informal lessons, plays a critical role in the development of positive environmental attitudes and behaviour. In 1968, Erikson wrote, "youth as a stage of development is characterized by a process of integrating past experiences and current ideals into an evolving realization of self and identity" (as cited by Arnold, 2009, p.28) and "informed efforts to engage young people in environmental issues could have implications for their interest and involvement in environmental action throughout their lives" (Arnold, 2009, p.28). Since the historic founding of Outward Bound in 1941, the benefits of Experiential Education have been marked and noted as exceptional experiences. In an interview with several environmental leaders in 2009, Arnold recorded:

> When speaking about a wilderness canoe trip, a participant named Anna related those significant experiences to her development of a caring ethic toward the Earth. She said, "I only became really passionate and really committed to make a difference in my life when I went out and was really moved by the environment" Her experiences in the wilderness influenced her to take action to protect those lands (Arnold, 2009, p.32).

The Development of Environmental Education in North America

On June 3rd to 14th, 1992, in Rio de Janerio, Brazil, Agenda 21 was adopted by the United Nations General Assembly. "Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment" (United Nations, 2009, www.un.org). This was the beginning of what would become the UN Decade of Education for Sustainable Development, and a committed movement towards Environmental Education in North America.

The North American Framework and the EE relationship

In order to understand the development of Environmental Education in Canada, one must also look to the development of Environmental Education in North America as a whole. Although many successful programs and organizations are established in Canada, many also originate from across the border, in the United States of America, and continue to branch out in our own provinces of Canada. It is also important to recognize organizations such as the North American Association for Environmental Education (NAAEE), and the Commission for Environmental Cooperation (CEC) which are international organizations of North America that aim to connect the neighbouring countries of the continent and promote environmental education, information, and awareness.

The Rise and Fall of Federal Support in USA (lessons and achievements from across the border)

Both committed to the development of Education for Sustainable Development, Canada and the United States of America have made quick strides since the declaration of the Johannesburg World Summit in 2002. However, one difference between the two countries lies in the fact that well before the Johannesburg World Summit, Federal decisions of the USA have

charged the United States Environmental Protection Agency (EPA) with the responsibility to promote and engage citizens with Environmental Literacy through the National Environmental Education Act (NEEA), passed in 1990. According to Potter (2010), "since the first appropriation in 1992, almost $100M has been spent to increase the public's awareness of environmental issues" (p.22).

> In 1990, Congress passed the NEEA giving EPA the responsibility for establishing an office of EE to strengthen and expand EE as part of its mission to protect human health and the environment. It is the only piece of federal legislation focused specifically and solely on EE. The purpose of EPA's education office was to "develop and support programs and related efforts, in consultation and coordination with other Federal agencies, to improve understanding of the natural and built environment, and the relationships between humans and their environment, including the global aspects of environmental problems." The act mandated the design, implementation, and management of a variety of programs, including a grants program, a national-level educator training program, fellowships for graduate and undergraduate students, and the President's Environmental Youth Awards. The education office at EPA began operations in 1992, with a budget of $6.5 million and a staff of six people to implement these programs and other initiatives (Potter 2010, p. 23).

It is through the legislation of law that such diverse and comprehensive programs such as Project WILD, have succeeded, grown, and crossed borders to become adopted within Canadian provinces, and schools internationally. Through the support of the NEEA $45 million in federal funds have been awarded to non-profit organizations and education agencies and a national educator program providing systematic training and long-term support for educators became available, offering them $30 million in federal funds (Potter, 2010). Unfortunately in 1996, the NEEA expired; however, due to an increased awareness of environmental issues and sustainable development, many of these programs and mandates continue today through small grants, teacher training and fellowship opportunities (Potter, 2010).

While some continue their efforts to renew the NEEA, others move towards introducing new legislation, such as the No Child Left Inside Act, which has been proposed as an amendment to the Elementary and Secondary Education Act (also known as No Child Left Behind Act). If passed, this act intends to fund training and provide support for teachers, provide incentives for states to develop State Environmental Literacy Plans, as well as to integrate Environmental Education across core subject areas (National NCLI Coalition Website).

Such initiatives in the United States may continue to struggle for gaining federal support in terms of funding; however, the movement itself has increased involving student, educator, and citizen awareness and support for environmental education. According to Potter, "95% of the public supports EE's being taught in schools", (2010, p. 26).

