The First Step Towards Sustainability: The Practices and Implementation of Environmental Education by Educators in Ontario

By

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Abstract

Environmental Education is a powerful tool for bringing awareness and promoting future led sustainable goals throughout Ontario. Unpacking its complications and barriers can help us make improvements toward sustainable future objectives. The decisions we make about education facilitate our ability to restore planet Earth (Chiarotto, 2011). The field of environmental education in Ontario is evolving (Kransy, Lundhom & Plummer, 2010) along with pedagogical approaches, which encourage children to participate in global awareness, sustainable living, and active citizenship (Telero, 2004). This research study sought to answer: How do educators implement an environmental education program in an Ontario classroom? Semi-structured interviews were conducted with four educators who currently teach in an elementary or secondary classroom and one administrator at the elementary level. Rich data were gathered, coded, and analyzed using a constructivist framework to explore how educators implement environmental education in classrooms. Various themes emerged. For example, *Pedagogical Practices* was a predominant theme, such as using experiential outdoor learning, making connections, and promoting change beyond the classroom. This study reveals the importance of implementing environmental education in classrooms that have significant implications for teaching practices.

Key words: *Environmental Education, Sustainability, Pedagogy, Place-Based Education, Ontario Curriculum, Environmental Stewardship*

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CHAPTER 1: INTRODUCTION

Introduction to Research Study

Earth is experiencing environmental change on an unprecedented scale. At no previous point in our history has there been a profound concern for the environment. Environmental concern has become one of the most enduring social themes in our society. It is mobilizing scientific innovation, collaboration, and international treaties in pursuit to further sustainable development objectives at both global and local scales. Perhaps the rise of concern is associated with pressing environmental challenges that people encounter in their daily lives. Around the world, surface and subsurface water pollution, climate change, loss of biodiversity, invasive species, air pollution, and catastrophic depletion of resources are worsening (Kingsford, Watson, Lundquist, Venter, Hughes, Johnston, Atherton, Gawel, Keith, Mackey, Morley, Possingham, Raynor, Recher, & Wilson, 2009). However, reaching towards a sustainable future in any community requires motivation and major shifts in peoples' attitudes towards the environment.

David Orr argues that the decisions we make about education facilitates our ability to restore planet Earth (Chiarotto, 2011). In 1987, the Brundtland report from the World Commission on Environment and Development stated that education was the focal point in its agenda and that "the changes in human attitude that we call for depend on a vast campaign of education, debate, and public participation" (Palmer, 1998). Education can be a powerful tool in bringing awareness and promoting future led sustainable goals and unpacking the complications and barriers of sustainable development.

During the 57th meeting in December 2002, the United Nations General Assembly declared the United Nations Decade of Education for Sustainable Development (DESD). The DESD aimed to:

> integrate values, activities, and principles that are inherently linked to sustainable development into all forms of education and learning and help usher in a change in attitude, behaviours, and values to ensure a more sustainable future in social, environmental, and economic terms. (United Nations Education, Scientific, and Cultural Organizations, 2007, p. 5)

By building on this powerful declaration, there has been a proliferation of calls (provincially, nationally, and internationally) for a stronger emphasis on educating children about the environment, for the environment, and in the environment (Working Group on Environmental Education, 2007; Tan & Pedretti, 2010).

Fortunately, the field of environmental education in Ontario is evolving (Kransy, Lundhom & Plummer, 2010) along with pedagogical approaches, which encourage children to participate in global awareness, sustainable living, and active citizenship (Telero, 2004). The Ontario Ministry of Education has recently completed an extensive review of its social studies and science and technology curriculum at the elementary and secondary levels (Ontario Ministry of Education, 2007, 2008a, 2008b, 2013). This review has resulted in an emphasis on the environment and a science-technology-society-environment (STSE) approach (Tan & Pedretti, 2010) within the ministry-mandated curriculum documents. A sustainable future depends on the next generation to gain knowledge, deep understanding, and commitment toward environmental practices; this way, it can positively influence their earth, their tomorrow, and their future.

This research study will use the following definition of environmental education as outlined by the Ministry of Education (2009) document *Acting Today, Shaping Tomorrow:*

> Environmental education is education about the environment, for the environment, and in the environment that promotes an understanding of, rich and active experience in, and an appreciation for the dynamic interactions of:
>
> - Earth's physical and biological systems
> - The dependency of our social and economic systems on these natural systems
> - The scientific and human dimensions of environmental issues
> - The positive and negative consequences, both intended and unintended, of the interactions between human-created and natural systems (p. 4)

Purpose of the Study

Environmental degradation has generated questions towards the evaluation of human practices on the environment. Educational institutions have been the grounds for spurring environmental change. Ontario educators across all disciplines are mandated to provide students with an exposure to environmental concerns as part of the curriculum (Ministry of Education, 2009). It is a challenge for educators to include environmental education if they have not had any prior pre-service training on the topic. It is also challenging to teach students how to understand the complexities of nature from ordinary concrete classrooms.

To understand the complexities of nature in the environment, educators have to teach students the interdependency between humans and nature. Educators need to replace teaching the 'concept of nature' to the interconnectedness of humans and their natural environments (Smith & O'Keefe, 1980, p. 34). According to Smith and O'Keefe (1980) nature can be defined in three

ways. First, nature is something that is objectively real. This means in nature there is a limit to growth and its sustainability for human production (Smith & O'Keefe, 1980). Second, nature can be defined as areas that are altered by human interaction and is external to human nature (Smith & O'Keefe, 1980). Third, nature can be complex because of its intricate inter-connection between things (Smith & O'Keefe, 1980). In order for students to assign a value to nature, they need to have interactions with their environment. I believe that a student's interactions with nature are culturally specific, socially constructed, and socially differentiated. Many students in the earlier part of their lives learn to associate "nature" with explorations towards their external environments; this includes going to the forest, enjoying pristine lakes, hiking, or camping. This definition depends on the experiences that is exterior to urban environments. However, many students may not have had the opportunity to explore such external environments. The process of urbanization that favours development has resulted in a reduction and minimal access to green spaces. Without teaching students the implications of development and its impact on environments, environmental stewardship may not be practiced. By assigning values to environments and learning the impacts of human interactions, students may become more observant and motivated towards environmental change.

I have found it challenging to find existing empirical studies mapping pedagogical practices of environmental education in Ontario classrooms. In this phenomenological study, I will respond to the lack of sufficient empirical research and discuss the implementation of an environmental education program in an Ontario classroom. The purpose of this study is to examine the current pedagogical practices of implementing an environmental education program

in an Ontario classroom. I will examine five environmental education programs at the elementary and secondary level from a local Toronto District School Board.

Research Questions

The primary research question of this study is as follows: *How do educators implement an environmental education program in an Ontario classroom?* The secondary sub-questions of this study are as follows:

1) What are educators' perspectives about environmental education?
2) What strategies are being employed when implementing an environmental education program in a classroom?
3) What specific challenges do educators face when implementing an environmental education program in a classroom?
4) How can we better support educators to implement an environmental education program in the classroom?

Background of the Researcher

I am a teacher candidate in the Master of Teaching program at the Ontario Institute for Studies in Education at the University of Toronto. My undergraduate degree is in Environmental Science, Biology, and Geography from University of Toronto. All three disciplines promoted awareness for sustainable living in communities. My journey and passion for the environment began in high school. I led multiple environmental initiatives such as initiating a recycling program, organizing school wide community clean ups, and promoting environmental awareness. I knew very little at that time about the impacts youth could generate towards

environmental protection. In my first year at the University of Toronto, I began to develop a deep concern for environmental issues and recognized the subsequent need to conserve biodiversity. Building on Smith and O'Keefe (1980) work, I assigned a value to nature and continued to take courses on this topic to enrich my knowledge towards environmentalism.

At the University of Toronto, I was exposed to a significant amount of quantitative and qualitative research. In my final year of undergraduate study, I wrote an undergraduate thesis on the impact of solid waste management in Bangladesh. I was fortunate enough to visit Bangladesh the following summer and gain firsthand experience of the challenges and impact of solid waste management. This experience highly motivated me to focus my current research study on environmental education. In my opinion, it is essential for future generations to see what environmental educators have seen, to know what environmental educators know and to bring about change as environmental educators do. While I acquired a strong background in environmental science, biology and geography, I am also proud and passionate towards motivating environmental action. Thus, it is my intention as an educator to bring awareness to the challenges faced on Earth in the environmental education program.

Overview

Chapter 1 of this research paper outlines the need and purpose for research on the topic, as well as specific research questions and sub-questions that guided the study. The chapter also provides a brief background of my personal interest on the topic and how I came to be involved to this aspect of education. Chapter 2 contains a review of the literature that is relevant to the topic of environmental education. Chapter 3 provides the research methodology and procedures used in this study including information about the participants, how data collection was executed, and limitations of the study. Chapter 4 identifies the research participants and presents four overarching themes based on my interpretation of data collected from five face-to-face interviews with educators within a local Toronto District School Board. Chapter 5 describes the data and addresses the research questions, discusses the findings in relation to the literature review, and the outlines the implications. In addition, recommendations for practice are discussed. The references and appendices at the end of this manuscript provide a comprehensive list of the resources and materials used in this research study.

CHAPTER 2: LITERATURE REVIEW

Introduction

There is an agreement between the Ontario Association for Geographic and Environmental Education (2010), Environmental Education Ontario (2003), and Ontario Society for Environmental Education (2010) of the need for effective environmental education programs in schools. In Ontario, environmental education is being enacted in traditional courses, advocacy activities, media programs and outdoor/nature-based programs (Pedretti, Nazir, Tan, Bellomo, & , 2012). In formal education, which is classroom-based, there remains a relatively low status of topics of environmental education even though there are avenues of identified practices of environmental education (Tan & Pedretti, 2010).

History and Development of Environmental Education

According to Palmer (1998) a few pioneer thinkers, writers, and educators of the eighteenth and nineteenth century have influenced environmental education: Goethe, Rousseau, Humboldt, Haeckel, Froebel, Dewey, and Montessori. While these notable pioneers contributed to environmental thought and practice, it was in the United Kingdom that Scottish Professor of Botany, Sir Patrick Geddes (1854 - 1933), ‘founded’ the idea of education for the environment (Palmer, 1998). Sir Patrick Geddes is regarded to many as being the first to make the link between the quality of the environment and the quality of education. Geddes pioneered instructional methods that brought learners into direct contact with their environment (Palmer, 1998).

Formulation of Definition

Definitions of "environmental education" have been formulated from various sources in the past. Some argue that the earliest appearance of the term can be traced back to a book entitled *Communities* written by Paul and Percival Goodman in 1947 (Wheeler, 1985). The term "environmental education" was also used it in Paris in 1948, by Thomas Pritchard, during a meeting at the International Union for the Conservation of Nature and Natural Resources (IUCN) (Disinger, 1983) as well as during a conference in Britain in 1965, at Keele University, Staffordshire (Palmer, 1998). The purpose of the conference was to stimulate a "conservation of the countryside and its implication for education" (Palmer, 1998, p. 5).

