Supporting Environmental Education: A Closer Look at the Ontario EcoSchools Program

By

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Abstract

This study conducted qualitative research on the experiences of two teachers conducting environmental education (EE) within the Ontario EcoSchools program. A scholarly literature review was conducted to reveal that it is important for teachers to engage in teaching EE, and that teachers experience challenges with EE in the areas of curriculum integration, teacher professional development, developing meaningful lessons, and the structure of the school system. Participants were selected using convenience sampling and each completed one semi-structured interview. The resulting data was coded for themes and sub-themes. These themes were then synthesized with the information presented in the literature review. The results revealed that integrating EE with the curriculum determined the amount of engagement with EE, and the Ontario EcoSchools program. The level of engagement was also shown to be linked to the personal opinions and values of the teacher. Further, the results revealed a need for teacher professional development in EE to contribute to a sense of preparedness to teach it, as well as a restructuring of the school system to reflect a focus on EE. Finally, the results showed that students are developing ecofriendly behaviours in terms of energy conservation, outdoor garden management, and recycling. They showed non-ecofriendly behaviours in terms of consistent proper waste sorting. Recommendations are made for an updated curriculum that reflects the integration of EE, and the Ontario EcoSchools program. Recommendations are also made for professional development for teachers in relation to EE, for more resources from the Ontario EcoSchools program to be made available online for teachers to access, and for more research to be conducted into what motivates students to properly waste sort.
Key Words: environmental education, Ontario ecoschools, sustainability, ecofriendly, conservation, challenges
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Dedication

Mom –

Without you, none of this would have been possible.
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Chapter One: Introduction

1.0 Research Context

A widespread phenomenon is that the current state of the natural environmental is in need of care. There has been an increase of attention and focus on environmental issues across the planet as of late (Malka, Krosnick, & Langer, 2009). One major issue is global warming, and the overall increase in the temperature of the Earth due to high atmospheric concentrations of carbon dioxide and other chemical pollutants (Malka et al.). It is the consensus of the scientific community that this warming is occurring, is being caused by humans, and is having overwhelming consequences on the natural environment (Malka et al.). On January 20\textsuperscript{th} 2016 it was declared that 2015 was the hottest year on record based on temperature data from NASA, the UK Met Office, and the US National Oceanic and Atmospheric Administration (Tollefson, 2016). Tollefson stated that the average temperature of 2015 was 0.16 degrees Celsius warmer than 2014. Sadly, global warming isn’t the only problem the planet is facing. On a much larger scale, human activities have entered the Earth into the epoch of the Anthropocene, where human activities are now the driving forces behind changes in the Earth’s environmental systems (Rockström, Steffen, Noone, Persson, Chapin, Lambin, Lenton, Scheffer, Folke, Schellnhuber, Nykvist, De Wit, Hughes, van der Leeuw, Rodhe, Sörlin, Snyder, Costanza, Svedin, Falkenmark, Karlberg, Corell, Fabry, Hansen, Walker, Liverman, Richardson, Crutzen, &Foley, 2009). This amount of pressure on the environment, and if humans do not respect boundaries to which the environment is degraded, can “trigger abrupt or irreversible environmental changes that would be deleterious or even catastrophic for human well-being.” (Rockström et al., 2009, p. 32).

In response to the environmental issues that the globe is facing, the United Nations Climate Summit was held in December 2015, where an agreement was made by one-hundred
and ninety-five countries to reduce pollutant emissions into the atmosphere, and to stop an overall temperature warming reaching two degrees Celsius (Baker, Callaway, Castelvecchi, Morello, Reardon, Schiermeirt, & Witze, 2015). Malka, Krosnick, & Langer (2009) indicate that while this is a positive summit was a positive step towards developing solutions for environmental issues, the overall global level of concern for the environment remains too low. Malka et al. have also shown that there is a connection between the demand a person has for solutions to environment problems, and their degree of care towards the environment. A portion of the degree of care a person has towards the environment can be traced to whether or not the person has current and relevant information about environmental issues (Malka et al). Based on this, it is vital for humans to develop a degree of care towards to the environment, and have relevant information accessible regarding environmental issues.

In terms of Ontario’s elementary schools, it is consequently extremely important that students receive environmental education (EE) that develops a sense of care towards the environment. In order to do this, the education must be relevant and meaningful.

1.1 Research Problem

In recognition of the importance of providing relevant and meaningful EE in Ontario elementary schools, the report *Shaping Our Schools, Shaping Our Future: Environmental Education in Ontario Schools* was released in 2007 by the Working Group on EE. The Working Group on EE (2007) defines EE as education that, “seeks to promote an appreciation and understanding of… the environment, and to foster informed, engaged, and responsible environmental citizenship” (p. 6). Meaningful EE incorporates sustainability education, embraces hands on learning, action projects, inquiry challenges, critical thinking/analysis, relevant information, and cooperative learning techniques (Working Group on EE, 2007). In this
report thirty-two recommendations were made for the Ontario Ministry of Education when developing EE.

In response to this report, the Ontario Ministry of Education (2009) released *Acting Today, Shaping Tomorrow*, a policy framework for EE in Ontario schools. This policy articulated how current EE must increase student understanding of how individual behaviour can affect the environment, and that students can individually develop environmentally responsible lifestyles. The Ontario Ministry of Education (2009) outlined how EE in Ontario schools pursues change in terms of personal values, social values, and organizational practices that exhibit behaviours that harm the environment. Additionally, it discusses the many ways in which teachers can implement EE in their classrooms.

These two documents both speak to the issue of conducting meaningful and relevant EE in Ontario elementary schools. EE has not been a major focus in schools in the past, and the presence of meaningful EE has become necessary in order to develop environmentally responsible citizens. As identified in the policy documents, teaching students about environmental issues and having them develop the critical thinking skills necessary to address these issues is crucial for the future of the environment. The research problem that this study addresses is the problem of EE in Ontario elementary schools. It looks at the EE that students are participating in elementary school through the lens of teacher’s experiences conducting EE.

**1.2 Purpose of Study**

In Ontario, both elementary and secondary schools that are a part of the York Region District School Board may participate in an environmental education program known as Ontario EcoSchools. This program tracks teachers leading environmental education in their schools, and provides a certification level to assist teachers in producing environmentally responsible citizens.
(Ontario EcoSchools, 2016). This program is explained in detail in Chapter 2 as part of the literature review.

Through the lens of the Ontario EcoSchools program, the purpose of this study is to explore the experiences of teachers conducting EE in their classroom, and larger school community. The experiences of teachers that are outlined in this study come from teachers who are working within the Ontario EcoSchools program, meaning they are conducting EE in a school that is a certified EcoSchool. It is relevant to assess the experiences of teachers participating in this program because the program’s goals are in close alignment with the Ontario Ministry of Education (2009) report, *Acting Today, Shaping Tomorrow* policy framework. These goals are categorized into the three themes of, “teaching and learning, student engagement and community connections, and environmental leadership,” (Ministry of Education, 2009, p. 8). Similarly, the mission of the Ontario EcoSchools program is “to nurture environmental leaders, reduce the ecological impact of schools, and build environmentally responsible school communities,” (Ontario EcoSchools, 2016). The EcoSchools program is already in place tracking EE in many Ontario elementary schools. Reviewing teachers’ experiences conducting EE within it is one way to determine whether or not students’ values towards the environment are changing. The experiences presented by the teachers particularly focus on how they are implementing EE in their classroom, benefits and challenges they face, and evidence of any type of change in student values toward the environment.

### 1.3 Research Questions

The key research question guiding this study is: What are teachers’ experiences conducting EE within the Ontario EcoSchools program? This question leads to the key subsidiary questions of:
1. Do teachers feel prepared to lead EE in their classroom and larger school community?
2. How are teachers currently leading EE in their classroom and larger school community?
3. What are some benefits and challenges that teachers currently experience leading EE in their classroom, and the larger school community?
4. What are teachers’ observations of students’ behaviour towards the environment (i.e. their attitudes, values, and practices) after their involvement in EE?

Each of these subsidiary questions has a connection to the Ontario EcoSchools program.

Question number one can relate based on whether a teacher’s feeling of preparedness, or lack thereof, is influenced by the Ontario EcoSchool program. Question number two relates in terms of the influence that the Ontario EcoSchool program has on the type of EE teachers choose to lead. Question three connects by determining whether or not the benefits and challenges are in anyway created and/or mitigated by the Ontario EcoSchools program. Finally, question four connects by identifying whether any of the seen changes (either negative or positive) are influenced by the Ontario EcoSchools program. By analyzing the experiences of teachers in this way, it is possible to identify the impact this environmental initiative has had on the environmental values and practices of students, as well as the larger school community.