Challenges of Environmental Education

Since 1992, environmental education and awareness have taken immense strides in the public sector; however it is still important to recognize some traditional barriers to Environmental Education. According to Fox & Carpenter (1992), Environmental Education is often "considered a peripheral subject, and as one best handled within the science curriculum,

even though environmental concepts are interdisciplinary and multidisciplinary in nature" (p.410). The misconception of EE being solely science based in learning has proven to be a difficult barrier to surpass. Among other barriers identified in a study conducted by Ham & Sewing in1988, (as cited by Fox & Carpenter, 1992), were conceptual barriers, such as "teachers not understanding what environmental education is and where it fits into the curriculum" (p. 413); logistical barriers, such as "lack of time, lack of equipment, unsuitable class size, and so forth" (p. 413); educational barriers: "lack of teacher training in environmental education" (p. 413); and attitudinal barriers: "teachers having negative attitudes about environmental education or science in general" (p. 413). This is a study conducted nearly twenty five years ago, but many of the barriers continue to ring true today.

Contemporary Issues and Opportunities Professionalizing the Field

Among contemporary issues in the field of Environmental Education, Marcinkowski (2010) suggests a continued effort to "expand and make use of the range of professional development opportunities within the field ...particularly as the field continues to grow in numbers and in different directions" (p.34). Since the development of the Environmental Education movement, there have been many professionals from diverse fields that have dedicated themselves towards the spread of environmental information and involvement; however, professionalizing the field of Environmental Education itself is now possible and, as some would say, necessary. Professionalism designates responsibility as well as liability, which is especially important when considering Experiential Education and outdoor activities. This is not only a comfort to the parents of students and participants, but to the educators themselves, offering security and a high standard of training. As outlined by Moore & Driver (2005), "a profession is commonly defined as an area of expertise founded on an empirically supported body of knowledge" (p. 22). Some writers also like to add that most professions are organized in one or more professional organizations which exist

1. To advance professional knowledge, and promote and publicize professional activities
2. To determine subject areas in which a person must demonstrate satisfactory training before admittance to the professional organization is granted
3. To set up licensing procedures, including tests of professional knowledge
4. To establish codes of ethics for the profession (Moore & Driver, 2005, p. 22)

The Environment Society Disconnect

In a 2010 article published in the Journal of Environmental Education, Barry describes the current relationship between people living in western societies, such as Canada, and the natural environment. "In the Western world, a paradigm has come to dominate that sees *environment* treated as one extreme of an oppositional binary. In this binary, *environment* is balanced in opposition to, rather than interdependent of, *society*" (Barry, 2010, p. 116).

> This paradigm, which I call the *environment/society disconnect*, infiltrates the secondary school system, leading to serious deficiencies in how students understand the social dimensions of environmental problems. The environment/society disconnect has been imagined and re-imagined by various philosophers, ethicists, historians, ecofeminists, and environmental educators (Barry, 2010, p. 116).

Not uncommon, many children grow up surrounded by little greenery in their urban neighbourhoods and if lucky, may experience once or twice in their lifetime a National Park. As a result of this environment/society disconnect, many others, including Richard Louv who coined the "Nature Deficit Disorder" (Louv, 2008), believe that today, people of western societies, and especially the youngest generations, are becoming physically and mentally disconnected from the natural environment.

The Humanization of EE

In *Reflecting on Environmental Education: Where Is Our Place in the Green Movement?* Strife (2010) "calls for a reflection on environmental education's presence within the budding sustainability movement and calls for the humanization of environmental education discourse and pedagogical practice" (p. 179). He also describes the "human benefits of becoming more sustainable versus the over-used environmental doomsday narrative" (Strife, 2010, p. 179) and emphasizes the advantages of directly relating Sustainable Development to positive outcomes specifically to the benefit of humans. As cited by Strife (2010, p. 181),

> Research shows that "positive, informative strategies" are far more effective at encouraging behaviour change than "negatives strategies which employ messages of fear, guilt or regret" (Sheeran, 2006) In fact, negative environmental messaging may do more to promote eco-anxiety/phobia and environmental apathy than engagement in environmentally responsible actions (Dickinson, 2008; Sobel, 1999).