Despite the controversies of when the term was first used, it is internationally claimed that the United Nations Education, Scientific, and Cultural Organizations (UNESCO) attempted to define the term 'environmental education'. The term was defined in 1970 during an international working meeting on environmental education in the school curriculum at the Foresta Institute in Nevada, United States (Palmer, 1998). The commonly used definition of environmental education was formulated and adopted from this conference by both UNESCO and IUCN:

> 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 behaviour about issues concerning environmental quality. (Palmer, 1998, p. 6)

Milestones of the 1970's

Academic concerns regarding the connection between changing environments and its associated problems led to the establishment of United Nations Environment Programme (UNEP) along with UNESCO founding the UNESCO-UNEP International Education Programme in 1975 (Palmer, 1998; Tilbury 1995). In 1976, UNESCO-UNEP held its first international workshop on environmental education in Belgrade, Serbia where they produced a global intergovernmental statement on environmental education with a list of aims, objectives, key concepts, and guiding principles in a document known as, *The Belgrade Charter - A Global Framework for Environmental Education* (Palmer, 1998). This research paper supports the Belgrade Charter definition, whereby:

> The goal of environmental education is to develop a world population that is aware of and concerned about the environment and its associated problems, and which has the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively towards the solution of current problems, and prevention of new ones. (Mason, 2008, p. 34)

McKeown and Hopkins (2003) outline that environment was the key term of focus for the global framework since economic, society, and development was not mentioned. An essential feature of the Belgrade event was to hold a follow-up conference with the involvement of politicians (Palmer, 1998). Thus, it was hoped that recommendations from the Belgrade Charter would be "translated into policy at national levels in those countries where environmental education is not yet integrated into development strategies" (Palmer, 1998, p. 8).

This important follow-up conference took place in Tbilisi, Georgia, USSR in October 1977. It was UNESCO's first inter-governmental conference on environmental education, attended by 66 UNESCO member states with representatives of various Non-Governmental Organizations (NGO) (Palmer, 1998). The Tbilisi Conference prepared recommendations for the wider application of environmental education and provided the blueprint for the development of environmental education in many countries of the world today (Palmer, 1998). The final report of the Tbilisi Conference sets out three *Goals of Environmental Education*, which reflect those identified in The Belgrade Charter:

> (1) To foster clear awareness of, and concern about economic, social, political, and ecological inter-dependence in urban and rural areas
>
> (2) To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect, and improve the environments
>
> (3) To create new patterns of behaviour of individuals, groups, and society as a whole, towards the environment. (UNESCO, as cited in Palmer, 1998, p. 8)

Consolidation in the 1980's

In 1980, the IUCN, UNEP, and the (then) World Wildlife Fund (WWF) launched the *World Conservation Strategy*. This key document stressed the importance of resource conservation through 'sustainable development' and the idea that there is an interdependent relationship between conservation and development (Palmer, 1998, p. 15). The *World Conservation Strategy* included a chapter on environmental education:

> Ultimately, the behaviour of entire societies towards the biosphere must be transformed if the achievement of conservation objective is to be assure.… the longer-term task of

> environmental education [is] to foster or reinforce attitudes and behaviour, compatible with new ethics. (IUCN, as cited in Palmer, 1998)

The *World Conservation Strategy* was expanded by the publication of *Our Common Future (*World Commission on Environment and Development, 1987) otherwise known as the *Brundtland Report,* which presented a major statement on a global agenda to reconcile environment with development (Palmer, 1998). The *Our Common Future* report defines sustainable development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p.16). At an international level, 1987 was a crucial year as it marked the tenth anniversary of the first Tbilisi Conference organized by UNESCO and UNEP (Palmer, 1998). UNESCO and UNEP marked the tenth anniversary with the holding of a 'Tbilisi Plus Ten' Conference in Moscow (Palmer, 1998). They found that the three goals of environmental education in Tbilisi a decade earlier continued to be endorsed (Palmer, 1998).

The 1990s and Beyond

Debate arising from *Our Common Future* report led to a second conference of the United Nations (Palmer, 1998). This was the United Nations on Environment and Development: The Earth Summit staged in Rio de Janeiro, Brazil on June 3 - June 14, 1992 (Palmer, 1998). The centerpiece of The Earth Summit was the agreement called *Agenda 21* (UNCED, 1992). *Agenda 21* covered 40 chapters on topics ranging from the role unions and workers might play in fostering the principles of sustainable development, poverty, toxic waste, children and youth promoting education, public awareness, and training (Palmer, 1998; Springett & Foster, 2005). *Agenda 21* was a comprehensive plan of action to be taken globally, nationally, and locally by

178 governments who voted to adopt the program (United Nations Department of Economic and Social Affairs, 2015).

In 2002, the United Nations declared 2005 - 2014 as the United Nations Decade for Education for Sustainable Development (ESD) (Education for Sustainable Development Canada, 2012). There is a debate over the difference between ESD and environmental education. Researchers believe environmental education fits into the larger umbrella of ESD and vice versa (McKeown and Hopkins, 2003). Education for Sustainable Development Canada (2012) defines ESD as "formal and informal education with the goal of assisting citizens to acquire the knowledge, skills, and values they need to contribute to the development of a socially, environmentally, and economically sustainable society" (p. 12). This research study will focus on environmental education as it is embedded into the larger discourse surrounding ESD. In addition, this study exhibits evidence of an environmental education program providing some opportunities for ESD, as this form of ESD education is not mandated in the Ministry of Education documents.

Education Reform in Ontario

The global paradigm promotion of environmental education did not elude Ministry officials or the education community in Ontario (O'Sullivan, 1999). In January 1980, the Ministry of Education, the Ministry of Colleges, and Universities drew together senior staff to form the Strategic Planning Task Group to conduct environmental scans and found 80 environmental concerns in Ontario (O'Sullivan, 1999). It is very likely that the final report of the Tbilisi Conference and *The Belgrade Charter* played a critical role in the formation of the

Strategic Planning Task Group in Ontario to conduct environmental scans. In 1984, the Ontario Ministry of Education released a statement whereby:

> It argued that education must, as a system, prepare itself and its students to anticipate and to adapt to global change, and that to do so would require renegotiating the goals of Ontario's education. It recognized that global conditions, such as cultural and demographic changes, environmental changes, new employability skills, and changed roles of women in society should influence Ontario's education policy. (Ministry of Education, as cited in O'Sullivan, 1999, p. 311)

Nearly two decades after this statement the important environmental concerns consolidated its work in a report towards the new millennium.

In early 1990, educators for global interdependence in Ontario were concerned that students were unaware of the complex nature of global issues and trends including environmental change (O'Sullivan, 1999). This led to the Ontario Teachers Federation (OTF) and Canadian International Development Agency (CIDA) to mandate environment in the curriculum. The turn of this decade revealed very positive plans for the inclusion of environmental education as an officially recognized cross-curricular theme of the Ontario Curriculum (O'Sullivan, 1999). However, the nearly decade long provincial shift in Ontario which reduced the administrative authority in school boards and increased substantial budget cuts, it was responsible in depolarizing curriculum content related to the environment (O'Sullivan, 1999). Only a handful of Ontario schools managed to protect their environmental education programs and keep outdoor education centres open (Fawcett 2009).

In the 21st century, concerns over global environmental changes have resulted in a re-examination of environmental educators and their approaches towards environmental education (Krasny, Lundholm & Plummer, 2010). The field of environmental education will require strategies in addressing environmental and related societal threats to our collective future (Marcinkowski, 2010). According to Wiek, Bernstein, Laubichler, Caniglia, Minteer, and Lang (2013) the need to shift and transform the Ontario education system to establish structures and practices to meet the present and future environmental changes will continue to occur.

The Policy Framework

Since 2007, the Ontario Ministry of Education has been actively involved in publishing a number of reports that have resulted in a surge of interest in environmental education (Pedretti, Nazir, Tan, Bellomo, & Ayyavoo, 2012). To determine what policies affect environmental education programs in Ontario, Ministry of Education documents, including policy and curriculum documents will be studied. These policy documents include the Working Group on Environmental publications, *Shaping Our Schools, Shaping our Future: Environmental Education in Ontario Schools* (2007) and *Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools* (2009). The policy framework will be used to assess the Ontario government's effectiveness in addressing the appropriate section of the Working Group's Report and how they translate into the classroom.

Shaping Our Schools, Shaping Our Futures

Attention to environmental education came in 2007 from the Curriculum Council, which was commissioned by the Liberal government of Premier Dalton McGuinty (Ministry of

Education, 2009). The purpose of the Curriculum Council was to review a range of topics that required public consultation as part of the ongoing education reform (Canada NewsWire, 2007). The Curriculum Council first mandate was to appoint a team of six experts and practitioners in environmental studies, chaired by female astronaut Dr. Roberta Bondar called the Working Group on Environmental Education (Canada NewsWire, 2007). Leesa Fawcett, an Associate Professor in Environmental and Sustainability Education at York University states, "In Ontario, it took a Canadian women who went into space, orbited about and looked back at the Earth to shake up the educational establishment, and remind them that environment matters" (Fawcett, 2009, p. 104).

The panel was given nine weeks to release their report and recommendations to the Curriculum Council, popularly known as the Bondar Report, entitled *Shaping Our Schools, Shaping Our Futures: Environmental Education in Ontario Schools* (Working Group on Environmental Education, 2007; Ontario EcoSchools, 2010). This thorough report set our thirty-two recommendations for the Ministry of Education (Appendix D). The recommendations were well received by dedicated educators working hard to implement an environmental education program in his/her classroom (Fawcett, 2009). Each of the thirty-two recommendations is viewed "as critical and interdependent components of an integrated approach to environmental education" (Working Group on Environmental Education, 2007, p. 10). The report concluded that there was an uneven distribution of environmental education programs across the province. The Working Group on Environmental Education recommended the immediate inclusion of environmental education across all provincial school curricula (Pedretti et al., 2012).

Furthermore, The Working Group on Environmental Education provided successful approaches to teaching and learning about the environment in elementary and secondary schools (Working Group on Environmental Education, 2007). The Working Group on Environmental Education outlined that future educational policy needed to be focused on environmental education. It needed to also promote the belief that students should examine the environment across all subject areas, explore multiple environments, be immersed in an outdoor learning environment, and be taught in schools that support environmentally sound practices (Working Group on Environmental Education, 2007). The Working Group on Environmental Education indicated that leadership and accountability, curriculum, and teaching resources were the three key elements that the policy should address (Working Group on Environmental Education, 2007).

It was a significant stepping-stone for the Liberal government to commission a review of how to teach students across Ontario about the environment. I believe that the Bondar Report was successful in providing advice to the government on how to move forward with the implementation of environmental education programs in Ontario and play a positive role in the United Nations Decade of Education for Sustainable Development.

Acting Today, Shaping Tomorrow

The Bondar Report's plea to address the lack of environmental education policy, resulted in the government to respond with the *Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario School*s document in 2009. This document was produced as a result of the government's commitment to ensure environmental education be part of every students' learning and that it foster responsible environmental action throughout the

education system (Ministry of Education, 2009). The framework is divided into three goals that are similar to the three core components in *Shaping Our Schools, Shaping Our Future* document.

The policy framework states, "although there is overall agreement on principles and supporting concepts, specific goals and processes must be defined locally to meet differing environmental, social, and economic conditions that exist in Ontario communities" (Ministry of Education, 2009, p. 4). Thus, the Ministry of Education opted to create a framework document rather than an overall policy document in hopes that schools will utilize it as a guide to develop the skills and knowledge needed to implement environmental education in the context of their community (Ministry of Education, 2009, p. 4). The provincial government's rationale to create a framework rather than an overall strict policy document was to avoid conflicts with school boards within Ontario. Thus, this framework has become a guide for educators rather than a plan for action. According to Coglianese and Nash (2001) it is not a downfall that the document does not go by the authoritative title of a policy and plan of action. In Coglianese and Nash's (2001) discussion of Environmental Management Systems, they indicate that if stakeholders play a role in the development of rules and regulations, they are expected to follow and more likely to take ownership of those policies, thus resulting in compliance. As a result, allowing school boards to develop a policy that best suits their needs and resources may potentially result in more effective environmental education programs for students. It can also decrease the opportunity for conflicts to occur with the government and school boards in Ontario.