1.4 Background of the Researcher and Positionality

At the time this study is being conducted, I am attending the Master of Teaching program at the Ontario Institute for Studies in Education, at the University of Toronto (OISE/UT). I have also completed an Honours Bachelor of Arts degree at the University of Toronto, with a double major in Environmental Geography and Philosophy.

Growing up in Canada, issues surrounding the environment and sustainability have always been important to me, and became a passion of mine during my undergraduate career.
The combination of learning about the physical environment, and developing critical thinking skills in the field of philosophy exposed me to how important it is for individuals to develop sustainable practices. I believe that change at the individual level is a major step to causing long-term environment change. That is why I also believe teaching sustainable practices to students at the elementary level is important. I believe instilling sustainable practices through EE in young students is a factor in creating future generations that care for the environment, and value sustainability.

Throughout my life I have lived in a small town that was always surrounded by forests and farms. In recent years, I have witnessed countless acres of land and trees in that same town torn down for subdivisions and other infrastructure to be built. This has caused the impact of polluting streams, and covering forest floors with garbage. Seeing this type of destruction further instills to me why environmental sustainability is important to address in elementary schools. EE and initiatives like the Ontario EcoSchools program are one way to make a positive impact on the environment in the surrounding communities of schools. Addressing local community issues is a necessary step to restoring the environment on a larger scale.

In terms of the Ontario EcoSchools program, I have a personal connection from when I was in high school. I participated in getting my school certified at the Bronze level. I remember the positive impact that the program had on me as a student. Putting work into making the school more ecofriendly, and seeing the results from receiving the certification was a short term success that made me feel as though my choices have an impact. I also gained factual knowledge about current environment issues, understanding what factors feed these issues, understanding how to devise relevant and effective solutions, and developed a strong school community based on care
for the environment. Now, as a teacher candidate I am eager to study the experiences of teachers who work within the program.

1.5 Overview of the Study

This chapter has provided the context of the research, the research problem, purpose, and research questions. In the name of transparency, it also provided a background of my own positionality. To address the research question I have articulated, I carried out a literature review focusing on the challenges teachers have previously expressed when conducting EE. I also interviewed two teachers working and conducting EE within schools certified as Ontario EcoSchools. Chapter two conducts a review of the current scholarly literature surrounding the topic of EE. It discusses the importance of EE, describes the Ontario EcoSchools program in more detail, and outlines challenges that teachers have faced when implementing EE. In examining this literature, a research gap emerged. This gap was the experiences of teachers conducting EE within the Ontario EcoSchools program. This study addressed that gap by asking the participants the nature of their personal experiences. Chapter 3 outlines the specifics of the research methodology in terms of approaches, procedures, instruments of data collection, participants, data analysis, ethical review procedures, and limitations/strengths. Chapter 4 provides the findings of the research in terms of themes devised from a coding scheme, and analyses the connections between the research data and the existing scholarly literature outlined in Chapter 2. Finally, chapter 5 discusses the implications of the research, and recommendations based on what has been discovered. It concludes with a summary and overview of this study.
Chapter Two: Literature Review

2.0 Introduction / Overview

The purpose of this study is to examine the experiences of teachers conducting EE within the Ontario EcoSchools program. As a base for this study, this chapter explores the scholarly discussion around EE. First, it will expand on the importance of EE, and its recent emergence in the Ontario education system. Then, more detail about the Ontario EcoSchools program will be provided. Next, it will examine teachers’ experiences implementing EE as expressed in the scholarly literature. These experiences are divided into four main themes. These themes are:

1. Inserting EE into the existing curriculum
2. Teacher professional development
3. Developing meaningful lessons
4. The structure of the school and education system

Each theme will be described in detail in terms of the challenges teachers’ face, the gaps in research that are present for each theme, and how this study will address the gap. After this, the chapter will address the larger overall gap in the scholarly literature, which is lack of investigation into teachers’ experiences conducting EE within the Ontario EcoSchools program. There is then brief discussion on how this study plans to address that gap. Lastly, this chapter will conclude with a summary of the information discussed in the literature review, and provide a brief introduction to the research methodology in Chapter 3.

2.1 The Importance of EE and its Emergence in Ontario

The planet Earth currently faces problems of pollution, loss of biodiversity, and overall destruction of the natural environment (Pedretti & Tan, 2010). The deterioration of the natural environment has caused EE in elementary and secondary schools globally to become a necessary
part of the education system (Pedretti & Tan; Fazio & Karrow, 2013). EE is a vital tool that can be used to inform younger generations of the problems the natural environment faces, and develop the critical thinking skills necessary to devise solutions for these issues.

In response to the changing physical climate, Roberta Bondar, along with the Working Group on Environmental Education (2007), wrote the *Shaping Our Schools, Shaping Our Future* report on EE in Ontario schools. The report stated that it is important to include EE at the elementary school level, as this is when students are young and beginning to shape their understanding of the natural environment (Working Group on EE, 2007; Ferreira, Grueber, & Yarema, 2012; Dyment, 2005). It served as a submission to the Curriculum Council, containing recommendations for reform and action in the direction of producing “environmentally responsible citizens.” (Working Group on EE, 2007, p. 3).

In accordance with this, the main goal of EE is to produce citizens that are ecologically literate. Ecological literacy, as described in the *Acting Today, Shaping Tomorrow* policy framework by the Ontario Ministry of Education (2009), is the ability to understand how “individual and collective behaviour affects the environment,” as well as how to critically assess current environmental issues in order to take action (p. 3). The goal of EE is not only for teachers to help develop students that are environmentally responsible citizens, but also to push students towards changing to sustainable practices and values in terms of the environment (Pedretti & Tan, 2010).

The Working Group on EE (2007) report, and the Ontario Ministry of Education (2009) policy framework were meant to address the issues of EE in Ontario elementary schools, however years later many of the same challenges to EE still remain (Fawcett, 2009). These
challenges are identified later in this chapter. Despite the challenges to EE, it is a crucial tool for developing attitudes of sustainability and environmentally friendly practices among students.

2.1.1 The Ontario EcoSchools program.

The mission of the Ontario EcoSchools program is “to nurture environmental leaders, reduce the ecological impact of schools, and build environmentally responsible school communities” (Our Mission, Ontario EcoSchools, 2016). This program was developed in 2002 as a response to the increase in demand for EE, and as a way to support schools increasing their environmental practices (Ontario EcoSchools, 2016). While this program runs at both the secondary and elementary level, this study specifically focuses on the program at the elementary level. The Ontario EcoSchools program currently spans across 52 school boards in Ontario, and is the only certification program that recognizes schools for their environmental learning. The fact that this is the only program that recognizes schools for their EE, speaks to the dominant presence that this initiative has across Ontario.

A school can be certified at the Bronze, Silver, Gold, or Platinum level based off of a set of criteria the school’s environmental practices are evaluated on (Ontario EcoSchools, 2016). Bronze is the lowest level of certification, and Platinum is the highest. In order to remain an Ontario EcoSchool each school must re-certify on a yearly basis. The six criteria that the Ontario EcoSchools program uses to evaluate the environmental practices of a school are:

1. Teamwork and Leadership
2. Energy Conservation
3. Waste Minimization
4. School Ground Greening
5. Curriculum
6. Environmental Stewardship

Teamwork & Leadership looks at the presence of an eco-team (club) within the school, in terms of student/adult representation, regular meetings, school communication, and student led environmental campaigns (Ontario EcoSchools, 2016). The program uses the Energy Conservation component to evaluate the daily practices of the school to reduce the overall amount of energy consumption. Similarly, the Waste Minimization component evaluates the school’s practices in minimizing and reducing the amount of waste produced. School Ground Greening refers to the program’s inquiry into the presence or development of an outdoor classroom, or school wide maintained garden. The Curriculum component refers to evaluating lessons within the classroom that have environmental education as their goal. Finally, Environmental Stewardship refers to school wide environmental campaigns that fall under any of the 6 evaluation criteria categories.