More anthropocentric than ecocentric, this strategy is aimed first toward the behaviour and attitude change of mankind, then secondly toward a deeper and more comprehensive understanding of sustainability for social, economic, and natural environments, eventually realizing the interconnectedness of man and nature as the bigger picture in the end of the lesson.

Conclusion

Over twenty years of developing Environmental Education, and now, Education for Sustainable Development, in North America, many strides have been taken to spread awareness, information, and encourage community involvement. Some traditional and contemporary issues may not apply to all states, provinces, programs, or communities, but these challenges must be considered when searching for a more efficient and effective way towards Environmental Education.

Provincial Frameworks for Environmental Education

The following reports have been written by the Canadian Ministers of Education Council (CMEC), in response to Canada's commitment to the UN Decade of Education for Sustainable Development. These are the most recent reports of progress towards Education for Sustainable Development programs and activities by province.

Nunavut

Although there are no specific policies supporting Education for Sustainable Development in the territory of Nunavut, the Response to the UNESCO Questionnaire states:

> The document *Inuuqatigiit: The Curriculum from the Inuit Perspective* lays the foundation for education in Nunavut by stressing the very specific and unique set of relationships by which Inuit have lived. The fundamental belief is that the connectedness that individuals feel, both to each other and to their environment, ultimately determines their character and their value to the community. Sustainable development in its broadest definition is a core value of Inuit life and thus is becoming the foundation of education in Nunavut (2006, p. 4).

Northwest Territories

As outlined by the CMEC Status Report (1999), "there are no specific policies to address the concept of educating for sustainability; however the concept of sustainability in the current Science and Aboriginal programs (Dene, Kede, and Inuuqatigiit) is implicit throughout the program of studies" (p.14). More recently stated by the Response to the UNESCO Questionnaire:

> The Government of the Northwest Territories has policies related to sustainable development that guide all major development in the territory. These policies are primarily generated by the Department of Environment and Natural Resources. There are significant reflections of the principles of environmental sustainability throughout both traditional Aboriginal education programs and the social studies and science curricula that all students follow (2006, p. 3-4).

Yukon

"In the Yukon, there are no policies developed or directives specifically addressing the educating for sustainability concept" (CMEC, Status Report, 1999).

British Columbia

As written by the CMEC Status Report, "although there are no formal policy documents related to the concept of educating for sustainability, concepts related to "Environment & Sustainability" have been integrated across all new BC curricula since 1995" (1999, p. 10-11). In the 2010 Pan-Canadian ESD Framework report, *Summary of Education for Sustainable Development Jurisdictional Activities*, British Columbia currently reports that "ESD is reflected in ministry policy documents" and "assessment of key ESD knowledge themes in Grades 10-12 is made through provincial exams" (Appendix, p. 1).

Alberta

According to the Response to the UNESCO Questionnaire (2006), "Alberta does not approach sustainable development on a sector-by-sector basis, but rather integrates sustainable development as a whole" (p. 2). Also stated in the 1999 CMEC Status Report, "no specific policies have been framed to address the concept of educating for sustainability"; however, "the

concept of sustainability is implicit in the statement of basic education and in authorized programs of study" (p. 10).

Saskatchewan

> In Saskatchewan, education for sustainable development has become part of the curriculum in science, history, and social studies. Along with some of the other provinces and territories, Saskatchewan will be implementing the *Pan-Canadian Science Framework*, which addresses sustainability and encourages students to engage in related projects in their communities. (Response to the UNESCO Questionnaire, 2006, p. 4).

As stated in the 1999 CMEC Status Report, "the Saskatchewan Department of Education has no formal policy on Sustainability Education" (p. 16). Although there continues to be a lack of ESD policy for the province, in the 2010 Pan-Canadian ESD Framework report, *Summary of Education for Sustainable Development Jurisdictional Activities*, Saskatchewan currently reports that "school divisions are encouraged to be more environmentally friendly in all their decision making" (Appendix, p. 3).