Another important viewpoint of the framework is the following statement, "environmental education must address the particular needs of students as they relate to cultural background, language, gender, ability, and other aspects of diversity" (Ministry of Education,

2009, p. 6). This important vision of the framework is articulated throughout the document. The important consideration coincides with Gardner and Stem (1996) argument that education is not likely to work if it promotes attitudes that clash with people's basic ethics or values.

A shortcoming that diminishes the authority in *Acting Today, Shaping Tomorrow* is through the passive language that is used. The policy framework does not explicitly state the vision of environmental education as provided in the Bondar Report by the Working Group on Environmental Education. Rather, the policy framework states it is an "*approach* to environmental education" that is aimed "*intended* to ensure that students will have opportunities to learn and to engage in participative leadership" (Ministry of Education, 2009, p. 6). Thus, the framework does not reflect the strong position the Bondar Report took in recommending all appropriate ministries of the provincial government to take environmental authority and accountability; this includes Ministries of the Environment, Energy, Natural Resources, and Training, Colleges and Universities (Woking Group on Environmental Education, 2007).

Furthermore, the Measuring Progress section does not offer any indication whether the Ministry of Education will oversee the school boards' creation of environmental policy, or a clear indication of how it will be monitored, nor does it provide a timeline for when the progress should be complete. The section provides "examples of indicators that are linked to the goals, strategies and action" that will "assist with planning" (Ministry of Education, 2009, p. 22). Moreover, the concluding statement in the Vision section does not offer an indication on how the Ministry of Education will review progress. The concluding statement is as follows:

> Developed through extensive research and consultation with education stake holders, this framework promotes integrated approaches to environmental education, encourages

> target approached to professional development, emphasizes community involvement and provides models for guiding implementation and reviewing progress. (Ministry of Education, 2009, p.7)

An example of how this vaguely written paragraph could be reworded to be more powerful would be as follows:

> Developed through extensive research and consultation with education stakeholders, this framework provides an integrated approach to environmental education, needs on-going professional development, involves the community, requires implementation, and accounts for progress in school improvement plans.

Unfortunately, this framework requires each school board in Ontario to "revise or develop an environmental education policy" (Ministry of Education, 2009, p. 8). Thus, environmental policies will then be different from one school board to another. This inconsistency reinforces the primary conclusion of the Bondar Report, in which it stated a lack of system-wide environmental education framework, which creates uneven environmental education programs across the province.

In conclusion, the policy framework recognizes the importance of turning environmental learning into action and the need for building on student leadership skills, however it does not explicitly state many of the Working Group on Environmental Educations recommendations. In the Bondar Report, the seventh recommendation indicates the Ministry of Education staff be assigned the responsibility for the implementation of environmental education programs; however, there is no mention of this in *Acting Today, Shaping Tomorrow*. The policy framework vaguely states the recommendations from the Bondar Report and gives the school boards the

responsibility to address the recommendations to their discretion. Furthermore, there is no reference to how the goals and actions proposed in the framework will be monitored, which creates doubt that there will be a ministry department accountable for enactment of this framework. That being said the framework recovers from its shortcomings in the Goals, Strategies, and Action section as it adheres to the values and beliefs of the Bondar Report.

Place-Based Education

In the Goals, Strategies, and Action section in *Acting Today, Shaping Tomorrow*, the first goal is teaching and learning about environmental issues and solutions. Researchers from Arizona State University outline the concept and structure of the 'Global Classroom' whereby:

> There is a particular need for diverse and rich cross-cultural learning opportunities that simultaneously prepare students for understanding sustainability challenges and build students capacity to develop robust solution options to these challenges. (Wiek et al., 2013, p. 20)

In order for educators to create global classrooms, they must give context to the environmental topics they are learning. The notion that educators do not teach environmental topics but merely provide students with definitions is unfortunate (Case and Clark, 2008). Rather, educators must give context to the content. Then, students can make connections to encourage the application of inquiry-based skills to effectively approach future and present environmental challenges. David Sobel (1995) also shares this view, as he believes that the natural environment is a significant component in this learning process about environmental issues and solutions. He claims that at a young age the exploration of natural environment begin and grows into middle age while continuing into adolescences as "a source of strength for social action" (Sobel, 1995, p. 20).

Sobel states, “if we want children to flourish, to become truly empowered, let us allow them to love the earth before we ask them to save it” (Sobel, 1995, p. 20). He advises against ecophobia, whereby students experience an environmentally correct curriculum, because these teachings end up distancing the students from connecting to the natural world (Sobel, 1995). Sobel (1995) argues that environmental education should not be presented with a sense of doom or disaster; otherwise, children may feel that the natural world is a universe of problems and are likely to become disengaged from it. Children should be given a chance to make a connection with the natural world before they are asked to heal it (Sobel, 1995). Connecting children to nature by employing experiential strategies, such as going outdoors, will immerse them in the natural world (Pedretti et al, 2012). Place-based education has attracted attention among the education community because it uses the local community and environmental issues to contextualize what had previously been abstract concepts (Tan & Pedretti, 2010). Place-based education recognizes “the importance of the local approach over approaches that focus on a generalized, abstract social good that often finds expression in some relief effort in remote corners of the world (Smith, as citied in Tan & Pedretti, 2010, p. 63). Thus, subject matter needs to be relevant to the community and need to take an active investigation in the local environment.

In addition to empirical studies, place-based education has been the focus of popular writing. Richard Louv (2005), an American author, appealed to the wider public interest with his novel, *Last Child in the Woods*. The main character in his book is the reversal of what he has coined “nature-deficit disorder” whereby children are reconnected with nature for the benefit of their own health (Louv, 2005). Louv’s writing coincides with the idea of teaching more than just the content of environmental issues and solutions and instead relating the content to the student’s

life (Sobel, 1995). According to Louv (2005) considering the local and the sense of affiliation to place is of paramount importance.

The second goal in *Acting Today, Shaping Tomorrow* (2007) is student engagement in practicing and promoting environmental stewardship at the school and in the community. This is "best produced and developed by personal exploration and discovery of people's surroundings… and shaped by economic, social, religious, ethnic, and cultural factors" (Telero, 2004, p. 5). Sobel notes that (1995) after children from ages six to nine years old are presented the basis for environmental curricula in their local environment, they then are able to critically think about how they can practice and promote sustainable environments on a local and global scale. Place-based education can facilitate students practicing and promoting environmental stewardship. It requires being outside the classroom to learn about the environment; it is a common approach associated with service learning, civic education, and project-based learning (Smith, 2007). As well, place-based education brings the natural environment and human community to engage in action (Tan & Pedretti, 2010).

The third goal in *Acting Today, Shaping Tomorrow* (2007) is environmental leadership throughout the educational system. Schools need to provide an example of environmental leadership by promoting effective green practices such as, recycling, composting, and energy conservation. Ontario schools can create partnerships with EcoSchools, "which specialize in energy minimization, waste reduction, and practicing the greening of schoolyards" (Fawcett, 2009, p. 104). Stevenson (2007) discusses the relationship between environmental education and democracy and explains that schools need to provide students with the tools to enact decisions:

> If, for example, the aim of the schooling in general is to further the democratic imperative and offer students choices into their own destinies, their exposure to different perspectives is important to ensure their rational, defensible decision making…. for environmental issues, there are several possible solutions. If we are serious about getting students to choose, they need to have action competence because it would be highly ingenuous to offer choice but no way to act on it. Students need to practice making these decisions and competence in what amounts to political organization in order to enact their choices. In effect, schooling needs to provide students with such practice. (Stevenson, as cited in Tan & Pedretti, 2010, p. 63)

This is a very insightful outlook on the importance of providing students with opportunities in school to make decisions and the ability to enact their choices in the community. It is essential for students to learn about environmental issues and solutions in their specific environment in order for them to positively participate and promote environmental stewardship throughout the education system.

Conclusion

The literatures reviewed for this study reveal the deep concerns and need for awareness for implementing environmental education within the Ontario school systems. Primarily in the last three decades, there has been a global pragmatic expectation for incorporating the environment as an approach for education. Students need to be educated about the environment, for the environment, and in the environment, so that they can apply their knowledge and skills to formulate environmental solutions. By unpacking the environment as a subject of investigation in the curriculum and not being restricted to just using the term ‘environmental education,’ it

allows students to identify their own level of commitment towards the care of the environment and become active citizens in their community (Palmer, 1998; Ministry of Education, 2009). As a result, this research study is designed to shed light on how to implement an environmental education program that not only works to improve environmental literacy but also creates the foundation for stewardship.

CHAPTER 3: METHODOLOGY

Introduction

This study aims to discover how educators in Ontario are implementing an environmental education program in their classroom. This qualitative study sought to compile information through face-to-face semi-structured interviews with four educators who currently teach in an elementary or secondary classroom and one administrator at the elementary level. The methodology details all information concerning procedure, participants, data collection, analysis of data, ethical procedures, and limitations.

Procedure

I began this study by conducting an in-depth review of relevant literature related to this study. I searched educational and scholarly databases to investigate the changing definitions of environmental education and its perspectives, particularly within a policy framework. The existing literature revealed a gap between what the Working Group of Environmental Education recommends and what is written in the policy framework released by the Ontario Ministry of Education. I have also identified a disconnect between the policy framework and teacher practices in classrooms.

I created a series of semi-structured interview questions to discover how teachers define environmental education, what teachers are doing in their classrooms to integrate environmental education and their efficacy of implementing environmental education. After finalizing my semi-structured interview questions, I sought teachers from various schools in the Greater Toronto Area (GTA) who were implementing environmental education in their classroom. After

identifying the participants, I scheduled a time and place that was convenient. At the beginning of the interview, I guided participants through the administrative information form (Appendix A) and the consent form (Appendix B). After clarifying expectations and addressing concerns, I asked the participant if he/she has any questions about the study. Once I received the consent form, I reminded participants they have the right to withdraw from the interview at any point without consequences. The details of these semi-structured interviews are discussed below under "Data Collection." I recorded each interview with a recording device and transcribed it verbatim with the help of VLC Media Player, which allowed me to slow the speed of the recording as I transcribed. I then began the process of coding which I have detailed under "Data-Analysis." After coding my data, I wrote a thorough analysis of my findings and their implications. This included a comparison of participant responses. I looked at the connection between my research findings and the literature. Finally, I concluded my study by discussing how the literature review, the interview process, and the research findings answered my research question and sub-questions. I discussed the implications of findings for the educational research community and discussed recommendations for teacher practices. I ended my study by addressing questions raised and the need for additional research.

Participants

For this research study, I sought five participants based on the following criteria.

- Willingness to participate
- Currently an educator in the Toronto District School Board in Ontario
- Actively making a conscious effort to implement an environmental education program into their classroom or school for at least three years

In total, I interviewed five research participants for this study. Although five participants is a rather small sample size, their responses provided insights on how educators implement an environmental education program into classrooms in Ontario. I recruited these participants from the Toronto District School Board in the GTA. Participants were provided an administrative information letter outlining the goal of the research study (Appendix A). All participants signed a consent form to participate in the interview and to acknowledge that the topic of the interview was explained (Appendix B). Interview questions were provided during the semi-structure face-to-face interview (Appendix C). Furthermore, participants had the right to withdraw from the research study at any given time without consequences. Lastly, participants were welcome to not answer individual questions without any consequences.