Examples of some campaigns that fall under the Ontario EcoSchool program certification are present in the Chris Hadfield Public School in Milton, Ontario (The Canadian Champion, 2015). This school is a Platinum certified EcoSchool, and has introduced campaigns such as stainless steel water bottles, assisting kindergarteners with properly recycling/composting lunch waste, and trips to a local university for education on how to make the school garden better for the environment, and healthier for students (The Canadian Champion, 2015).

2.1.2 Research on an EcoSchools program.

Fazio and Karrow (2013) examined 80 elementary schools in a south-central Canadian school district, to determine what elements support and inhibit EE in schools. In this study, the majority of focus group discussion with teachers centered on a type EcoSchools program with similarities to the Ontario EcoSchools program, without prompting from the researchers. Fazio
and Karrow outlined how these teachers discussed that there were still constraints to EE; however the EcoSchools program they were participating in was helpful in allowing teachers to increase their EE abilities. The study concluded with comment on how there are questions that remain on the effectiveness of programs like this, and whether or not they can be improved to enrich EE practices in schools. Fazio and Karrow’s conclusion points to a significant gap in the scholarly research on the Ontario EcoSchools program itself. This study fills that gap by examining and investigating what the experiences of teaching conducting within the Ontario EcoSchools program specifically are.

2.2 Challenges to Implementing EE

The main challenges to implementing EE can be divided up into four themes. These are:

1. Inserting EE into the existing curriculum
2. Teacher professional development
3. Developing meaningful lesson
4. Structure of the school system

These challenges are explored in the following subsections. It is important to note that the conflicts of EE are unique to the circumstances of each individual school. However, based on scholarly research these are the overarching main challenges that schools, teachers, communities, and students often face in regards to EE (Fazio & Karrow, 2013).

2.2.1 Inserting EE into the existing curriculum.

The Ontario curriculum in the elementary level contains a wealth of information, and teachers must maintain a class schedule that covers the entire curriculum throughout the school year. In Fazio and Karrow’s (2013) study of 80 Canadian elementary schools that was mentioned in the previous section, teacher’s consistently said that planning time and class schedule posed
the greatest challenge to implementing EE. Similarly, another study conducted by Pedretti and Tan (2010) of Ontario teachers revealed that the dense curriculum and misconfiguration between the Ministry of Education’s expectation of EE, and the curriculum documents themselves, is a significant challenge to overcome when including EE.

The curriculum creates further challenges to EE through the way it is organized and written according to specific subjects (Fazio & Karrow, 2010). Fazio and Karrow state that these subjects include Math, Science, Social Studies, Language Arts, and Physical Education. It is the job of the teacher to integrate EE in lesson plans for each of these subject areas. The study conducted by Fazio and Karrow showed that this leads to teachers presenting students with a collection of facts about the environment (ex. in a science lesson students learn facts about worm species), and less opportunities are provided for inquiry based learning (i.e. getting students to think about how problems that deal with the environment can be acted upon). It also showed inserting EE into discrete subject areas forces teachers to manipulate EE to fit specific curriculum requirements, and results in EE that is not as effective in transforming student’s attitudes towards with the environment.

This manipulation also leads to low priority being placed on EE, and this is detrimental to students because it limits their engagement with the global community (Manion & Mundy, 2008). In the Ontario Social Studies curriculum, Manion and Mundy describe how global education is introduced in grades 1-6. They also describe how global education includes EE through the lens of global dependence between people, a shared commitment to the sustainability of the Earth, helping others, and different perspectives. Manion and Mundy explored the concept of global education in the Ontario curriculum, and found that it is only included in the subject of Social Studies. They expanded on this fact, and outlined how this lack of integration of global
education in other discrete subjects leads to a neglect of EE, as the topic of EE is closely linked with global education. The study also showed that even when teachers do incorporate global education lessons, direct ones about environmental sustainability were often left out.

The gap in scholarly research pertaining to this section is the lack of information on how the Ontario EcoSchools program fits into the curriculum, and how it mitigates the challenges that EE has already faced when being inserted into the curriculum. The Ontario EcoSchools program uses Curriculum as one of its 6 criteria areas when evaluating the environmental practices of a school (Ontario EcoSchools, 2016). There is no scholarly research on whether or not the program readily lends itself to be inserted into the curriculum. By evaluating what the experiences of teachers’ are when trying to integrate EE into the curriculum, this study fills that research gap.

2.2.2 Teacher professional development.

Closely linked to the first challenge, teacher professional development is another issue that stands in the way of EE. This refers to the lack of teacher training in developing skills and action focused strategies for lesson planning for EE, both in initial teacher education programs and for working teachers (Hart & Nolan, 1999). Canadian case studies have shown that this gap in teacher training leads to adverse views about EE, sustainability, and decreases the level of comfortability teachers have teaching the subject (Falkenberg & Babiuk, 2013). Gwekwerere (2014) studied 300 Bachelor of Education students at a mid-sized university in Ontario, where the majority of pre-service teachers ranked their environmental knowledge as average, and stated that high school was their primary source of knowledge about the environment. Furthermore, the majority of these teachers stated that their desire to participate in EE initiatives was only average. Gwekwerere’s results demonstrated that the lack of teacher development for EE leads to a sense of apathy towards the environment among teachers. It also showed that teachers who are more
knowledgeable about the environment, show concern, and have positive attitudes towards EE are more successful at motivating students to develop attitudes of care towards the environment. It is because of this, that professional development in EE is crucial.

In a critical analysis of EE, Hart and Nolan (1999) state that teacher education for EE needs to take a problem and solution based approach, because that way, teachers develop the skills necessary for integrating practical problem solving lessons into the existing curriculum. This is a big step for EE, considering that there are still teacher education programs that provide absolutely no environmental or sustainability training (Falkenberg & Babiuk, 2013). It is not enough however, to simply introduce EE training into teacher education programs and teacher professional development (Pedretti & Tan, 2010). To accurately get student’s thinking to shift into more deep thought about the environment, the questions in teacher education must also be shifted (Hart, 2010). This is referring to a process of critical analysis, whereby teachers reflect on their own positionality and beliefs that are affecting the way in which they teach about the environment (Hart, 2010). Hart (2010) states that through this critical analysis process teacher education programs can also directly assist teacher in defining the areas of cultural practices that need to be altered, in order to promote sustainability. Hudson (2001) states that teachers who take part in this reflection will be able to teach EE that is relevant to the changing needs of the environment. This can only be done by a shift in the way in which educational professionals are trained for EE.

This shift was also defined by Blenkinsop’s (2014) article that described the characteristics required of a teacher who wishes to be eco-friendly. The first of these characteristics was lateral thinking, and getting students engaged in EE lessons by making new connections with the world. Next, Blenkinsop outlined anticipating the unexpected moments of
learning in the school day, and planning future lessons off of these moments. Reflections on one’s own beliefs and practice, as well as learning to work in an environment where many of the school structures aren’t available were two more characteristics that Blenkinsop defined. Finally, the study stated that a teacher must be able to recognize the parts of the local culture that are anti-environmental, and give students alternatives to these practice. While this is a good breakdown of how a teacher can act, it still poses a significant challenge to EE. As mentioned previously, teacher’s stated that class schedule and lesson plan timing posed significant challenges to EE (Fazio & Karrow, 2013). Incorporating all of Blenkinsop’s characteristics requires teachers that are already struggling with having enough time, to invest more time in lesson planning.

In this section, there was a gap in scholarly research in terms of how the Ontario EcoSchools program provides professional development for teachers. The official Ontario EcoSchools website contains a presentation that teachers can access for information and tips for running the program (Ontario EcoSchools, 2016). Additionally, the teachers in Fazio and Karrow’s (2013) study commented that their abilities in teaching EE have increased since participating in an EcoSchools program. Other than this information, there is no scholarly research that evaluates the effectiveness of this training, and whether or not it actually translates into higher quality EE. This study fills that void by investigating the experiences teachers have had with professional development in connection to the Ontario EcoSchools program.

### 2.2.3 Developing meaningful lessons.

Another widespread challenge to EE that teachers have expressed in studies is a discrepancy between what they think EE should be, and how it is actually taught in their classrooms (Pedretti & Tan, 2010; Gwekwerere, 2014). Developing lessons that successfully
engage the students in such a way that alters their attitudes towards the environment is a significant obstacle that EE faces (Pedretti & Tan, 2010). In order to overcome this challenge, the use of an outdoor classroom, or outdoor space, was sought after by EE lesson planning teachers (Pedretti & Tan, 2010). It has been shown that interactions with nature provide greater learning opportunities for students (Ferreira, Grueber, & Yarema, 2012). Greening school grounds and having students create an outdoor classroom is one way to increase the interaction that students have with the natural environment (Dyment, 2005). This combination of providing an increased amount of learning opportunities, and increasing student interaction with the environment provides a foundation for lessons that are engaging. Specifically, they are engaging in a way that changes the student’s attitudes toward the environment.