Manitoba

According to the CMEC Report on Indicators of ESD (2007, p. 10-11),

> The province of Manitoba has been particularly active in all aspects of education for sustainable development. The Manitoba Department of Education, Citizenship and Youth has developed a provincial *Education for Sustainability Action Plan (2004–2008)* to foster teaching and learning for sustainability in elementary and secondary classrooms. The Action Plan includes Sustainable development concepts integrated into new curricula:

- Teacher training workshops and other projects that enhance teaching and learning for sustainability, such as the UNESCO Associated School Project Network and Youth Taking Action.
- Web sites focusing on ESD.
- Grants for educators to collaboratively plan, develop, and implement sustainability focused curriculum units.
- Information, best practices, and learning resources focused on sustainability education identified and shared.
- A provincial Education for Sustainable Development Working Group established to create a culture for education for sustainability in Manitoba
- Benchmarking and tracking of sustainability literacy in the Manitoba curricula

Ontario

As stated in the CMEC Status Report "although there are no specific provincial policy documents written to address the concept of educating for sustainability, the concept of sustainability has been integrated within the Ontario provincial curriculum policy documents" (1999, p. 15). Most notably,

> As part of the diploma requirements for graduation all students must now complete 40 hours of community involvement activities. This community involvement requirement is designed to encourage students to develop awareness and understanding of civic responsibility and of the role they can play in supporting and strengthening their communities" (CMEC Status Report, 1999, p. 15).

As well, "Ontario has developed, with partners, a grade 12 two credit, interdisciplinary studies course entitled Environmental Sustainability and Internet Technology: The Hurley Island Project" (CMEC Status Report, 1999, p. 51). The Hurley Island Project is a program that selects two students from each province and territory, who will "exchange views on local, national, and global sustainability issues, while exploring ways in which Internet technology can facilitate the sharing of information" (CMEC Status Report, 1999, p. 52).

Québec

In Québec, a plan for sustainable development and an action plan and strategy related to biodiversity were announced in late 2004. All of Québec's ministries, including the Ministry of Education, Recreation and Sports, are involved in the plan for sustainable development with the goal of improving the quality of life for all through coordinated and focused activities. A public consultation will precede the finalization of the plan (UNESCO Questionnaire Response, 2006).

New Brunswick

According to the CMEC Status Report (1999, p. 13),

> The Premier's Round Table on the Environment and the Economy in 1990 released *Towards Sustainable Development in New Brunswick: A Plan for Action.* Section 2 of that report underscores the vital role that public education and information must play in fostering a move toward sustainable development.

Since the release of New Brunswick's *A Plan for Action*, several projects have been created and established within the province, including the incorporation of Ontario's Hurley Island Project. New Brunswick has created initiatives such as Sustainable Communities, which is funded by the Department of Fisheries and Oceans and focuses on educational components, as well as Destination Conservation, a program where students conduct energy audits for their school. Also, as stated by the CMEC Status Report,

> The Tantramar Wetlands Centre (TWC) - Tantramar High School in Sackville, N.B. has developed a community based centre of excellence in wetlands education providing innovative, experiential programming for students, teachers, local residents and visitors to the Tantramar region. TWC's mission is to promote the value of wetlands, teach the importance of biodiversity and educate the public to understand the need for sustainability in the way we live (1999, p. 50).

Incorporating such a widespread approach, the many schools in the province of New Brunswick are involved in additional Environmental Education programs such as the Seeds Project, Project WILD and the Green Wings Project (CMEC Status Report (1999, p. 50).

Prince Edward Island

> Prince Edward Island has a *Sustainable Resource Policy* that provides policy direction to all government departments with the goal of uniting their efforts to manage and safeguard the province's natural resources. Education at all levels is an essential component for building this sustainable future. For example, the Department of Education is currently developing and implementing a provincial curriculum in science, social studies, and health that contains specific outcomes and learning opportunities related to sustainability, stewardship, and the environment. This curriculum will be implemented and maintained within the provincial educational system over the life of the DESD (UNESCO Questionnaire Response, 2006, p. 2).

Nova Scotia

In the 2010 Pan-Canadian ESD Framework report, *Summary of Education for Sustainable Development Jurisdictional Activities*, Nova Scotia currently reports that "ESD is reflected in several policy documents in Nova Scotia" and " ESD outcomes are addressed in various curricula at all grade levels" (Canada, 2010, Appendix p. 7).

Newfoundland and Labrador

> According to the Indicators Report (2007),
> The Newfoundland and Labrador Department of Education has developed a strategic framework to promote education for sustainable development on multiple levels. This strategy includes active participation from both the public and private sectors, and builds on existing programs that promote the principles associated with sustainable development (p.10).