In my search for participants, I sought two educators who had experience with outdoor education in the GTA. Initially I had only sought out classroom teachers but I thought that the perspective of an outdoor educator and administrator with experience in outdoor education would be valuable to this research study. In total, I interviewed one elementary classroom teacher, two secondary classroom teachers, one outdoor educator, and one administrator experienced in teaching and supervising at an outdoor school.

Each participant had at least three years of experience actively incorporating environmental education in his or her classroom. Furthermore, each participant has a high degree of experience and expertise with environmental studies and a commitment to the environment that extends beyond the classroom. The following Table 1 below provides an overview of each participant, including the pseudonym assigned to them to maintain anonymity.

Table 1 Description of Participants

Name	Educational Background	Qualifications and Additional Qualifications	# of Years Teaching	Current Role
Meredith	• University of Toronto: Honours Bachelor of Arts • University of Toronto OISE: Bachelor of Education (I/S) • Wilfred Laurier University: Masters of Arts in Geography	• Intermediate and Senior Division: Geography • Intermediate and Senior Division: Individual and Society • Honours Specialist in Geography	15 years	Secondary Teacher
Derek	• Lakehead University: Bachelor of Arts • Nipissing University: Bachelor of Education (J/I)	• Junior and Intermediate Division: Geography • Senior Division: Geography • Primary and Junior: Science and Technology Part 1 • Environmental Science Part 1	15 years	Outdoor Educator
Christina	• York University: Bachelor of Arts • York University: Bachelor of Education (P/J)	• Primary and Junior Division • French as a Second Language Part 1 • French as a Second Language Part 2	9 years	Elementary Grade 4/5 Teacher
Jack	• Trent University: Honours Bachelor of Science • University of Toronto OISE: Bachelor of Education (I/S)	• Intermediate and Senior Division: Environmental Science • Intermediate Division: Science – General • Intermediate Division: Mathematics • Intermediate Division: Physical and Health Education • Intermediate and Senior Division: Science – Biology • Special Education Part 1 • Special Education Part 2 • Specialist in Special Education • Honours Specialist in Biology and Contemporary Studies	15 years	Secondary Teacher
Kate	• Memorial University: Bachelor of Arts • Memorial University Bachelor of Education (I/S) • Northern Illinois University: Masters of Science in Outdoor Education	• Intermediate and Senior Division: French • Primary Division • Environmental Science Part 1 • Environmental Science Part 2 • Specialist in Environmental Science • Principal's Qualification Part 1 • Principal's Qualification Part 2	25 years	Vice Principal

Instruments of Data Collection

The data for this qualitative research study was collected through five face-to-face, semi-structured interviews. I chose to conduct semi-structured interviews because I wanted to ask specific questions but not restrict my participants from expanding their answers with personal reflection and experiences. I wanted to have a conversation around specific topics and that easily flowed from one question to the next. The interview lengths varied from thirty to sixty minutes and were held at a time and place convenient to the participants. Each interview was audio recorded and later analyzed. My interview questions are listed in Appendix C.

The primary research question of this study is as follows: *How do educators implement an environmental education program in an Ontario classroom?* The secondary sub-questions of this study are as follows:

1) What are educators' perspectives about environmental education?
2) What strategies are being employed when implementing an environmental education program in a classroom?
3) What specific challenges do educators face when implementing an environmental education program in a classroom?
4) How can we better support educators to implement an environmental education program in the classroom?

Data Collection and Analysis

Each interview was audio recorded on a digital device and then transcribed verbatim. After transcribing the interviews, I organized the information into codes, which involved the aggregation of text into small categories of information (Creswell, 2013). Labels were assigned

to each code that was grouped in three ways. First, I grouped the codes by priori themes, which are themes I expected to find prior to the interviews. Next, the codes were organized by unexpected emergent themes. Finally, the codes were grouped by overarching themes by taking into account of all the information gathered and were sorted by topic; I analyzed my findings with greater context to search for any critical meanings. Overall, I identified four overarching themes that were addressed by my participants and explored the parallels between their responses. The four overarching themes evident in the data were:

1) Educators' Perspectives
2) Pedagogical Practices
3) Challenges
4) Support Systems

Ethical Review Procedures

In accordance with the ethical review protocol that was submitted by The University of Toronto Ontario Institute of Studies in Education for the Master of Teaching program, each participant received an administrative consent letter (Appendix A) prior to the interview. This ethics review protocol falls under the Curriculum, Teaching, and Learning Department under the Master of Teaching Program. Once the administrative consent letters were provided to research participants, a consent form (Appendix B) was reviewed and the participants were given a brief overview of the research topic, as well as purpose of the study. With the participants consent all interviews were audio recorded in order to transcribe the interviews later on. Participants were assured the audio recordings would be deleted upon the completion of the research study. To ensure anonymity, each participant was given a pseudonym. All transcribed documentation was

saved in a password-protected device and any physical notes taken during the interview were stored safely. Lastly, prior to the interview it was emphasized to the participants that they may withdraw from the research study at any time and were welcome to not answer individual questions at any time without consequence.

Limitations

There are several limitations to this research. First, this study is limited by the small sample size of research participants. Due to the fact that this research study is reflective of only five research participants, their opinions and experiences affects the validity of the findings on how educators implement environmental education in an Ontario classroom. Moreover, the reliance of their word as fact is another limitation in this study. I do not believe that the answers provided were untruthful; however, I do believe I am generalizing my findings on to other educators in Ontario. It is difficult to understand the holistic picture of environmental education in Ontario from a limited number of five participants, as their perspectives do not necessarily reflect all educators in Ontario. Second, the study is limited by the fact that it did not sought participants who were not implementing environmental education in the classroom. It completely negates the perspective of educators who are not implementing an environmental education program in Ontario. Third, the study is limited by the time spent with each participant. Furthermore, the study is also isolated in the Greater Toronto Area and cannot give insight as to how to implement an environmental education program in all Ontario schools. Although the study attempts to remove subjective bias and interpretation of findings, there will remain some subjective involvement, as I am passionate about the topic.

CHAPTER 4: FINDINGS

Introduction

In response to worldwide concerns surrounding environmental issues, Ontario educators across all disciplines are mandated to provide students with an exposure to environmental education (Ministry of Education, 2009). The Ontario Ministry of Education has recently completed an extensive review of their ministry-mandated curriculum documents to reflect this at the elementary and secondary levels (Ontario Ministry of Education, 2007, 2008a, 2008b, 2013). In this chapter, I present the interpretations of my findings of data collected from five semi-structured interviews. Analysis of the five interviews I conducted revealed four overarching themes that emerged from the data. The findings provide insight on the importance of an educators' perspective, pedagogical practices that participants have found effective, challenges educator's face, support systems available to teachers attempting to implement an environmental education program.

Theme #1: Educators' Perspective

Notably, all the educators interviewed possess a deep passion for environmental education. They all described having a strong degree of personal connection to the environment and their concern for environmental issues. The factors participants took in explaining their perspectives about environmental education in a classroom can be grouped into two sub-themes: Interest and Passion, and Definition.

Interest and Passion

Each research participant's journey toward environmental education and what inspired him or her was discovered by asking, "How did your interest grow in environmental education?" Meredith responded:

> My high school geography teacher. I loved him. He just inspired me to continue…. we were always going on field excursions, overnight camps, and national parks. I just got really interested in the outdoors, camping, and hiking. I was just an outdoor bug. That was me. I was granola bar.

She went on to say that she always had a passion to care for the environment.

Similarly, Derek also presented a strong passion and interest in environmental education when speaking about the experiences that helped shape the person he is today:

> I think it stems from growing up. We went camping every summer up to my grandma and grandpa. My mom was from Northern Ontario so we would go up there. My grandpa had a fishing lodge. So it was being instilled from a young age, being a part of nature and being immersed in it.

Derek attributed his interest in working as an outdoor educator to his parents and grandparents by saying that, "they are the real reasons why I am where I am today."

On the other hand, Kate and Christina's interest grew in the beginning stages of their teaching career. Kate's interest sparked when she watched a documentary by David Suzuki:

> I had seen this show on television by David Suzuki and he was at the Toronto Islands with a group of kids. They had their nets in catching little aquatic creatures and I thought how do I get a job like that.

Kate made a conscious effort after four years of teaching to go to a conference from the Council of Outdoor Educators of Ontario. Kate attended a Fireside Chat event in which she exaplained the following:

> Everybody got together… So I went up to people and they had no idea who I was because I wasn't involved in outdoor education at all and I said, 'I'm really interested in outdoor education, how do I become involved? … Someone suggested the Masters program in Northern Illinois University… I did a Masters with a concentration in outdoor education.

Before Kate left for her Masters to North Illinois University, she realized that the environment has become an essential component of her life. She described her feelings saying, "the environmental part was a part of me."

Christina's interest in environmental education grew when she and a colleague became involved in the Natural Curiosity project at the University of Toronto's Dr. Eric Jackman Institute of Child Study. She stated the following:

> We had to go to the lab school for lesson study days. It was really for environmental teaching and learning. They have these lesson study days to come in. They're used to having people in the classrooms observing all the time. So their focus was inquiry-based learning.

Christina presented a strong passion for environmental education when discussing about her concerns for the environment:

> There is always a focus on the economy; they always focus on transportation, and everything else. But if we don't take care of the environment, how are we even going to

> be here to deal with the economy. You've got to deal with the priorities first. But for some reason because the environment doesn't speak for itself they think that it is not important.

Jack shared his experiences and journey toward environmental education. He had worked on a farm, a homeless shelter with youth, and in an open custody program. The environment was an important concept to him:

> I am not entirely sure about my journey…. I mean I have a long process…. I got into environmental education because I had a background in science, it seemed like a natural fit and I like it.

Jack also added that he had struggled to teach environmental education after he graduated from University of Toronto's Ontario Institute for Studies in Education:

> When I was doing environmental science at OISE in the 1990s, it was the same year that Mike Harris wrote environmental education out of the curriculum. I graduated with an environmental science teachable at a time when no environmental science was being taught.

His response sheds light on the ongoing struggles an educator may face when teaching environmental education. However, his passion for the environment and interest in the area has motivated him to outline the topic in all components of the curriculum. This further illustrates that interest is a key factor associated with the implementation of an environmental education program in the classroom.

Definition

According to Environmental Education Ontario, "many terms have been used to describe learning about human relationships to the earth over the last century, including conservation education, wilderness education, outdoor education, environmental education, education for sustainable development and ecological literacy" (Environmental Education Ontario, 2003, p. 18). Although the names of the terms vary, the commonality they share is the relationship between humans and Earth. I directly asked my participants to define environmental education and to provide their opinion about the Ministry of Education definition from the document *Acting Today, Shaping Tomorrow – A Policy Framework for Environmental Education in Ontario Schools*. Christina defined environmental education as the following:

> Environmental stewardship because I have come to realize that the environment is not something outside of anything, it has to be something that has to be included in every aspect of everything. If you think about it, I have to include it in math and science, for sure and even in social studies. It just seems it spreads all across. If you really look for it, it spreads across.

This quote highlights that Christina is making a conscious effort to include environmental education in many different school subjects. She explained that environmental education stems from the connectedness of human beings and the Earth. Christina mentioned that educators need to emphasize to students the importance of environmental stewardship:

> I told the kids that I am an environmental steward because the environment does not have a voice. And because the environment does not have a voice, I have to be the voice. I

> have no choice. It's not like something I can ignore. You can't, you have to be the voice because they can't speak for themselves.

Meredith had a similar response to Christina when asked to define environmental education. Meredith also felt that environmental education was about:

> being good environmental stewards and good global citizens. You know we were taught to act locally but think globally. So I guess those are some of the words I would think when talking about environmental education. Not just in geography but in all the other subjects.