While the outdoor classroom idea provided teachers with a new outlet for developing engaging lessons, many challenges arose with using an outdoor classroom that need to be addressed. In recent studies, teachers have still expressed that they wish to use an outdoor classroom for EE (Dyment, 2005; Pedretti & Tan, 2010; Blenkinsop, 2014). Dyment’s (2005) study examined teacher use of the outdoor classroom, and found that teachers felt overwhelmed at incorporating another new EE initiative into lessons, were worried they were taking away from learning by being outside, and had concerns about classroom management during outdoor lessons. Pedretti and Tan’s (2010) study also showed that teachers were hesitant in using the outdoor classroom and local environmental issues for pedagogy, as they were concerned of localizing environmental issues too much and taking away from a global context. Blenkinsop (2014) found that another challenge to using the outdoor classroom for EE was keeping students engaged, and satisfying curriculum requirements.
A gap in research found in this area was whether or not the Ontario EcoSchools program has produced more meaningful lessons for teachers. This can be in terms of aiding the lesson planning process, or directly providing lesson templates and resources for teachers to use. Additionally, the presence of an outdoor classroom, or evidence of school ground greening is part of the 6 criteria that the Ontario EcoSchools program uses to evaluate the environmental practices of the school (Ontario EcoSchools, 2016). There is no scholarly research on how the program has addressed the challenges that arise with the use of an outdoor classroom, and if the teachers have found it effective in creating meaningful lessons. This study addresses that gap through asking the teachers what their experiences have been teaching EE within a program that promotes the use of an outdoor classroom.

2.2.4 The structure of the school system.

In addition to the challenges mentioned above, the structure of the school system introduces further complications for EE (Stevenson, 2007). Stevenson (2007) outlines a gap between what is taught in environmental awareness programs, and the action opportunities that are provided for students to enact their environmental awareness. In short, students need opportunities provided to them by the school, and their teachers, to practice their developed attitudes of protecting the environment (Pedretti & Tan, 2010). Stevenson articulated that this gap between education and action is due to the fact that schools have been structured in such a way where it is their job to convey facts to students, develop routine skills, and maintain prevailing social conditions. Successful EE according to Stevenson requires that students develop skills of critical thinking, it be revolutionary in nature, and encourage students to question underlying cultural values that lead to the degradation of the environment. Revolutionary thought and maintaining prevailing social conditions conflict with one another,
and so Stevenson outlines how the purpose of EE is in direct conflict with the dominant structure of schooling.

Another component of this conflict lies within the commonplace act of teachers conveying facts to their students, and then having the students apply this information to a set of questions that have a correct solution (Stevenson, 2007). In this process, Stevenson (2007) says that the student is not required to participate in higher order thinking, and results in the student not developing skills to practically assess real world problems. Stevenson therefore concludes that students are not developing the skills necessary to assess environmental issues either.

Further, Stevenson (2007) states how the stereotypical organization of the school day presents challenges to EE. This organization is one of students being confined in a single classroom, with one teacher and a series of classmates. The use of a different setting (ex. an outdoor classroom) then poses a challenge to the teacher, and their level of comfortability because it forces the teacher to approach teaching in a way without the structure of the classroom, and what they are normally accustomed too (Stevenson, 2007). When the teacher does not overcome their own level of comfortability, the same structure is used to teach EE in the classroom, and since the structure of learning in school is not conducive to producing the most effective form of EE, the result is poor quality of EE that students receive (Stevenson, 2007).

The gap in scholarly research here is present through the lack of information on how the Ontario EcoSchools program is addressing the discrepancy between the goal of EE, and the dominant structure of the school system. There is a gap in research on how, and if, the structure of schools affects the program. This study specifically speaks to this gap through the evaluation of teachers’ experience working within the Ontario EcoSchools program in a school that is structured in the way Stevenson (2007) mentions.
2.3 Conclusion

This chapter has discussed the increased demand for EE at the elementary school level. The increase in importance of EE has led to the identification of the main challenges that EE faces. These challenges can be separated into four main areas of:

1. Inserting it into the current curriculum
2. Teacher professional development
3. Developing meaningful lessons
4. The structure of schools

There is a wide range of scholarly research on how EE is implemented in schools, and the challenges that impede implementation of EE. There is a gap in research done on the effectiveness on the specific initiatives that have been, or are being, implemented to mitigate these challenges. An initiative in response to these identified challenges is the Ontario EcoSchools program. In terms of the Ontario EcoSchools program, there are no scholarly studies on its effectiveness. The official Ontario EcoSchools website states that the program is revised annually based on the feedback that is received from participating schools (Ontario EcoSchools, 2016). It would be more beneficial for the program to have scholarly research conducted on the effectiveness of the program, in addition to the user feedback that is already received. This study fills that gap by examining the teachers’ experiences, including benefits and challenges, conducting EE within the Ontario EcoSchools program.
Chapter Three: Research Methodology

3.0 Introduction / Overview

In this chapter the research methodology that was used to collect and analyze data for this study is outlined. First, it discusses the qualitative research approach procedure, and why the approach is relevant to this research topic. Next it describes the instrument of data collection, which in this case was a semi-structured interview protocol. This chapter then describes the participants in the study in terms of the sampling method used, the criteria for participation in the study, and a short biography about each teacher that participated. After this a description of how the data collected will be analyzed is provided, followed by a detailed explanation of the ethical review procedures involved in this study. The final section of this chapter discusses limitations and strengths of the research methodology. It concludes with a brief summary of the research methodology, and an introduction to Chapter 4.

3.1 Research Approach and Procedures

For this study a qualitative research approach was conducted. This approach involved five semi-structured interviews with teachers, and a review of the existing scholarly literature surrounding EE. The literature review determined the present themes regarding teachers conducting EE in elementary schools. The semi-structured interviews gathered data about teachers’ personal experiences conducting EE in Ontario elementary schools that are a certified Ontario EcoSchool. The results of the literature review and the semi-structured interviews were then synthesized and analyzed in terms of recurring themes.

A qualitative study uses an interpretive approach to analyze certain phenomenon (Creswell, 2013). Creswell states that the purpose of qualitative research is to give meaning to phenomenon based on the different meanings given to it by people. In the context of this study,
the phenomenon being explored is the experience of teachers conducting EE within the Ontario EcoSchools program. Meaning is given to the experience of teachers based on the different accounts given from each teacher interviewed. This is an effective method of research because it involves data collection in natural settings, and provides multiple points of view on one topic (Creswell). This approach was important in order to gather relevant data about teachers’ experiences working with EE in Ontario EcoSchools, and the multiple perspectives it brings.

The qualitative research design also enhanced this study because it permitted individuals to convey their own story (Creswell, 2013). The teachers participating in this study were essentially asked to convey a story about their experience conducting EE within Ontario EcoSchools. Additionally, conducting semi-structured interviews was effective because it produced data that lent itself to be categorized into themes (Roulston, 2010). This was extremely important for when the collected data underwent a coding process according to themes. These themes were analyzed in accordance with themes present in the scholarly literature review in Chapter 2.

3.2 Instruments of Data Collection

For this study, the sole instrument of data collection was a semi-structured interview protocol. A semi-structured interview gathers informative data that describes natural experiences in the world specific to the participants (Creswell, 2013; Fontana, & Frey, 2000). It is structured in terms of the researcher developing open-ended guiding interview questions (Turner, 2010). It is unstructured in terms of giving the researcher the freedom to change interview questions based on the interviewee (Turner, 2010). Turner (2010) explains that this prompts the researcher to feed off the interviewee, while still touching on the information areas that need to be covered. This method was appropriate as the aim of this study was to gather data on teachers’ experiences.
Using this method I was able to guide the interviews so that they covered the necessary topics, while also adapting to the interviewee and gathering answers in a way that suited them.