As stated in the Response to the UNESCO Questionnaire (2006):

> Of particular significance is the development of a new environmental science course in collaboration with the Department of Environment and Conservation, which involves five other federal and five provincial departments/agencies. This unique approach to curriculum development has the potential to initiate a nation-wide program of environmental science education that will provide students in every region of Canada with relevant, local examples of the key principles of sustainability (p.2).

EE Networks and Resources in Canada

Canadian Model Forest Network

"Canada's Model Forest Program, initiated by the Canadian Forest Service, brings local, national, and international partners together to find new ways of managing forests sustainably" (CMFN, 2011, www.modelforest.net). As stated on the website, "a Model Forest is a hands on laboratory in which leading-edge management techniques are researched, developed, applied, and monitored. It encompasses a working-scale land base where participants have a direct interest in, and influence on, uses in the forest" (CMFN, 2011, www.modelforest.net). This

program involves over five hundred organizations and over two hundred communities across Canada.

Green Teacher

Published in Toronto, Ontario, "*Green Teacher* is a magazine that helps youth educators enhance environmental and global education inside and outside of schools" (Green Teacher, 2011, greenteacher.com). This magazine focuses on the communication of quality EE resources, educator networking, and most recently, the creation of Green Teacher Webinars, bringing in professionals from across the country. Since its establishment, Green Teacher has published six books, *Teaching Green: The Elementary Years*, *Teaching Green: The Middle Years*, and *Teaching Green: The High School Years*, as well as *Greening School Grounds*, *Teaching about Climate Change*, and *Des idées fraîches à l'école*.

Project WILD

First establishes in the United States, Project WILD has been adopted in Canada through the Canadian Wildlife Federation, and is one of the most sought out, successful EE programs in Canada, and is now in its 15th year of operation. According to the national website, "Project WILD is designed to be infused into mandated curriculum subjects, such as art, health, language arts, math, music, physical education, science, and social studies" (CWF, 2011, www.cwf-fcf.org). Offering workshops throughout the year to educators, delivered by provincial and territorial coordinators and leaders, Project WILD has reached eighty-five thousand educators (CWF, 2011, www.cwf-fcf.org).

Canadian Network for Environmental Education and Communication (EECOM)

A Canadian national and bilingual network for Environmental Education, EECOM is multidisciplinary in nature and works with provincial groups to support and "develop competency in educators, communicators, learners, and consumers" (EECOM, 2011, www.eecom.org). EECOM also hosts annual conferences, sponsors Awards in EE Excellence, and hosts leadership clinics throughout the year.

Conclusion

Canada, as a country, as well as most of the provinces and territories, either have a well developed idea, a set of guidelines and learning outcomes, or guidelines to what should consist of Education for Sustainable Development, and an Environmental Education program. What now must be considered and become a focus in the second half of the UN Decade for Sustainable Development is the development of policies to support such ideas.

An Environmental Education Discourse

Speaking with Educators

Tom Philpott, Co-Author of *Where Continents Collided* (1999) is a university lecturer, and Secondary Educator of 30 years, who participated in an interview on March 15th, 2011, for the purposes of this paper. Focusing primarily on Philpott's experiences as junior high school teacher, questions were directed towards the flexibility of working in a traditional classroom with

specified learning outcomes, and the challenges as a co-author of a comprehensive Environmental Education Curriculum. According to Philpott,

> One of the things that I always wanted was to have something that was always active, where the kids were actually doing stuff. We have had other people that didn't see it that way, they were more interested in budgeting things, we got to make things work in a certain place, rather than adapt to it. The overall hardest part was getting people to agree on what the actual content to the activities would be. I found that to be extremely frustrating. I'm sure all the other authors would probably say the same thing. You got to get out of what my favourite things are, and look at things that always are more active and intuitive and kids react to better. It became consensus building. With kids it has to be more cerebral, and more hands on (03/15/11).

Often, Philpott found that others expected far higher outcomes than were appropriate for the age group in question.

When asked if Philpott ever had any opportunities to incorporate experiential based education, or hands-on experiences within the traditional curriculum outcomes of secondary education, he replied that it was totally dependent on the ambitions of the individual teacher.

> Everyday, that was my experience. Especially I found in your classrooms you have such a range of kids with abilities, and if you stick to something that is book oriented your know some kids are having a good time, because they succeed at it, even though sometimes they don't like it, but they do succeed. There is one thing about an outdoor experience every kid is going to get something, they may not learn what you want them to learn, but they are going to learn something (03/15/11).