Meredith also explained that making connections was essential from the following statement:

> It's not just when we are talking about the environment and protecting the environment. We are talking about the social connections, the economic connections of being good stewards to the environment and the political connections.

This quote articulates that she makes a conscious effort to educate her students by making connections instead of just advocating for the environment in the classroom.

Jack's definition of environmental education suggests that it could be broadly defined as an interdisciplinary to solve problems in the natural environment, social environment, and built environment:

> Environmental problems cannot be solved within disciplines because they do not exist within disciplines. If it was a disciplinary problem we could solve it within a discipline, but it's always a problem where human systems or biological systems interact and there is culture and there is language. How do we communicate with people and what are the values and ethics of these people.… It is the place where we can get students to think

> critically and deeply about things, which are meaningful to think about. If we want higher order thinking skills, you have to give people something, which is a real problem for which there is no easy answer. I think environmental education is one of those places where there are no easy answers and you can think critically about how you can get better answers.

Jack also emphasized that environmental education should have concepts around "sustainable development, meeting the needs of the future, ideas from economics like natural capital, and ideas about equity and distribution of social goods." He continues his response by saying:

> we cannot solve environmental problems without solving social problems like poverty and inequality. They just don't get solved. Population is a problem and that cannot be solved without talking about women's equality. Overconsumption is a problem that can't be solved without looking at consumerism and marketing. I feel like environmental education should encompass a lot of things. And the environment of the school is not what just happens in the classroom but what happens in the hallways and schoolyard.

This response coincides with the current literature that emphasise that environmental education does not just happen inside the classroom (Tan & Pedretti, 2010; Louv, 2005, Fawcett, 2009; Working Group on Environmental Education, 2007 & Sobel, 1992).

Kate had difficulty thinking how she could separate outdoor education from environmental education as she felt they were simultaneously working together. She pointed out how sometimes teachers, "just teach about the environment - these are environmental issues, but not going any further beyond that because environmental education is about making connections in the environment." Additionally, she noted that when students learn outside their classrooms, it

is easier for them to build connections with the environment. She shared her experience working as an outdoor educator and site supervisor at an outdoor education centre in the GTA:

> We often like the students to come after they have already been taught the content. So that they have the 'about the environment' and then we can do the 'in the environment' and also speak 'for the environment'…. we look at the Ontario curriculum and say what can be done in the class and what cannot be done in the class. It is the application part of the curriculum, not the knowledge part. That is why I say it is ideal if we can get a teacher who has already taught the stuff in the classroom and let us now go for the application part.

Kate also highlighted that the idea of environmental education is for all age levels that include students and adults. She said it was about "understanding connections between what we are living in our environment and what is out there."

Derek argues that environmental education does not have one particular definition. However, if it could be narrowed down to one, it should include how "it is immersing kids in the outdoors. Taking what they are learning in a traditional classroom or school setting and applying it in outdoor context." He also mentioned that an environmental education program has to be relevant, meaningful, and hands-on for the students to "hit on different senses like multiple intelligences."

When analyzing the data it became apparent that all participants unanimously agreed that the Ministry of Education definition in *Shaping our Schools, Shaping our Future: Environmental Education in Ontario Schools* reflected all the components of environmental education. Kate described it as being "comprehensive," while Christina said, "I think this is what it is. I think this

is what I absolutely said but in a different way. But in a policy framework way." On the other hand, Derek said, "we've always talked about for, in, and of the environment," while Jack responded with "yeah it's alright, I don't think it's bad." All participants emphasized environmental education should include teachings about the environment, for the environment, and in the environment.

Theme #2: Pedagogical Practices

According to Chawla (2007) the efforts of a teacher who teaches their students to respect the environment can be influential to young minds. Many of the pedagogical practices that the participants considered when implementing environmental education in the classroom can be grouped into three sub-themes: Experiential Outdoor Learning, Making Connections, and Promoting Change Beyond the Classroom.

Experiential Outdoor Learning

The participants had definite ideas about learning in an outdoor environment setting. Sobel states, "the basis for bonding with the natural world comes from finding special places in the wilds as well as the journeys of discoveries" (Sobel, 1995, p. 19). Both Meredith and Derek identified that going outside into the natural world is an essential component of environmental education. In addition, Meredith suggested that teachers should attempt to make environmental learning as relevant and applicable. She went on to give an example of her class doing a unit on scale:

> I try to get them outside as much as possible and make it applicable. They are going to make a longer-lasting memory and hopefully it will make the curriculum relevant. So

> when my students were doing their unit on scale they have to go outside and measure the perimeter of the property and map it to a scale. Then they had to step back and ask 'if we did not have the building placed here how we might better make use of this plot of land to make a more sustainable school?'

On the other hand, Jack outlined several examples of various ways he provided students with the opportunity to experience what they were being taught:

> I try to take people outside, like every class gets outside. I walked them outside and said let's think about things we can do. One group for example is looking at the environmental impact of a park bench. So they went to the park bench and they looked at the plant diversity by the bench and away from the bench and they looked at soil compaction. They also looked at the abundance of plants by the bench and away from the bench and the amount of litter by the bench and away from the bench. They sort of found that putting a park bench in a park degrades the environment around that bench quite a bit. Other students went down to Ashbridges Bay, took sand samples from different places, and counted plastic particles…. Another group took visual observations and water samples from the northern part of some of our watersheds.

Jack reflected on his examples and claimed that by going outside he was "making it fun and making it relevant, while allowing them to pick their own topics and telling them it's an issue and it's worth discussing." Chawla (2007) examined the connection students made with nature. She believed that peer activities in the natural environment motivate groups to achieve a level of success while boosting group members' confidence and morale (Chawla, 2007). For this reason,

she stated, “It is critical for environmental educators to help groups judge what they can accomplish with the time and resources available (Chawla, 2007, p. 449).

Recognizing that many students do not have an exposure to the outdoors, Derek stated, “It is their only time to getting immersed and out in the environment.” He also added, “I would not be the same person as I am, if I did not have those experiences going out.” The opportunity to go outside into the natural environment allows students to “make a longer lasting memory of what they have learned” and provides insights to different environments around them (Meredith).

Experiential learning from environmental education programs should create a pleasant experience and atmosphere. According to Derek, students should always feel “relaxed” and “comfortable” in an outdoor setting. He also added that humor was an asset that helped to build a relationship with his students.

During the interview, Christina addressed the idea that a student’s kinesthetic experience with nature can play an active role in their learning process, especially those students with special needs. She mentioned, that students from the Home School Program (HSP) “cannot learn by sitting down with a pencil and paper; they have to be moving, they have to be in it to understand it and learn about it.” Derek attests to this statement, as he has observed that special need students benefit immensely from an experiential outdoor experience. In the next section, I argue that meaningful experiential outdoor experiences influence a student’s desire and level of engagement; this should be taken into account while implementing an environmental education program in a classroom.

Making Connections

When talking about students' experiences at the Outdoor Education School, Jack tried to formulate lessons that connected to a student's life at home. By making real life connections with hands-on activities, it provided students an opportunity to "make it enjoyable, make it fun …. and make it meaningful" to learn about the environment (Jack). The reviewed literature coincides with this response by agreeing that an education that students can relate to make their experience of learning more meaningful (Sobel, 1992; Tan & Pedretti, 2010).

Jack shared an example of a method that was used to make environmental issues relatable to his students. His classroom conducted a waste audit from garbage cans in the school. His students were shocked when he dumped the garbage can onto his desk. Jack allowed his students to explore the concept of waste management through hands-on strategy and explained, "We sorted through it all to find out real data and to find out what really gets thrown out here." He presented students with the opportunity to examine an environmental issue in a way that affected them personally. Jack concluded that the level of understanding translated when students collected their own data:

> We found that in places where there was recycling and garbage, 95% of the stuff was in the right place. Occasionally there were things in the wrong place and then within the garbage, we found that 70% of it was actually compost. Students are good at throwing things away in the right place when they are given the option but if you check the hallways, it's like the amount of recycling goes down because students are given no option.

The students concluded that they would do the right thing if they had been given the option to recycle in the school hallways. Jack suggested that posing questions to students about environmental issues that relate to them personally is an effective strategy to use when implementing an environmental education program in the classroom; the translation into real life can be small but even an ounce of it is necessary. Derek also shared a similar strategy by explaining that "hands-on is the best. That is what you remember, that is what gives you those strong connections."

Providing exposure to students was also an important element of environmental programming. Christina emphasized that her favourite concept to implement was, "exposure to everything. Exposure to everything on the issues we are learning about and making the connection while making it real life." She highlighted the importance of exposure to students who do not have previous experience or very little experience about the environment; the utilization of videos, books, news, and valuable guest speakers that are current on environmental issues are effective ways. Furthermore, she pointed out that the purpose of exposure to environmental issues was to get students to "critically think and generate questions before formulating solutions."

When discussing teacher practices with environmental education programs, Kate brought to attention the concept of "infuse." According to Kate, teachers need to infuse a relatable environmental education program in what they are already doing rather than considering it an add-on. Kate emphasized that most students have an idea about respecting oneself, respecting others and respecting the environment. Thus, by students making a connection with their

environment will lead them to have meaningful experiences and opportunities that provide a deeper understanding of the curricula.

Promoting Change Beyond the Classroom

To a large extent, all of the participants expressed a sense of urgency to promote environmental awareness about environmental issues. By providing students with relevant, meaningful, and relatable experiences and opportunities in the classroom, they are likely to take on a variety of projects; this includes active engagement within and beyond their classroom in order to target issues relating to environmental degradation. Although students have been exposed to recycling methods, Kate highlights the importance of taking it beyond the classroom and into the community. By doing so, it generates awareness for the environment and motivates others to follow in their footsteps. The interviewees addressed the need to get their students to care about the environment, which encourages environmental education programming to extend beyond the classroom.

Although the participants agreed that EcoSchools provided an extension for students to go beyond the classroom into the school community, Christina decided to start an Eco-Club first before turning her current school into an EcoSchool. She emphasized that it was essential to start from the classroom first before taking on an entire school.

Ontario EcoSchools is an environmental education and certification program (Bronze, Silver, Gold or Platinum) for grades K-12 that helps reduce the environmental footprint of schools and develops both ecological literacy and environmental practices to become environmentally responsible citizens (Ontario EcoSchools, 2014). Derek an outdoor educator

explains that the outdoor education department is conducts audits for the schools that are applying for a platinum certification:

> We are helping to do the pre visits, which is what I find kind of funny. EcoSchools that are going from gold to platinum means they are already at the top. These schools have a good idea what is going on. I think we should be doing more for those who do not have a level yet, like bronze, silver, or even gold.

Derek raises a concern for being able to provide resources and support to schools that have not fully developed the capacity to implement sustainable environmental education initiatives.

Meredith mentions that her current school is a certified EcoSchool, in which "more clubs are geared towards the environment. There is more awareness, waste-free lunches, power down, and thinking about fandom power." All the participants mentioned concerns for students to go beyond the classroom into the school community in order for environmental action to translate into a student's lifestyle. As the earlier references to literature suggest, a student's love for nature is an essential component that propels them to address environmental issues and adopt daily practices that are more sustainable (Tan & Pedretti, 2010; Working Group on Environmental Education, 2007).

Theme #3 - Challenges

One question I asked during the interview focused on the challenges educators faced while implementing an environmental education program in the classroom; it became clear that the research participants held decisive opinions about the challenges faced by educators when implementing an environmental education program. The following section will expand on the challenges encountered by the research participants. The responses' can be categorized into three

sub themes: Accountability, Lack of Care and, Funding and Access to Outdoor Education Centres.