Based on these elements of structure and flexibility, this method of data collection gathers in-depth information and allows the researcher to be influenced by personal emotions (Fontana & Frey, 2000). This is a positive aspect, as it allows the interviewer to move from having a distant disposition to being engaged with the interviewee (Fontana & Frey, 2000). This was particularly effective because it allowed the participants to feel comfortable, and as though they were participating in casual conversation. Their comfortability increased their willingness to share in-depth personal experiences. Semi-structured interviews were also effective because they added richness and rigor to the study (Tracy, 2010). Tracy defines richness, or rigor, as the variety of information present in the data collected. Incorporating a degree of rigor in the study is important because it contributes to a higher quality of qualitative research. This can be done by conducting a number of interviews, asking in-depth interview questions, maintaining detailed transcripts, and ensuring the accuracy of transcripts. This study incorporates rigor by conducting two interviews with open-ended questions, and by completing extremely thorough transcripts that were checked for accuracy by participants.

### 3.3 Participants

In this section sub-headings are used to outline the sampling criteria for teacher participant recruitment. This includes the sampling procedures for locating teachers, and a short biography of each participant.

#### 3.3.1 Sampling criterion.

The first participant criterion for this study is that the teacher must have at least 5 years of prior teaching experience. This study aims to examine teachers’ experiences, and teachers that
have been working for 5 years or more are likely to have a larger quantity, and broader range of experience to call upon. The next criterion is that the participant does not have to have shown leadership in terms of conducting EE in their own classroom, and the larger school community. This is extremely important, as this study is evaluating the experience of all teachers conducting EE under the Ontario EcoSchools program. This leads to the next criterion, which is that the school the teacher is teaching at must be currently certified as an Ontario EcoSchool. This is necessary because the study is looking at teachers’ experiences conducting EE within the Ontario EcoSchools program, and the teacher cannot work within it if their school is not certified. The final criterion is that the teacher works within the York Region District School Board (YRDSB), as the Ontario EcoSchools program operates under this board.

3.3.2 Participant recruitment.

The sampling procedure for this study followed a purposeful method. The participants were chosen based on the anticipation that their information will be relevant to the research questions being studied (Gentles, Charles, Ploeg, & McKibbon, 2015). Therefore, participant teachers were chosen based on the anticipation that their experiences were relevant to EE and the Ontario EcoSchools program. Participants were recruited in this way through the distribution of an overview of the study, and participant criteria to teachers in the YRDSB. I provided all of my own contact information, and followed up with teachers to find out if they posed an interest. Using this method guaranteed that the participant teachers in the study were willing. This sampling method also incorporated a non-random convenience style, meaning that some participant teachers were selected based on convenience and accessibility (Sedgwick, 2013). During my time in the MT program at OISE I have been in environments where I developed a
network of mentor teachers, and principal contacts. I used this network to recruit participants for this study.

3.3.3 Participant biographies.

This section provides a brief description of the two participating teachers in this study.

3.3.3.1 Participant 1: Jennifer. The pseudonym assigned for participant teacher one is Jennifer, and she identified as a cisgender female. Jennifer was teaching a grade four class at the time of this interview, and had been teaching for a total of 19 years. In the past Jennifer has taught grades 1, 2, 3, 4, 6, and special education. The date of her interview was September 29th 2016. It took place in the school Jennifer was teaching at, in her own classroom. Jennifer has minimal engagement in integrating EE into her teaching practice in the past.

3.3.3.2 Participant 2: Sarah. The pseudonym assigned for participant teacher two is Sarah, and she also identified as a cisgender female. Sarah was teaching a grade seven class at the time of this interview, and been teaching for a total of 12 years. In the past Sarah has mainly taught grades seven and eight, however has taught the primary grades during prep coverage for other teachers. The interview took place on October 20th 2016. It took place in her classroom, within the school that she was teaching at. Sarah has had some engagement with integrating EE in the past, is someone who cares about the environment and enjoys being outdoors. Based on Sarah’s interview, she has strong feelings towards caring for the environment, and getting others to do the same.

3.4 Data Analysis

The data analysis for this study began by transcribing the interviews conducted with the participants. As Creswell (2013) outlines, the transcripts were coded based on recurring phrases and ideas throughout the data. After this coding process, the themes were synthesized into
smaller groups based on similarities. Then the groups were again synthesized into overall themes, with relevant sub-sections.

The overall themes presented in the data were then compared with the themes present in the scholarly literature review. This was an important step, as it outlined the theory-method link, where the research findings speak to the themes present in the literature underlying the study (Roulston, 2010). Roulston (2010) explains that this type of analysis is effective, because it describes how the information gathered in the interviews relates to the research questions of the study. Relevant to this study, this type of analysis gathered information that speaks to the research gap identified in Chapter 2. The data analysis also took into consideration any null data present, discusses why this data is important, and what it means in terms of the information gathered in this study.

3.5 Ethical Review Procedures

This study was designed so that there were minimal risks to teachers participating. The ethical review took into consideration the issues of confidentiality and consent, risks of participation, right to withdraw, member checks, and data storage. Informed consent refers to consent by the subject to participate after they have been informed in detail about the research study (Fontana, & Frey, 2000). Fontana and Frey define confidentiality as withholding the identity of the participant. These are both important, as they ensure the participant is willingly participating in the study and able to remain anonymous. To guarantee this, participants were assigned a pseudonym, and no identifying traits related to the participant’s school or students were identified. Participants were required to fill out a consent letter (Appendix A), where they were given an overview of the study, its ethical implications, and participation expectations (a single 45-60 minute semi-structured interview). The consent letter also explained that the
participant had the right to withdraw from the study at any point in time, and could refrain from answering any question they did not feel comfortable discussing. The consent letter also included that the interview was to be audio-recorded, and remain on an electronic storage device for a period of five years. After this time, it will be destroyed.

It is also ethically important in a research study to protect the participants from any degree of physical or emotional harm (Fontana, & Frey, 2000). There are minimal risks to participants, and this is because interview questions speak to personal experiences. Some participants may feel uncomfortable, and emotionally connected to their experiences. This risk was minimized by reminding participants that they did not have to answer any question that made them feel uncomfortable, and that they had the right to withdraw from the study at any time. I sent participants a copy of the interview questions (Appendix B) prior to the interview, and this was so that the participant was not taken by surprise by any question.

Misinterpretation of participant data was minimized by conducting member checks. In a member check, the interviewee can check a transcript of the interview to ensure that the researcher developed a proper understanding of the information the participant was trying to convey (Roulston, 2010). My study conducted member checks by sending participant teachers transcripts of the interview, and allowing them to request changes where necessary. Changes were made at the request of the participant.

3.6 Methodological Limitations and Strengths

The first limitation to this study was the use of a convenience and purposeful sampling method. This was a limitation because it is not a sampling method that is random. A random sampling method is where a sampling frame (ex. list of all people in a population) is drafted, and each member of the frame has the same probability of being chosen (Sedgwick, 2013). Sedgwick
(2013) suggests that this method provides external validity to the research, as the results can be
generalised to the larger population. When the participants are chosen in a convenient and
purposeful way, the results cannot be generalized to provide information about the larger
population (Sedgwick, 2013). In the case of this study, the teachers were chosen on purpose and
conveniently. Therefore, their experiences cannot speak to the experiences of the entire teacher
population in the YRDSB. Another limitation is that only two teachers were interviewed, and
only one interview conducted for each teacher. The experience of only two teachers cannot be
generalized to represent the larger teacher population in the YRDSB. It is also possible that a
teacher’s view expressed in the interview is relevant to the time and date they were interviewed
on. On a different time and date, a different experience may be expressed, and that is why it is a
limitation to only conduct one interview per participant.

Another limitation is that this study cannot interview parents, students, or conduct
classroom surveys and observations. Parents and students are both involved in the practice of EE
and the Ontario EcoSchools program. Each of these parties would be able to speak to the guiding
research questions, and it is a limitation that the study is not able to gather information from
them. Not being able to conduct classroom surveys and observations is a limitation because the
researcher is not able to gather firsthand experiences related to the guiding research questions.

One strength to using a purposeful and convenience sampling method is the guarantee
that the information collected in the interviews is relevant to the research topic (Gentles, Charles,
Ploeg, & McKibbon, 2015). It was guaranteed that the participants had experiences related to EE
and the Ontario EcoSchools program. The semi-structured interview design also counts as a
strength to this study. It provided the opportunity for teachers to give in-depth detail about their
experiences, which is extremely useful as the main research question is based on assessing the
personal experiences of teachers. Conducting interviews with teachers can also be seen as a strength because it recognized the hard work and dedication that teachers put into their practice. Specifically, it gave meaning to the EE that the participant teachers have been providing, and validity to an area of the practice where they have invested time and resources. Also, the semi-structured interview design set the stage for teachers to reflect upon their current practices teaching. This can be seen as a strength because their reflection may have led to the altering of current EE practices.