Discussing the advantages of field trips and outdoor experiences with a class, Philpott also explained the challenges and difficulties.

> Everyday I could get out they are out. I arranged hundreds of field trips because I think that's how they learn. And now that takes its toll. A lot of administrators don't go for that, but it's the only way to learn really. That will be the limiting factor, how much energy the person has. And you know I can remember from my first days teaching, it was down to the shoreline. I always did that stuff so it wasn't abnormal for me but for someone who doesn't have that experience. Especially in the science area, they are not very comfortable, even the math. Once they realise how easy it is, it becomes easier (03/15/11).

Margaret McKeon is an Outdoor Education Coordinator for the Camp Killdevil program in Gros Morne National Park, Newfoundland and an Education for Sustainable Development Teacher at Humber Elementary, Western School District of Newfoundland. On March 7th, 2011, McKeon participated in an interview for the purposes of this paper.

The Camp Killdevil program is a residential Environmental Program based on Outdoor Education, and follows traditional curriculum outcomes in an outdoor setting. Created in 2004, the program involves 74 schools and approximately 14,737 students. The philosophy of the program includes "curriculum enrichment and application, recreation skills and outdoor pursuits, and socialization experience and group development" (McKeon, 10/08/09).

Mainly working with grade five students, McKeon mentioned a focus on interaction with the outdoors and introducing students to their local natural environment, rather than scientific facts and literacy components as the main outcomes to the program. An essential part of the residential program is the direct involvement of classroom teachers that are virtually responsible for the majority of lesson delivery. Given a script and short lesson plan, the teachers gain considerable confidence and have an overall positive learning experience themselves. When asked if the participating teachers have a sound understanding of current environmental and sustainability issues that exist in North America, McKeon responded,

> It really varies a lot, and probably for the most part not. I think they are still just learning it, and a lot of times their students may even have a greater understanding in some ways of some of the stuff, because that is the environment they are growing up in now (03/07/11).

When asked about the growth and development of the Camp Killdevil program, McKeon revealed plans for a Labrador program, as well as developing storyline learning within the current curriculum. McKeon would like to further integrate a more holistic, environmental ethic based lessons, to make the program more cohesive for its young learners.

The Atlantic Coastal Action Program (ACAP) is a heavily community-based coastal management initiative that has been in operation since 1991. According to Ellsworth et al.,

> Coalitions of local stakeholders have been assisted by government in taking a lead role for the planning and management activities in 13 coastal ecosystems throughout Atlantic Canada. The program was initiated and originally facilitated by the federal government (Environment Canada) but has come to be led and owned at the local level. The objective is to have all those affecting and/or affected by local decisions involved in this process. (1997, p. 121).

Sheldon Peddle is the Executive Director of ACAP Humber Arm, where the main office is located in Corner Brook, Newfoundland, and participated in an interview on his Environmental Education programs for the purposes of this paper. When asked about his own personal experiences in the development of his environmental attitudes, Peddle responded how he had always been interested in the outdoors, in the environment, how he had learned through doing and observing. This attitude that Peddle developed in his childhood and adolescence has lead to the ACAP Humber Arm philosophy of an interactive learning experience. During the interview, Peddle commented "we don't want it to be classroom based, let's get the kids out of the classroom, up and moving, get them interacting. Seeing stuff, doing stuff" (03/03/11).

One of the major challenges Peddle faces as a program administrator is the struggle with funding. As stated by Peddle (03/03/11),

> From a number of perspectives you look at funding in terms of larger organizations, government funding, or these large private funding organizations that can dish out bigger dollars over longer periods of time. Most of those organizations will not fund education or communication, public awareness type of work. They are more interested in how many trees did you plant. How many kilometers of beach did you clean up? Something that is more measurable. How many kids did you educate, means squat to them. So quite often if you are designing a funding program you have to almost make the education component secondary to the action component for a lot of these organizations.

Peddle also distinguished between two types of funding and support. As mentioned, large organizations (governmental, or non-governmental) can play huge roles in the success of Environmental Education programs, however Peddle also emphasized the importance of continuity of the programs, which comes from the support of the local community.