Accountability

During my interview with Christina, she began by saying that educators put environmental education on the backburner. She goes on to add, "People do not seem to want to connect it to anything. They want to look at it as a single thing as its own." I believe Christina does a great job of introducing accountability as a possible challenge for teachers that look forward to implement an environmental education program in a classroom. This is evident when she states, "Why are you going to waste your time on it if you don't have to report it? You don't have to report on environmental education, what is the point?" The school boards in Ontario need to take accountability for mandate by Ontario Ministry of Education in *Acting Today, Shaping Tomorrow*.

Jack discussed how school administrators need to push environmental education into their schools and that teacher performance evaluation should include questions such as, "How do you implement environmental education, or how do you implement globalized education?" Jack goes on to add that educators would more likely start caring about implementing environmental education if there was an expectation of accountability. Furthermore, he explained how implementing environmental education was neither part of any structured criteria from his school nor school board by saying, "Not even a suggestion that it really needs to happen. Even if you told me that it was important and never checked to see whether I cared, that would be a step in the right direction."

Lack of Care

All participants of this study identified that getting teachers and students to care for environmental education is a challenge. According to Meredith, "I don't care," "why am I learning this," and "I don't want to do this" are challenging statements that have come from her students. Meredith responded by asking them, "Why should I care?" to get them to think critically and allowed them to answer the following three key questions: "What's there? Why care? Why should I care?" The current literature would agree that in order to motivate students to care about environmental topics and issues, the learning needs to take into account student's own experiences in their local community (Sobel, 1992; Tan & Pedretti, 2010; Working Group on Environmental Education, 2007).

Christina discussed the concept of thinking about fixed mentality and growth mentality when examining educators who do not care to implement an environmental education program in the classroom:

> The fixed mentality is the mentality that you and your DNA have given you a certain mental capacity. You just sort of work within that framework of what you have been given… as opposed to the growth mentality where it doesn't matter what I have been given whatever mental capacity, whatever mental disability, I could still grow as a person. I could still learn. I could still learn about the environment. I could still learn about how I interact with the Earth.

She elaborated that teachers have a fixed mentality while implementing an environmental education program:

> I find that many teachers are stuck on that fixed mentality not because they don't know how to grow as people but just because having a fixed mentality as a teacher is so much easier. You pull that file out the next year and you teach the same thing and you put it away.

Jack suggested that a big part of the challenge has been to educate educators about environmental education and persuade them to become informed. Jack felt that schools have other priorities like making Educational Quality and Accountability Office (EQAO) scores higher and dumping their resources into the success of schools to boost math scores. It can be very challenging to introduce environmental education in the classroom if the policy in the school board or the school is held back by other reservations such as, priority to literacy and mathematics scores:

> Kate found it difficult to get teacher involved in her school by saying the following;
>
> It is challenging finding teachers who are interested. And finding people who are interested and understanding that it is not an add-on, this is not extra work I am giving you. I want it to come from teachers.

Christina claimed that introducing environmental education in the classroom was difficult at times. She reflected on her very first year teaching and said, "I had an autistic student, severely autistic. And so I was on a learning curve at every sense of the word. So I could not really focus on stuff I wanted to focus on. I had to focus on stuff that was priority." Motivating students to care and educators to make environmental education a priority instead of an add-on is a challenge.

Funding and Access to Outdoor Education Centre

Christina discussed the challenges of accessibility at an Outdoor Education School in the GTA. There are only a few existing Outdoor Education Centres in the GTA as most of them closed down in the 1990s during the Mike Harris Government (Fawcett, 2009). She highlighted her experience with a colleague in trying to access an outdoor education centre:

> We tried to book an Outdoor Education Centre, not as a program, but we just want to come without having to provide a bus or assign teachers and we will do our own guided tour. They wouldn't even take us like that. And it was like, we don't want your staff, we just want to go there. We didn't want the busing, we would walk. We didn't want the staff. We just wanted to hike in the area.… I find that Outdoor Education Centres are now becoming harder and harder to access. We have such a great Outdoor Education Centre fifteen minutes away from our school but only three teachers are able to go each year from our school. Thank God, I have been chosen after two years to go to the Outdoor Education Centre.

Derek revealed that funding and space are the reasons why not all teachers have the opportunity to come to the Outdoor Education Centre every year. He explained the following:

> Each school is allocated the number of trips based on the number of students. It is one day for every 100 kids and so say you have 300 kids that is 3 trips. Now the principal may say it is a lottery, put your name in the hat, that is who is going to go. Sometimes they say grade 2, 5 and 7 are going to go. Because it is suppose to be that every elementary student will get two or three outdoor education experiences in their elementary years and one over-night.

Derek confirmed that Outdoor Education Centres are comfortable and allows teachers to do their own programming; however, proper an arrangement of buses with a discounted price should be provided. Funding and the limited access to Outdoor Education Centres have become a big challenge for educators who want to provide their students with meaningful and relevant outdoor learning experiences.

Theme #4 – Support Systems

One sub-question of this research study include, "How can we better support educators to implement environmental education in the classroom?" After analyzing the responses, I realized that support systems became a strong theme within my findings. The responses can be categorized into three sub-themes: Top-Down, Curriculum Documents, and Professional Development.

Top-Down

Schools have an obligation to provide support to all teachers and students. In order to support students, schools need to first support their teachers. Christina spoke about an administrator in her previous school that supported the teachers in teaching and learning environmental education by explaining the following:

> It makes a huge difference when your administrator supports your methods. Because there is always a way around everything when you have a certain focus and when your principal understanding your focus, it is even better.

When speaking how to better support teachers while implementing environmental education, Christina responds:

> I think it has to come from the top-down because everything that comes from the pipe for us comes from above. I can't say it's the school administrators because they are also listening to what they are being asked. Like, you know how they changed the social studies curriculum, there was no other way that teachers were going to start teaching about Aboriginal education unless it came from the top. I was one of those teachers who taught Aboriginal Education. But that's just the way I am and people like me and you are far between. So now, we don't have a choice. Now you have got to teach Aboriginal Education. Why? Because it is coming from the Ministry of Education and it is coming from the Curriculum. So, for me in my opinion, in order to support educators to do this, it has come from the top because everybody works that way from the top-down. At the top is the Ministry of Education, then from there to the Superintendents, to the administrators in each school and finally to the teachers.

Christina's response emphasized the importance of a strong support system that includes the Ministry of Education, the superintendents, and administrators; support systems are variable depending on individual schools and their school boards.

Curriculum Documents

The foundational document that guides all environmental educators in their programming is the Ontario curriculum. A majority of the participants depicted the provincial curriculum at both the elementary and secondary level to support the implementation of environmental education program in classrooms. Kate responded the following:

> Now they are starting to write the curriculum with more environmental education infused in it. It is throughout; it is hard to avoid which is great …. the science and technology

> curriculum and the social studies curriculum are where the easy connections are made to the environment. It is also where teachers are able to infuse environmental education into their programming.

According to Tan (2009) environmental issues are "an ideal nucleus on which to focus the teaching of science, technology, and society, providing a real cause for curriculum projects" (p. 36). Thus, environmental education is embedded within curriculum documents but educators need to be aware of how to make the connections first. Dillion (2002) discussed how the science and technology curriculum provide opportunities for environmental education, "to bring modern and challenging social and scientific issues into the classroom that may otherwise be hindered by the vastness of the curriculum" (Dillion, 2002, p. 1112).

Although Jack considered the revised curriculum document for grade 11 and 12, it was easier for him to teach the facts and "the knowledge components into PowerPoint." He questioned the sample issues provided in the expectations:

> I am like, really what am I suppose do with these expectations? Some of them are fine but if you ever read curriculum documents, it can be hard… I feel the curriculum was written in a way, which makes it harder to look at the social, economic, and political factors, which are also important for understanding, and solving environmental problems…. it is particularly a narrow set of things, which showed up in the curriculum.

A commonality between both responses was that the participants saw the curriculum expectations as a guideline on what to teach and it was open for interpretation by each individual to make it as interesting as possible.

Professional Development

The participants in this research study had limited experiences with workshops tailored to implementing environmental education. Each participant expressed at least one workshop or course that they have taken for environmental education. Jack attended a workshop called, Project Wild, but did not see how it integrated into his programming. Meredith recalled attending a professional development workshop on geology and the mining industry. Christina claimed that her biggest learning curve occurred when she immersed herself with the Natural Curiosity project.

With limited experiences with workshops, all the participants had to find their own resources while implementing an environmental education program in their classroom. With limited experiences with professional development, all the participants have had to search for their own resources (Table 2) while implementing an environmental education program in their classroom.

Table 2 Resources for Educators in Ontario

Research Participant	Resource
Meredith	• Oxfam • Greenpeace • Plant Earth Videos • CBC Documentaries
Christina	• Natural Curiosity: A Resource for Teachers • Ontario EcoSchools • Friends of the Don River • Toronto Zoo
Derek	• Ontario Science Centre • Royal Ontario Museum • Ontario Art Gallery • Outdoor Education Centre
Jack	• Environmental Education: Scope and Sequence of Expectations 2011 • McGraw Hill Textbooks
Kate	• Shaping Our Schools, Shaping Our Future • Acting Today, Shaping Tomorrow • Council of Outdoor Educators of Ontario • Environmental Education Ontario

Conclusion

In spite of the differences, all the participants expressed a similar perspective about environmental education, specifically the definition of environmental education. All the participants agreed that environmental education in the classroom needed to be meaningful and relevant to the students in order for them to make a connection. Furthermore, providing students the opportunity for experiential outdoor learning increases their sense of affiliation to their local community. All of the statements concerning environmental education from the participants provided insight on how to implement an environmental education program in classrooms, which I will examine in the next chapter.

CHAPTER 5: DISCUSSION

Introduction to Discussion

The Ontario Ministry of Education has mandated that educators in every subject be required to include direct instruction of environmental topics and skills as part of their curriculum. The purpose of this study was to explore how educators are implementing direct instruction of environmental topics and skills, with the hope to gain a better understanding on pedagogical practices, challenges, and support systems involved in educational programming. Environmental Education in elementary and secondary schools has predominantly focused on sustainability practices and environmental stewardship – behaviours and attitudes designed to preserve Earth's natural resources and meet "the needs of the present generations without compromising the ability to meet the needs of future generations" (World Commission on Environment and Development, 1987, p. 16). This coincides with the *Acting Today, Shaping Tomorrow* (2007) second goal of the framework to increase student engagement in their learning processes, with the hope that participation will give rise to effective citizens in their communities. In order for teachers to promote students to perform active care in the environment, they need to play a direct role in political socialization by creating opportunities for open discussions in their classrooms; by doing so, students will begin to think about their own positions about environmental issues (Chawla, 2007).

The participants provided insight on how they have delivered environmental education in their class and an Outdoor Education Centre. Through my interview questions, the participants reflected on their belief, perspective, and philosophy of environmental education. I gained insight on the challenges educators face when trying to implement environmental education in

the class and an Outdoor Education Centre, including the strategies that educators have found effective.

Four overarching themes emerged from the data obtained: educators' perspective, pedagogical practices, challenges and, support and resources. I will explore the findings and answer each of the four secondary questions under the section "Explanation and Evaluation of Findings" with an analysis of how my primary research question is answered. I will discuss the implications as a researcher, a teacher, and the educational research community. Lastly, I will provide some recommendations.

It is important to note that the findings in this research study are limited by the sample size. As a result, the findings do not accurately depict how environmental education programs are being implemented in schools all across Ontario. Instead, the findings can provide insights on environmental education and further academic discussions. Furthermore, the findings in this research study are limited by my interpretation of the collected data. I will link my interpretations of the qualitative data to larger research literature.