3.7 Conclusion

In this chapter has provided a complete outline of the research methodology for this study. The key methodological decisions made were to use a purposeful/convenience sampling method, and to use semi-structured interviews in a qualitative design. This allowed the gathering of detailed data about the lived experiences of the participants, and the correct balance of flexibility/structure to do so. It also ensured that the interviews would yield data relevant to the research topic for this paper. Another methodological design chosen was to use the sampling criteria of teachers who have had at least 5 years of experience teaching, have not necessarily shown leadership in terms of EE, work in the YRDSB, and teach in a school that is a certified Ontario EcoSchool. This criterion was developed to ensure that the teachers interviewed had a range of experiences, were interested in assisting research about EE, and had experiences relevant to the Ontario EcoSchools program. This chapter then described that the data was analyzed using a coding process to discover recurring themes. These themes were synthesized with the themes present in the literature review in Chapter 2. The ethical review protocol was then described in terms of confidentiality and consent, risks of participation, right to withdraw, member checks, and data storage. Next, some limitations and strengths present in the structure
and methods of this study were discussed. These strengths and limitations were present in the sampling method, sampling criteria, and instrument of data collection. In the following chapter, the research findings are reported on.
Chapter Four: Research Findings

4.0 Introduction / Overview

This chapter presents the analyzed data of the semi-structured research interviews, and discusses the findings that have emerged. When considering the analysis of this data, it is important to keep in mind the guiding research question of this study: What are teachers’ experiences conducting environmental education EE within the Ontario EcoSchools program? The purpose of this study is to determine what teachers’ experiences are and to fill the gap in scholarly literature of teacher experiences working within a certified Ontario EcoSchool and conducting EE. Two semi-structured interviews were conducted with the participants of Jennifer and Sarah. Jennifer teaches grade four, and Sarah teaches grade seven. The data was analyzed and coded to determine emerging themes and subthemes. Connections are made between the participants’ experiences expressed in the data and the experiences that teachers have expressed in the literature, as described in chapter two literature review. The research findings are organized into the four main themes of:

1. Factors affecting the way EE was taught
2. Teacher professional development
3. Structure of the school system
4. Evidence of ecofriendly and non-ecofriendly behaviours

In order to provide more detail and discussion about the research findings, each of these overall themes has been divided into subsequent sub-themes. First, this chapter will discuss the theme of factors influencing the EE that was taught in the participants’ classroom. This theme is divided into the sub-themes of inserting EE into the curriculum, developing meaningful lessons, and the influence of personal values. Then, the theme of teacher professional development, or
teacher professional training, will be discussed. This theme contains the sub-themes of teachers’
sense of preparedness to each EE, and teachers’ perceptions on whose responsibility it is to teach
EE. Next, the emerging theme of the structure of the school system in Ontario will be explored.
This theme divides into the sub-themes of lack of time, and current priorities in the school.
Finally, the theme of the evidence of ecofriendly or non-ecofriendly behaviours in students will
be discussed. In this theme, the sub-themes emerge of eco-friendly behaviours in energy
conservation, the outdoor garden, and recycling, as well as non-ecofriendly behaviours in terms
of waste sorting. For each theme, there is a brief description provided, and then the data from the
research interviews is reported on. After this, the research findings are situated within the
existing literature. The chapter concludes with a summary of the findings, as well as discussion
on the implications these findings have for Ontario EcoSchools, and the next steps in the field of
EE.

4.1 Theme One: Factors Affecting the way EE was taught

In their respective interviews, the Jennifer and Sarah both described experiences that
indicated factors affecting the way EE is taught. Within these factors emerged the sub-themes of
inserting EE into the existing curriculum, developing meaningful lessons, and personal values in
regards to the environment. In this section, each sub-theme is discussed in terms of research
findings, and context within the scholarly literature.

4.1.1 Sub-theme one: Inserting EE into the curriculum.

At multiple points in both interviews, each participant discussed the idea of incorporating
EE into the existing curriculum requirements when deciding to teach it. Jennifer mentioned how
she doesn’t teach “anything really overly formal” when it comes to EE. When asked if her
school’s certification as an Ontario EcoSchool contributed to the way she taught EE, she pointed
out that “you have to find some curriculum connections.” Jennifer mentioned that while she does not teach a separate unit for EE, she does try to incorporate it into the subject of science. A challenge for Jennifer when integrating EE was the grade four curriculum, and finding multiple opportunities for integration within it. Jennifer noted that the amount of opportunities for integration is different for each grade. This challenge was a contributing factor to Jennifer not spending as much time formally teaching EE.

Sarah’s interview also included discussion on integrating EE within the curriculum. She mentioned that “in geography you can always relate [EE] back,” and that she tries “fitting [EE] into literacy.” Sarah did not articulate integrating EE as a huge challenge; however it is important to note that she only mentioned two subjects where she integrates EE. It is interesting that Sarah mentioned the subject of geography, because it connects with Jennifer’s point that different grades have different opportunities for integration. The grade four curriculum does not have the subject of geography, whereas the grade seven curriculum does (Ontario Ministry of Education, 2013). This validates Jennifer’s point that the challenges you experience integrating EE can depend on the grade level you are teaching.

The scholarly literature surrounding the topic of integrating EE into the curriculum discusses the many challenges that teachers may face. Fazio and Karrow (2013), and Pedretti and Tan (2010), conducted studies that revealed integrating EE to fit the Ministry of Education’s expectations posed a significant challenge for teachers. Karrow and Fazio (2010) also have articulated that the subject specific structure of academics (ex. math, science, literacy, physical education) poses another challenge for teachers trying to integrate EE, because they must manipulate EE to fit a multitude of specific requirements. Similar to this literature, Jennifer’s and Sarah’s answers both reflect specific subject areas where they integrate EE, and that there are
challenges when doing so. Jennifer said that the curriculum specific to the grade level being taught can pose a challenge. Sarah demonstrated a challenge for integrating EE by only indicating two subjects where EE is integrated in her room.

Despite the fact that the Ontario EcoSchools program uses curriculum integration as one of its evaluation criteria, neither Jennifer nor Sarah mentioned turning to it as a resource when trying to integrate EE. They also indicated that the fact that their school was certified as an Ontario EcoSchool did not contribute to the EE that they teach. The experiences of Jennifer and Sarah suggest that the Ontario EcoSchools program does not readily lend itself to be inserted into the curriculum. This raises the question as to why it does not lend itself, and what can be done to make it more easily integrated with Ontario curriculum requirements.

4.1.2 Sub-theme two: Developing meaningful lessons.

Each participant expressed how they believe it is important to have lessons that are meaningful, engaging, and relevant for students. In terms of meaningful lessons for EE, Jennifer stated that as a teacher you must connect “to [the students’] own lives in some way… You really have to be able to connect [EE] to something meaningful, I think, to make it stick.” Similarly to Jennifer, Sarah expressed her belief of the importance of meaningful lessons in EE when she stated that her teaching style is “gear[ed] towards what the students are interested in.” These answers show that both participants believe conducting meaningful EE lessons is important and an influencing factor when deciding the ways that EE is incorporated in their classroom. The scholarly literature expresses how teaching EE in a meaningful and engaging way is necessary for developing environmentally friendly behaviours in students (Pedretti & Tan, 2010; Gwekwerere, 2014). Jennifer’s and Sarah’s answers are in alignment with the significance that Pedretti and Tan, and Gwekwerere place on conducting meaningful EE.
As a means for conducting meaningful EE, the Ontario EcoSchools program evaluates the presence of a garden or outdoor classroom when assessing a school for a certification level. Jennifer and Sarah mention how each of their schools have a garden and that the eco-team that takes care of it. Jennifer stated that she had taken her class out to it before, while Sarah has not. The important point here is that both teachers expressed the eco-team as the people responsible for the maintenance of the garden. At Sarah’s school the eco-team is comprised of only “10-15 students,” which is a small portion of an entire school population. Despite the fact that Jennifer and Sarah believe meaningful EE important, neither teacher articulated that they utilized the garden with their class as a way to create opportunities for meaningful learning. Ferreira, Grueber, and Yarema (2012) conducted research that revealed interaction with the natural environment creates meaningful learning opportunities for students. Dyment (2005) also confirmed that an outdoor classroom or garden increases students’ meaningful interactions with the environment. The experiences of Jennifer and Sarah adds to this literature, by showing that even when tools for meaningful learning opportunities are available (like the garden), and even when the teachers personally believe creating meaningful lessons is important, these tools aren’t always being utilized by teachers in the classroom. This suggests that a large number of students in Ontario Ecoschools are missing out on an opportunity for meaningful learning in EE and raises the question as to what changes the program can make to mitigate this.