> In terms of having them (local businesses and communities) as funding partners for Environmental Programs, is the sustainability piece. They may contribute x amount this year, there is no guarantee they will contribute the same amount the following year. Being able to find the funding that allows you to put a program in place and know that you will be able to offer it every year, for the next 5/6, years. Funding is the biggest challenge. Support from school boards, support from teachers, support from parents, interest in students, it's all there. They're really desperate for the programming but trying to find the funding for it is a real challenge (03/03/11).

Discussion: Lessons from Speaking with Educators Development of Personal Attitudes

After speaking with three Environmental Education leaders within the community of Corner Brook, Newfoundland and Labrador, it became obvious of just how important a role childhood experiences played in the development of positive environmental attitudes. During the individual interviews all three interviewees stated that their experiences growing up led them to be heavily involved in Outdoor and Environmental Education today. As a highlighted theme in the recent and award winning publication *Last Child in the Woods* (Louve, 2008), due to urban sprawl and increasing public hyperawareness of criminal danger, it is no longer acceptable to allow children un-structured and un-supervised play time in natural environments, therefore, the need for Environmental Education to be strongly rooted within public school systems is imperative.

Challenges as EE Leaders

Although the interviewees held different positions in regards to Environmental Education programs, all mentioned within their interviews on the challenges of working with many different stakeholders. While community involvement and a wide range of participants may be a key component to the success of an EE program, it does not come without its challenges in dealing with contrasting personalities, ideas, as well as abilities to commit to programs (particularly in a financial sense). In perspective, these are also challenges of the Bottom-Up Approach. Over years of citizens, community leaders, educators, and students, coming together to create incredible Environmental Education programs, it is now time for federal and provincial governments to help such initiatives that were encouraged to support Education for Sustainable Development to become fully integrated with the public school system, aiding financially and logistically.

The Importance of Developing Policies

After revision of the progress since 1992, Canadian provinces and non-governmental organizations have made great strides in moving towards Education for Sustainable Development and the implementation of Environmental Education. In 1997, the Canadian

Ministers of Education Council "formalized the inclusion of sustainable development on Canada's educational agenda", in 2002 reported on "Canada's progress in education for sustainable development in *Education for Sustainability: The Status of Sustainable Development Education in Canada*", and in 2008, "established the Education for Sustainable Development Working Group (ESDWG)" (CMEC, 2010, p. 8). However, as stated by Pigozzi (2010):

> For a movement to take hold it needs consistency and coherence in relation to these values, starting with and modelled by leadership at the top. The UN family has many priorities and challenges, many audiences and intended beneficiaries, and these sometimes mean that consistent attention to supporting and enabling actions such as the implementation of the DESD is extremely difficult (p.265).

As outlined in the *Developing a Pan-Canadian ESD Framework for Collaboration and Action,* background paper, many provinces currently incorporate ESD in all levels of education, for example, yet, this may be considered too general of an approach by some. To continue progress towards true Education for Sustainable Development, provinces must start to develop specific Environmental Education learning outcomes that are clearly identifiable by both educators and students.

Recognizing the Advantages

While creating policies to support Environmental Education and allow for the continuation and sustainability of the programs themselves, it is important to recognize the accomplishments and advantages of state and province level organizations.

> These EE organizations and programs provide networking opportunities, professional development opportunities, and other resources to support achievement of environmental literacy goals at the local, state, regional, and national levels. Additionally, EE organizations function as hubs for environmental education resources and seek to form partnerships on multiple levels, including between the public, nongovernmental organizations, and governmental organizations (Smaldone, 2010, p. 159).

With the development of province level policies, one can aspire to strengthen such networking opportunities and professional development, and in the end, reach out to many more students and educators, creating a new system and paradigm for future students, and future Canadians.

Increasing Sustainability, Accessibility, and Usability of EE programs

When asked whether Canada could agree on establishing national policies supporting EE, Pamela Courtenay-Hall replied "sometimes the best way to answer (Can we?) is to go ahead and try" (Courtenay-Hall & Lott, 1999, p.84). This is essential for there continue to be areas, and even provinces and territories where Environmental Education is not present in areas where educators may not be aware of available resources and networks. As written by Comishin, Dyment, Potter, and Russel (2004):

> Teachers who dream of starting an integrated program in the public system generally understand the program's potential value, and while some anticipate the barriers to successful program development and implementation, many do not know of the resources and strategies available to help overcome these barriers (p. 48).