Explanation and Evaluation of Findings

Sub-Question #1: What are educators' perspectives about environmental education?

From the findings, it is clear that participants possess a deep passion and interest about environmental education. Four of the participants had experiences with outdoor learning experiences in their formative years. For example, Derek mentioned, "So it was being instilled from a young age, being a part of nature and being immersed in it." The participants' passion had stemmed from growing up in the wilderness and being exposed to nature. However, many

educators have had a limited exposure to real world environmental experiences. Outdoor experiences have motivated and inspired my participants to develop a passion for environmental education. If the success of implementing environmental education is heavily determined on interest and passion, then the Ontario Ministry of Education's mandate may only be supported in some classrooms. The question then arises, how can we inspire interest and passion in educators for implementing environmental education in classrooms?

It is the opinion of the research participants that professional development opportunities can increase a teachers' knowledge and generate interest in their practice of environmental education. A research study conducted by Pedretti et al. (2012) found that over seventy-five percent of environmental educators attributed their knowledge in environmental education to personal studies rather than professional development opportunities. In truth, teachers who are passionate about the environment are generally "acting in isolation, and primarily use personal knowledge to provide environmental education" (Pedretti et al., 2012, p. 9).

According to Riordan and Klein (2010) professional development in environmental education at its core needs to inspire curiosity through participatory and practice-based approaches. Some professional developments related to environmental education "do not fit in the curriculum…. and is hard to integrate" (Jack). Thus, professional development experiences need to give "teachers a mental image that offers a framework for reflecting and can therefore help to guide their practice" (Riordan & Klein, 2010). Perhaps, the lack of professional development opportunities is one reason why environmental education is not more widely practiced in Ontario. Fawcett (2009) extends the dialogue suggesting:

> To date, teacher training in environmental education is still basically non-existent; only a smattering of electives in BEd programs, no Additional Qualification courses for existing teachers and very few interdisciplinary, environmental education summer institutes. In such a vacuum of practices we will surely deskill generations of teachers and learners. (p. 105)

As a result, I believe this study sheds light on the need for all educators to receive professional development on interdisciplinary planning, investigation of local issues and, robust activities and resources aligning with curriculum expectations.

Moreover, the perspectives of environmental educators I interviewed are similar to stance in Pedretti et al. (2007) study that state how environmental educators "have many ideas about the ideal nature of environmental education and how it should be practiced in the classroom" (Pedretti et al., 2007, p. 7). Evidently, educators surveyed in Pedretti et al. (2007) study believe that teachers should advocate a particular stand with respect to environment, environmental education should include social justice and action components, and outdoor education is an essential component of environmental education. Similarly, my research study coincides with this finding because the participants also believe that educators should not just advocate for a particular environmental issue; instead, they should teach students to respect the environment, to foster awareness of the social, political, and economic connections to the environment, and immerse them outdoors.

All participants agreed that environmental education prepares students with the knowledge, skills, and practices to be environmentally responsible citizens. I synthesized each

participant's definition and the resulting codes into the following definition of environmental education:

> Environmental education is an interdisciplinary area of study that promotes cross-curricular integration. It deals with the social, political, and economic connections of being environmental stewards and responsible global citizens. It is actively utilizing the natural environment, social environment, and built-environment, to provide relevant and meaningful experiential learning in the specific local community.

When analyzing the data, it became apparent that all participants had a clear understanding of the Ontario Ministry of Education definition in *Acting Today, Shaping Tomorrow*. Ultimately, my participants acknowledged that environmental education is "about the environment, for the environment and in the environment" (Ministry of Education, 2009, p. 4) and shared how they thought it could be implemented in their curriculum. I further explain these thoughts in the following sections below.

Sub-Question #2: What strategies are being employed when implementing an environmental education program in a classroom?

Fundamental to environmental education are the pedagogical practices that are employed in a classroom. In this study, the pedagogical practices my participants have employed when implementing an environmental education program in their curriculum include, experiential outdoor experiences, hands-on activities, relevant subject matter, and environmental topics that engage students and encourage their participation for sustainable practices. The question then arises, how can we expect students to engage in sustainable practices without even experiencing

it? As a result, this study reveals that the participants strived to teach beyond the content and invited their students to experience the topics in a local outdoor setting.

In my literature review, I found research supporting the importance of providing students rich outdoor encounters with nature to develop a relationship with it (Sobel, 1995; Louv, 2005; Smith & O'Keefe, 1980; Tan & Pedretti, 2010). Place-based education provides students with rich and authentic encounters with nature and helps them to address community and environmental issues (Smith, 2007). In order to provide meaningful opportunities for environmental inquiry, it is crucial for it to be relevant to a student's community. Without affiliation to nature (place), students are less likely to provide a value to nature and not develop "the form of care that [is] required for environmental and social stewardship" (Tan & Pedretti, 2010, p. 73). Providing students outdoor experiences in a local context will help them contextualize the environmental topic or issue at a global scale. The participants agreed that it is important to develop a student's sense of affiliation with the place where they live. Christina spoke about this point in terms of her curriculum by providing "exposure to everything on the issues they are learning about. Making the connection and making it real life."

I believe it is important to point out that the participants' pedagogical practices consider environmental aspects that affect the local community. This supports the stance taken by Ontario Ministry of Education (2007) in which environmental education "must be defined locally to meet the differing environmental, social, and economic conditions that exist in Ontario communities" (Ministry of Education, 2009, p. 4). Ultimately, the strategies in implementing an environmental education program in the classroom requires a mixture of experiential outdoor experiences,

hands-on activities, relevant subject matter, and environmental topics that engages and encourages student participation for sustainable practices.

Sub-Question #3: What specific challenges do educators face when implementing an environmental education program in a classroom?

According to Tan and Pedretti (2010) the most significant challenges for effective environmental education were the lack of curriculum resources, lack of curriculum alignment to existing ministry expectations and low priority for environmental education in school boards. All of these challenges were present in my qualitative data.

All participants expressed their concern that environmental education is of low priority to educators in Ontario, administrators in schools and their school board. Jack elaborates on this challenge:

> The environment of the school is not what just happens in the classroom but what happens in the hallways and schoolyard. The fact that the Toronto District School Board (TDSB) pay caretakers to pick up garbage but makes recycling an optional thing that a volunteer club might do and green bins an optional thing. Like caretakers refuse to pick up any of that stuff and do any of that stuff because it is not on the contract. The TDSB sends a very clear message about what's important. They do not put recycling bins in the hallway if you notice because they are only in classrooms. Teachers and students need to take care of that.

Jack also adds that schools put a low priority for environmental education because they are concerned about scores from reading and mathematics of the EQAO. Thus, schools in Ontario are not presenting a moral obligation towards environmental education. The Ministry of

Education in *Acting Today, Shaping Tomorrow* (2009) makes "a commitment that environmental education, as defined in *Shaping Our Schools, Shaping Our Future*, will be part of every child's learning and that responsible environmental practices will be fostered across the education system" (p. 3).

Christina brought up an interesting point when speaking about obligations; she mentions how it is a waste of time if there is no obligation to report the progress of environmental education. She continues saying that it is difficult for educators to embrace environmental education in classrooms if the Ontario Ministry of Education does not follow up on the mandate in *Acting Today, Shaping Tomorrow.*

Although teachers utilize the outdoors to connect to the environment, I believe there needs to be a purpose to explain why a teacher should immerse their students in the outdoors. Thus, Outdoor Education Centres are a wonderful addition to the classroom education if teachers are trained on how to bring students outside for lessons in and about their communities. This study found that it is challenging for Outdoor Education Centres in the GTA to provide opportunities to all students because of its lack of funding and space. I believe visiting an outdoor centre at least two or three times a year can have a significant impact on students. Kate, addressed the benefits of outdoor education and how "it is an extension of what the teacher [have] already done in the classroom." The question then arises, why hasn't the Ontario Ministry of Education expanded to Outdoor Education facilities? The history of outdoor education in Ontario suggests that the Ministry of Education is "often ambivalent, viewing Outdoor Education Centres as quaint but expendable facilities in times of organization strains" (Pedretti et al., 2012, p. 11).

Sub-Question #4: How can we better support educators to implement an environmental education program in the classroom?

Educators across Ontario need to develop curriculum resources to accomplish an efficient and effective environmental education program (Tan & Pedretti, 2010). Participants in this study stressed the need for resources to align with the current curriculum documents. One commonality between all participants' responses was that they found ways to incorporate environmental education across the curricula. Instead of having a separate subject on environmental education, it can be connected across multiple disciplines.

Christina outlined that support should come from the top-down. Commitment from the government is required in order to follow through with its pledge to provide environmental education to every childs' learning process; this will foster responsible environmental practices across the education system (Ministry of Education, 2009). Environmental education needs to be represented across the curricula with clearer expectations to support educators in the implementation of environmental education in every classroom.

Primary Research Question: How do educators implement an environmental education program in an Ontario classroom?

As discussed above, fundamental to the implementation of environmental education are educators' perspectives, pedagogical practices, to overcome challenges and to require support systems. After reviewing the literature, analyzing the data revealed by my participants' responses, and gathering my interpretations from their comments, I have synthesized the following statement that I believe encapsulates my primary research question:

Educators implement an environmental education program as part of their classroom directly, as a result, of their perspectives of environmental education, pedagogical practices that they believe fit within their classrooms, and based on the amount of support and professional development they receive.

Implications

In this study, I sought to establish how educators are implementing environmental education programs in Ontario, with the hope to gain a better understanding of pedagogical practices, challenges, and support systems. As a researcher, it is extremely encouraging to have dedicated educators who are passionate about implementing environmental education. Findings in this study highlight the pressing need for more professional development opportunities. The professional development interventions must have different needs for those educators who are not committed to environmental education and those who need help deepening their praxis.

As a pre-service teacher, I know there is no one-size-fits-all approach to the work of teaching environmental education. I need to be mindful of the various pedagogical practices involved in environmental education. I was struck by my participants' emphasis that outdoor learning experiences are an important component to environmental education. I never considered the significance of how outdoor experiential learning could create powerful and memorable experiences for students. I want to make sure that I communicate my passion for environmental topics and sustainable practices to my students into transformational learning. Through place-based education experiences, I hope students are motivated and inspired to promote change and inspire others to become responsible environmental citizens.

My research findings have multiple implications for the educational research community at large. First, there is a need for more research studies of this topic, especially in remote regions across Ontario. Detailed studies are needed on why educators do not implement environmental education programs when it is clearly mandated by the Ontario Ministry of Education. The educational research community agrees that an essential component of environmental education is outdoor learning. With that being said, more research studies are needed to explore the barriers of implementing environmental education in classrooms and the benefits of attending Outdoor Education Centres. Moreover, research studies need to look beyond the gaps and disconnections; it should seek to bridge the gaps with approaches that are praxis oriented and relevant to educators. Lastly, in order to make significant strides to implement environmental education, educators must become environmental stewards first before encouraging students to promote change in the environment. I believe that Christina touches upon this point most effectively through the following statement:

> I told the kids that I am an environmental steward because the environment does not have a voice. And because the environment does not have a voice, I have to be the voice. I have no choice. It's not like something I can ignore. You can't, you have to be the voice because they can't speak for themselves.