4.1.3 Sub-theme three: Personal opinions and values.

In their respective interviews, Jennifer and Sarah were asked to describe their own personal experiences. It was very evident in each interview that the opinions and values the participant held towards the environment were influencing the EE that was taught in their
classroom. In this sub-theme, the participant’s personal beliefs towards the importance of EE emerged.

When asked her opinion on the value of environment education Jennifer answered that:

Sadly, I don’t think I’m really the best example of the best eco-person in the world, but I do recycle… I think [EE] is important for kids because of the planet, you know all the things that are happening in the world and global warming… I think that it is important for them, and something that I never grew up with.

There are two significant parts to Jennifer’s response. The first is her mention of not partaking in EE growing up, and the second is her honesty about not being the best example of an eco-friendly person. These points are significant because they suggest a connection between Jennifer’s past habits and values towards the environment, and her values towards it now. Jennifer also expresses later on in the interview that she hasn’t taught a whole lot of EE.

Sarah was also asked her opinion on the value of environmental education. She responded by saying “I definitely think it’s important because I don’t think kids nowadays are educated in the issues that are going on in our environment.” Sarah expressed how, as a teacher, she reflects on her own practice, and reminds herself that it is important to make time to teach EE. Sarah stated that if “you don’t deem [EE] as being a necessity or important,” you are less likely to make time and teach it. Sarah’s answers indicate that she personally believes EE is important, so she makes time for it in her class. It also indicates that if a teacher were to personally believe EE as non-important, there is less of a chance they will conduct EE.

In the literature, Moseley, Huss, and Utley (2010) have articulated that teacher beliefs are important, and that more research needs to be done in the areas of how these beliefs affect EE. Another study by Hwang (2009) focused on the personal experiences of teachers conducting EE
and revealed that the teacher’s activities and behaviours are not solely based on curriculum demands, but also on their own pedagogical beliefs as well. Sarah’s experiences completely fall in line with this research, as she explicitly states how her opinion and the opinions of other teachers implicate the EE taught in the classroom. Her answers support the idea that there is indeed a connection between teacher’s personal opinions, and what they teach.

Jennifer’s answers align somewhat with this research because she mentions not participating in EE growing up, that she personally believes she is not the best ecofriendly person, and as a result does not conduct a lot of EE in her classroom. Jennifer’s answer also contrasts to the existing literature, because she explicitly states EE is important. Based on Jennifer’s interview, she is moderately interested in EE, and yet she still doesn’t teach it a whole lot in her class. This suggests a disconnect between her personal beliefs and what she teaches in her classroom. This suggests that a teacher’s personal opinions aren’t the sole factor influencing what they teach and sometimes are not the overriding factor either. Or, Jennifer’s statement that she is not “the best ecofriendly person,” might suggest that she only moderately thinks EE is important. This would account for her lack of conducting EE, and suggest that there needs to be stronger personal values than just stated beliefs to make a teacher likely to conduct EE. More research needs to be done on the extent to which a teacher’s personal beliefs affect what they teach. In terms of the Ontario EcoSchools program, it suggests that a focus on changing teacher’s personal values towards the environment might be a necessary step for developing more ecofriendly schools.

4.2 Theme Two: Teacher Professional Development

Teacher professional development refers to the training that teachers are given to develop the skills necessary to teach a certain subject area. In regards to EE, teacher professional
development would mean training teachers on the best ways to teach EE. In this section, the data analysis resulted in the two sub-themes of the teacher’s feeling of preparedness to teach EE and the perceptions on whose responsibility it is to teach EE as an Ontario EcoSchool.

4.2.1 Sub-theme one: Teachers’ sense of preparedness.

Each participant was asked whether or not they felt prepared when beginning to teach EE as a teacher. Jennifer answered, “No, …I wouldn’t think so, no.” When asked whether or not she felt prepared to teach EE, Sarah responded with, “Umm, not really, but just knowing I guess kind of the basics myself, I was able to [teach EE].” The fact that both participants said they felt unprepared may indicate a lack of teacher professional development in EE. Jennifer agreed that if she were given training and felt more prepared, she would teach EE more in her classroom. Sarah noted that once she had the opportunity to practice teaching EE, as well as the learning material she was provided with, she felt more prepared to teach it. As a teacher currently being trained in the Master of Teaching program, I feel as though I have been prepared to teach EE. Therefore, a large part of the problem with teacher’s feeling unprepared may lie within experienced teachers. A way to mitigate this issue would be to have increased professional development on EE for experienced teachers.

This data connects to a challenge that teachers face overall in regards to teaching EE as outlined in the scholarly literature. It aligns with Hart and Nolan’s (1999) findings that there is a lack of teaching training for EE as well as Falkenberg and Babiuk’s (2013) findings that this leads to low comfort levels teachers feel to teach EE, thus making it more likely that they do not teach it. Jennifer’s answer echoed those findings completely, by demonstrating a correlation between her discomfort with teaching EE, and her tendency to not teach it. Sarah’s answer
showed that, after she was given learning materials and some professional development opportunities, she felt more prepared to teach EE.

Each participant was then asked if their school being certified as an EcoSchool contributed in any way to helping them feel prepared to teach EE. Sarah answered with “not really” and Jennifer indirectly responded by saying she would “probably not” turn to the program when incorporating EE. Additionally, each participant was also asked how well informed they felt they were about the Ontario EcoSchools program. Jennifer said she felt “somewhat [but] not fully” informed, and Sarah said “yes and no… I know our school does it.” These statements show that the participants were probably not adequately informed about the program. This adds to the scholarly literature by suggesting that, even when initiatives to help the teacher’s develop skills for teaching a specific subject are present in the school, they may still not be useful if teachers are not sufficiently aware of them or if they do not receive specific training. This indicates that teacher professional development on the Ontario EcoSchools program itself is needed.

4.2.2 Sub-theme two: Perceptions on the responsibility to teach EE.

This sub-theme emerged from each participant’s mention of the eco-team in their school, and the teacher that leads this team. Jennifer described her school planting trees and included that “this is the eco-team that does it, the group of kids.” She also mentioned how in her classroom she does talk about the Ontario EcoSchools program a little bit, and added “but I’m not on that team.” Sarah said that “I know that there is a teacher that [EE] is kind of their passion and what they do. I know that we also within the school have a garden that [the eco-team] takes care of.” Present in both of these responses is the idea that it is the responsibility of the eco-team to participate in the acts of being eco-friendly within the school. The idea is not present that it is the
job for the school as a whole to participate in being eco-friendly. Sarah’s statement that there is a teacher whose passion is EE indicates the idea that EE is only the responsibility for the teacher that takes on that role.

There is a significant gap in the scholarly literature on whether or not the Ontario EcoSchools program indirectly places the responsibility of EE on a certain teacher in the school, and on a certain team. The data from this study indicates that the program may contribute to teachers’ perceiving that it is not their responsibility to teach EE or participate in the program. This aligns with the gap identified by Fazio and Karrow (2013) that states there were questions that remained on the effectiveness of programs like this and more research needed to be done. This indicates more research needs to be done on whether or not all teachers feel responsible for EE when their school is a certified Ontario EcoSchool.

4.3 Theme Three: Structure of the School System

The structure of the school system refers to the ways in which the school is set up in terms of schedules and initiatives that are being focused on. Jennifer and Sarah touched upon these structures in their respective interviews with emerging subthemes including the lack of time and the school’s current focus.

4.3.1 Sub-theme one: Lack of time.

The typical school day and school year are set up so that students take certain scheduled classes and teachers must fit all of the curriculum requirements into these classes throughout the school year. This can lead to teacher’s feeling as though they are pressed for time. Sarah directly stated that “as a teacher, you always feel like you don’t have enough time.” She also added that in terms of making time to teach EE, “even if it’s just for a short period of time, …[try] to carve out that time.” Jennifer, on the other hand, does not directly state that she feels rushed for time
and that this is a constraint on her EE; however, she does say that in regards to EE that “it is not so much me talking about, it is someone else.” Jennifer also states how she doesn’t teach EE as its own unit. Both of these sentiments could imply that there is not as much time for Jennifer to talk about EE herself in the classroom or to teach it as its own unit.