Although the Federal Government has made efforts to encourage EE within school boards, they have lost focus on the programs that are created in local communities or for the local communities, who desperately need their support. While it is important to integrate EE through both the public school systems, and through community initiatives, there must be one underlying commitment to supporting such programs, including a specific federal and provincial budget. Currently collaborating federal and provincial departments, there must also be a shift in collaborating government departments with the non-governmental organizations, to create successful Education for Sustainable Development programs.

The main goal should ultimately be, increasing accessibility and usability of such programs to educators. As stated by Philpott (03/15/11),

> I've always said if you are going to get a teacher to do anything, they have to go back with the complete package, ready to go. Not go back with a good idea and have to develop it themselves. The goal I wanted was to have everything in the book that the teacher needed to copy. That became some budgetary conflicts because some people wanted to cut things, just to keep it small, but I think we won out in the end.

Conclusion

In conclusion, it is necessary for the federal government to implement a set of policies and delegation of funding to each province and territory towards Environmental Education programs and Education for Sustainable Development outcomes. It is then up to each province and territory to integrate such programs and outcomes into their own unique education systems and community initiatives. The end result of establishing policies leads to accountability, and responsibility. These are concepts which founded our country. On the subject of What Education Must Be For, David Orr (1991) wrote:

> All education is environmental education. By what is included or excluded we teach students that they are part of or apart from the natural world. To teach economics, for example, without reference to the laws of thermodynamics or those of ecology is to teach a fundamentally important ecological lesson: that physics and ecology have nothing to do with the economy. That just happens to be dead wrong. The same is true throughout all of the curriculum.

This is what citizens of the twenty-first century, must understand. That it is not just, a good idea, or progressive thinking, to incorporate lessons on environmental issues or sustainable development into public school curriculums and support community projects. It is essential, in order to envision a sustainable future.

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Appendix

Interview Questions for: An Environmental Education Discourse

Sheldon Peddle
Executive Director
ACAP Humber Arm

Short Answer Questions:

1. How long have you held you position as Executive Director for ACAP Humber Arm?

2. Do any of your programs require a registration fee?

3. Do any of your programs actively involve the teachers, learning facilitators, or parents of the participating students?

Open-Ended Questions:

1. What are your personal experiences in the development of your own environmental attitudes?

2. Please describe your major challenges as an Environmental Education Coordinator and Administrator.

3. Do you feel participating teachers and learning facilitators have a sound understanding of current environmental and sustainability issues that exist in North America?

4. Have you noted any changes in the interest and motivation towards environmental education of participating teachers and learning facilitators after completion of the program?

5. As value systems and ethical decision making are integral aspects of Environmental Education, do you consider traditional curriculum outcomes geared towards these lessons?

6. What do you see for the future of your Environmental Education program in regards to growth and development?

Margaret McKeon
Outdoor Education Coordinator
Education for Sustainable Development Teacher
Humber Elementary, Western School District

Short Answer Questions:

1. How long have you held you position as Executive Director for ACAP Humber Arm?

2. Do any of your programs require a registration fee?

3. Do any of your programs actively involve the teachers, learning facilitators, or parents of the participating students?

Open-Ended Questions:

1. What are your personal experiences in the development of your own environmental attitudes?

2. Do you feel you are well informed of the current environmental and sustainability issues that exist in North America?

3. Please describe your major challenges as an Environmental Education Coordinator.

4. Do you feel participating teachers and learning facilitators have a sound understanding of current environmental and sustainability issues that exist in North America?

5. Have you noted any changes in the interest and motivation towards environmental education of participating teachers and learning facilitators after completion of the program?

6. What do you see for the future of your Environmental Education program in regards to growth and development?

Tom Philpott
Co-Author of *Where Continents Collided*
University and Secondary Educator

Open-Ended Questions:

1. What are your personal experiences in the development of your own environmental attitudes?

2. Do you feel you are well informed of the current environmental and sustainability issues that exist in North America such as resource depletion, energy consumption, and accumulation of greenhouse gasses?

3. When teaching in a secondary classroom, do you have the opportunity to expand on course material and/or modify learning outcomes to incorporate lessons on sustainable development or environmental literacy?

4. When writing *Where Continents Collided*, what were your hardest challenges?

5. Do you ever have opportunities to incorporate experiential based education, nature play, or hands-on experiences within the traditional curriculum outcomes of secondary education?

6. Does your school contribute in any way to the development of a sustainable society environmentally, socially, or economically?