Recommendations

As a result of this study, I provide recommendations for myself, the school boards and the Ontario Ministry of Education. For myself, I recommend to take part in professional development opportunities, specifically, the three-session Additional Qualification in Environmental Science from the University of Toronto's Ontario Institute for Studies in

Education. In addition, visiting Outdoor Education Centres for professional development purposes and to continue following the Ontario Ministry of Education publications on environmental education would be beneficial. For current school boards across Ontario, I recommend them to take part in accountability measures for the implementation of environmental education in their schools, including the requirement that environmental education be in school improvement plans and teacher evaluations. For the Ontario Ministry of Education, I recommend they create an action plan to raise awareness about the mandate in *Acting Today, Shaping Tomorrow*. Not all educators are aware of this mandate, thus I recommend the Ontario Ministry of Education to emphasize this mandate in every curriculum document. I recommend the Ontario Ministry of Education to create a program that will support school boards to develop environmental education programs, assign staff with expertise in education and the environment, and to monitor their implementation.

Conclusion

In conclusion, this study confirms that educators implement an environmental education program as part of their classroom directly, as a result of their perspectives of environmental education, the pedagogical practices that they believe fit within their classrooms, and the amount of support and professional development they receive. Fundamental to environmental education programs are pedagogical practices such as, experiential outdoor experiences, hands-on activities, relevant subject matter, and environmental topics that engage students and encourage their participation for sustainable environmental practices. Although many educators encounter various challenges and complexities while implementing an environmental education program in their classroom, the participants in this study revealed a desire to move forward towards change.

“Environmental education is one of those places where there are no easy answers and you can think critically about how you can get better answers” (Jack). “There is no other way about it, you have got to care. If you do not care, then you are in trouble…. the environment does not have a voice….you have to be the voice because they can’t speak for themselves” (Christina).

Ultimately, this study addresses the need for all educators to implement environmental education in their classroom to increase student engagement in their learning process; hopefully, this participation will motivate and inspire them to become environmentally responsible stewards (Ministry of Education, 2009; Working Group on Environmental Education, 2007). Before leaping and promoting change on the Earth, the first step towards sustainability is for children to become environmentally responsible citizens in their communities. Let us take the first step towards sustainability and be the voice for environmental education.

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Appendices

Appendix A: Administrative Information Form

Date: _____

Dear _____,

I am a graduate student at OISE, University of Toronto, and am currently enrolled as a Master of Teaching candidate. I am studying the teaching practices and implementation of environmental education for the purposes of investigating an educational topic as a major research paper for our program. I think that your knowledge and experience with environmental education will provide insights into this topic.

I am writing a research paper on this study as a requirement of the Master of Teaching Program. My research supervisor who is providing support for the process this year is Anne Marie Chudleigh. The purpose of this requirement is to allow us to become familiar with a variety of ways to do research. My data collection consists of an interview between 30 - 50 minutes that will be tape-recorded. I would be grateful if you would allow me to interview you at a place and time convenient to you. I can conduct the interview at your office or workplace, in a public place, or anywhere else that you might prefer.

The contents of this interview will be used for my assignment, which will include a final paper, as well as informal presentations to my classmates and/or potentially at a conference or publication. I will not use your name or anything else that might identify you in my written work, oral presentations, or publications. This information remains confidential. The only people who will have access to my assignment work will be my research supervisor and my course instructor. You are free to change your mind at any time, and to withdraw even after you have consented to participate. You may decline to answer any specific questions. I will destroy the tape recording after the paper has been presented and/or published which may take up to five years after the data has been collected. There are no known risks or benefits to you for assisting in the project, and I will share with you a copy of my notes to ensure accuracy.

Please sign the attached form, if you agree to be interviewed. The second copy is for your records. Thank you very much for your help.

Yours sincerely,
Tanzilah Chowdhury

Appendix B: Consent Form

Researcher name: Tanzilah Chowdhury

Phone number, email: [Phone Number], Tanzilah.chowdhury@utoronto.ca

Research Supervisor's Name: Anne Marie Cludleigh

Email: [Research Supervisor email address]

Consent to Participate

I acknowledge that the topic of this interview has been explained to me and that any questions I have asked have been answered to my satisfaction. I understand that I can withdraw at any time without penalty.

I have read the letter provided to me by Tanzilah Chowdhury and agree to participate in an interview for the purposes described.

Participant's Name (printed): _____

Participant's Signature: _____

Date: _____

Appendix C: Interview Protocol

Brief Introduction

Before we begin I just wanted to take this time to thank-you for participating in this research study. The topic I am researching is how environmental education programs are being implemented in classrooms. I will now ask you a total of 16 questions. I will ask you one question at a time giving you as much time as you need to respond. Feel free to take a few moments to gather your thoughts before you respond. I am genuinely very interested in your insights regarding environmental education so please to not feel nervous, this is an informal interview. Do you have any questions or concerns before we begin? Lastly, you may refrain from answering any questions without consequence and withdraw from this study at any given time.

Background Information

1. How many years have you been teaching (grade/subject)?
2. What was your undergraduate degree and program concentration?
3. How long have you been including environmental education in your teaching instruction?

Beliefs and Values

4. Tell me about your journey of how you became interested in environmental education?
5. How did your interest grow in environmental education?
6. How might you define "Environmental Education?"
7. I would like you to read the Ontario Ministry of Educations definition of Environmental Education from the document Acting Today, Shaping Tomorrow – A policy Framework for Environmental Education in Ontario Schools. What are your thoughts about the definition of Environmental Education?

> "Environmental education is education about the environment, for the environment, and in the environment that promotes an understanding of, rich and active experience in, and an appreciation for the dynamic interactions of:
>
> - the Earth's physical and biological systems;
> - the dependency of our social and economic systems on these natural systems;

- the scientific and human dimensions of environmental issues;
- the positive and negative consequences, both intended and unintended, of the interactions between human-created and natural systems.

Support

8. I would like you to think about the different professional development experiences you have had related to Environmental Education. Any courses? Workshops?
9. What are some resources that you have found that is been beneficial to your practice of environmental education?
10. In your opinion, how can we better support educators to implement environmental education in the classroom?

Practice

11. What are some strategies you employ when implementing environmental education in your classroom? or school?
12. Is there one strategy that is more effective to implement in your classroom? or school?
13. Is there one strategy that is your favorite to implement in your classroom? or school?
14. What are some challenges in implementing environmental education in your classroom or in your school?
15. You have shared so many insights and experiences related to Environmental Education. How might you communicate your philosophy of Environmental Education? What is your philosophy of environmental education?

Conclusion

16. You have already shared a lot about your experiences with environmental education, are there any other experiences related to environmental education that you would like to share?

Appendix D. Thirty-Two Recommendations by the Working Group of Environmental Education

1. Develop a provincial policy on environmental education as defined in this report, in collaboration with Ontario government ministries whose mandates are related to environmental issues, to signal the importance of environmental education and guide its implementation in Ontario schools through leadership and accountability measures, curriculum development, teacher training, and resources.

2. Establish a collaborative process involving ministry staff and external environmental education experts (formal education sector, postsecondary stakeholders, and community stakeholders) to develop standards of environmental education, based on the recommendations of this report and further research, that address the environmental knowledge, skills, perspectives, and practices to inform curriculum. This group will apply a draft of these standards to the revised Science and Technology, Grades 1-8, Science, Grades 9 and 10, Science, Grades 11 and 12,Technological Education, Grades 9 and 10, and Technological Education, Grades 11 and 12 curriculum documents and, through an iterative process of reflection and revisions, create a model for incorporating environmental education across the curriculum.

3. Undertake research, consultation, and dialogue as part of the policy development process.

4. Devise a strategic sequence for investments required at the level of system leadership, teaching and supports, and curriculum development and writing.

5. Reflect environmental education in accountability measures for school boards and schools, including the requirement that environmental education be included in school improvement plans.

6. Develop and implement transparent assessment mechanisms for monitoring student achievement in environmental education, including report cards and other assessment tools.

7. Assign responsibility for the implementation of environmental education programs and supports to dedicated Ministry of Education staff with environmental education expertise.

8. Develop and strategically implement guidelines for environmentally sound practices at the ministry, school board, and school levels.

9. Develop guidelines to foster positive parent engagement, and clarify the role that school councils can play in furthering environmental education.

10. Support school boards in their capacity to both develop board-wide environmental education programs and assign staff with expertise in education and the environment to monitor their development and implementation.

11. Increase the cross-curricular focus of environmental education by embedding environmental expectations and topics across all subjects, disciplines, and grades.

12. Map the scope and sequence of environmental expectations and topics across the curriculum, and incorporate review and revision of this map within the larger curriculum review process.

13. Incorporate in the front matter, and other appropriate sections of curriculum documents, information stressing the urgency of environmental education, defining strategies for implementation in each subject area, and providing examples of excellent environmental activities.

14. Through the curriculum review process, ensure that the elementary and secondary curriculum is written to include an environmental perspective, and that it meets the established standards as described in recommendation 2.

15. Ensure that the curriculum provides an opportunity for elementary students to study explicitly an environmental topic in each grade, and that curriculum expectations, particularly in the elementary grades, specify that students explore and investigate their local environment, and contrasting environments outside their local area, wherever reasonable for the subject matter.

16. In recognition that secondary students have reached a critical capacity to engage more deeply in environmental education, ensure that all secondary students are exposed to environmental education though the substantial presence of environmental education expectations in Grade 9 Geography, Grade 9 and 10 Science, and Grade 10 Civics.

17. Identify and support opportunities to engage students in environmental action projects within the current Civics course.

18. In addition to providing an environmental education focus across compulsory courses, ensure that secondary students have the opportunity to take at least one additional course with an environmental focus during their senior high school program. It is recommended that such a course option be available to students in Grade 11 to maintain continuity.

19. Identify interdisciplinary links for environmental education at the secondary level so that schools can offer integrated programs of courses with an environmental theme.

20. Develop a Specialist High Skills Major program offering in the environment, energy, or natural resources sectors, in accordance with ministry approved frameworks, and share

effective practices associated with these and other integrated environmentally themed learning opportunities.

21. Encourage and support cooperative education teachers and leaders to develop and share a wide variety of environmental placement opportunities that meet ministry policy and guidelines, through partnerships with local business education councils, training boards, and employers.

22. Collaborate with Ontario teachers' federations and affiliates, school boards, the Ontario College of Teachers, faculties of education, subject associations, and other stakeholders to develop and implement a strategy for ongoing professional development for teachers.

23. Provide ongoing professional development for teachers with a focus on content/knowledge, teaching in the environment, and using environmental themes to contextualize learning.

24. Use the natural and human-built environments as sites of discovery and active learning, involving projects that invite problem solving, as well as first-hand experiences that put students in touch with nature.

25. Provide provincial/regional training sessions for educators to build capacity and share effective practices, in collaboration with school boards, teachers' federations, faculties of education, subject associations, and other stakeholders.

26. Develop and support workshops and summer institutes on cross-curricular environmental education.

27. Consult with the Ontario College of Teachers about the need for an Additional Qualification course in cross-curricular environmental education.

28. Develop resources for teachers, using a variety of media including sample units of study, course profiles, teaching guides, and electronic resources such as e- learning modules and webcasts.

29. In collaboration with environmental experts, develop and distribute a teaching guide for environmental education modelled on Me Read? No Way! and similar ministry resources.

30. Facilitate access to environmental education resources developed by school boards and other stakeholders such as community groups, non- govemmental organizations, governments, and teachers.

31. Establish a working group in collaboration with the Ministry of Training, Colleges and Universities, Ontario teachers' federations and affiliates, the Ontario College of Teachers, faculties of education, and other stakeholders to develop and implement a strategy for effective pre-service training in environmental education for all teacher candidates, including environmental education as a teachable subject.

32. Consult with relevant ministries and education partners to ensure the adequate funding of outdoor education in Ontario.