Fazio and Karrow (2013) found that time was a huge obstacle for teachers trying to implement EE. Sarah’s mention of feeling rushed as a teacher and Jennifer’s evidence of not making time to teach EE fits with this research. This speaks to the larger issue as to whether the structure of the typical school day and school year should be modified to incorporate EE. Stevenson (2007) discusses how the current structure of schools like this does pose a significant challenge for EE and for teachers. Further, this raises the question as to whether or not the Ontario EcoSchools program should be modified in a way that overcomes this challenge of the structure of the school year, and time.

4.3.2 Sub-theme two: Current focus of the school.

In every school, there are a multitude of issues that need to be addressed. Practically, it is nearly impossible for a school to focus on each issue with extreme focus. In the interviews conducted, the focus on teaching EE as an issue within the school was mentioned by the participants.

In Jennifer’s interview, she was very open about the fact that she did not teach EE all that much. One reason she gave to further explain this was, “It’s just the fact that [EE] hasn’t been a big push. They’re always pushing something else.” Meaning, it hasn’t been an issue that the school where Jennifer was teaching at wanted teachers to focus on in the past, and so she has never really incorporated it into her classroom. Sarah on the other hand did not directly mention her school pushing EE, however she did agree with my statement when I said that in the past it
wasn’t a huge push, or focus. Her agreement indicated that she believes whatever is being pushed as an issue to focus on in the school, does have some kind of influence on what the teachers teach.

Jennifer’s statement is significant because it speaks to a gap in scholarly research, on whether or not issues teachers are being told to focus on affects what they teach. This structure of focusing on certain issues at certain times may be indirectly discouraging teachers from focusing on the other issues, like EE for example. More research is needed to be done in this area to determine the extent to which this occurs. It also raises the question as to whether the Ontario EcoSchools program is forceful enough in schools that teachers feel it is a push for them to teach. More research needs to be done in this area as well.

4.4 Theme Four: Evidence of Ecofriendly and Non-Ecofriendly Behaviours

This theme looks at the experiences that the participants have had in observing ecofriendly and non-ecofriendly practices by students in the school. It is divided into the two sub-themes of evidence of ecofriendly behaviours being developed, and evidence of non-ecofriendly behaviours present. Each sub-theme will be discussed in terms of how these behaviours relate back to the Ontario EcoSchools program.

4.4.1 Sub-theme one: Perceptions on ecofriendly behaviours: Energy conservation, the outdoor garden, and recycling.

This sub-theme discusses the experiences of the participants seeing that their students are developing environmentally friendly behaviours. Jennifer described the environmentally friendly behaviours in her class by stating, “Their recycling is pretty good… and they’re good with conserving energy with the lights, because we turn the lights off a lot.” Jennifer also mentioned at multiple points in her interview that the school had a garden. Sarah said that “the garden [is] a
big thing at our school” and was the biggest evidence of environmentally friendly behaviours being developed.

The evidence of these ecofriendly behaviours developing are in alignment with Pedretti and Tan’s (2010) article, as well as Ferreira, Grueber, and Yarema’s (2012) article. Each of these articles articulates how the use of an outdoor classroom that produces interaction with the natural environment, is more likely to develop environmentally sustainable behaviours in students.

The mention of the garden, as well as a class improving on recycling, suggests that the EcoSchools program is helping to develop ecofriendly behaviours in students. The amount of waste a school produces, as well as the presence of school ground greening, like a garden, is taken into consideration by Ontario EcoSchools when certifying a school (Ontario EcoSchools, 2016). The evidence of these behaviours indicates that the program should keep these certification qualifications in place and even go more into depth with them, to further along the development of ecofriendly behaviours.

4.4.2 Sub-theme two: Perceptions on non-ecofriendly behaviours: Waste sorting.

The interviews conducted suggested that, even though a school is a certified Ecoschool, there are still non-environmentally friendly behaviours taking place. For example, Jennifer said that for her class, she has seen evidence of non-ecofriendly behaviours with the green bin. Jennifer said “the green bin is the worst thing, because they always tend to want to throw things in the garbage.” Sarah described how her class has a green bin, a garbage bin, and a recycle bin. She stated that “a lot of the times kids don’t know what goes where… That is probably the biggest thing, not putting things in the proper container.” Sarah also expressed that she believes,
Sometimes its laziness… Even those [students] that do make an effort, if they’re late to get outside, they are more concerned with getting outside at this age than thinking I need to stop and figure out which container to put this [garbage] in.

Each participant articulated how using the right type of bin is an issue in their classroom, and school. This suggests that, even though the Ontario EcoSchools program evaluates the waste amount in a school, there are still students struggling to know what goes where. This indicates a need for more emphasis on what type of waste goes in each bin, and motivating students to properly sort their waste. It indicates that the program needs to go beyond motivating students to recycle because they “should,” and research other factors that motivate students.

Additionally, Sarah mentioned how age and laziness plays a role in whether or not a student properly sorts their garbage. This indicates that more research is needed in regards to the environmental practices specific to each age group. The Ontario EcoSchools program could then develop grade specific strategies and activities for helping students sort their garbage into the right containers.

4.5 Conclusion

During the analysis of the data gathered from the interview, four main themes emerged. The first theme was the factors influencing the EE taught of challenges inserting EE into the existing curriculum, developing meaningful lessons, and the influence of teachers’ personal opinions and values. The data suggested that the participants in this study experienced similar challenges to EE as expressed by Fazio and Karrow (2013), Pedretti and Tan (2010), Gwekwerere (2014), Grueber and Yarema (2012), Dyment (2005), Moseley, Huss and Utley (2010), Hwang (2009), Falkenberg and Babiuk (2013), Hart and Nolan (1999), and Stevenson (2007). It was found that more work needs to be done on having the Ontario EcoSchools
program readily lend itself to be integrated into the curriculum, that teachers are not utilizing some of the resources the program offers for meaningful learning, and that teacher personal opinions and values influences what EE is taught.

The second main theme that the interview data yielded was teacher professional development. This refers to teacher training for teaching a specific subject, like EE. The data showed that both participants did not feel prepared when they started to teach EE, similar to the articles outlined in chapter two that stated teachers are not given enough training to feel prepared when it comes to EE. This suggested that the Ontario EcoSchools program may need to offer more training to the teachers working within the program. The interview data also showed that the participants felt as though it was the job of the eco-team and the Ontario EcoSchools lead teacher to make the school ecofriendly. This suggested that the Ontario EcoSchools program may inadvertently help teachers perceive that it is not the responsibility of every teacher in the school to conduct EE.

The third theme surrounded the structure of the school system. This referred to the lack of time that teachers have during the school day and year, as well as the issue that the teachers are being pushed to focus on in the classroom. The data showed that the participants felt pressed for time, and similar to the research present in the literature review, this aspect of time influenced whether or not EE was taught in their classroom. The data also showed that the issues the participants were being told to focus on had an influence on whether or not EE was taught. This shows that more work needs to be done on incorporating the Ontario EcoSchool program within the time constraints placed on teachers, and to make it more of a focus in each school it operates at.
Lastly, the fourth research theme that emerged was the evidence of ecofriendly and non-ecofriendly behaviours in students. The participants said that using the recycling bin as well as a school garden were excellent examples of students being ecofriendly. This suggested that the Ontario EcoSchools program must continue to include these aspects in their certification criterion. The data showed that participants saw that students were lazy and bad at sorting waste into the proper waste disposal bin. This suggests that the Ontario EcoSchools program needs more focus on finding effective ways to motivate waste sorting among students.

Next in Chapter 5, a summary of the entire study is given, as well a discussion on the implications that these findings have for the future of EE, and the Ontario EcoSchools program. Additionally, there are recommendations given based the research findings and their relevance to the research literature.
Chapter Five: Implications

5.0 Introduction / Overview

The present study was designed to learn more about the Ontario EcoSchools program and the experiences of teachers conducting environmental education (EE) within the program. The findings serve to support the extant literature pertaining to EE and to specifically tell us more about the factors affecting the way EE is taught, teacher professional development, the structure of the school system, and the evidence on perceived ecofriendly and non-ecofriendly behaviours. This chapter summarizes the research findings, highlights the present study's implications for various stakeholders, provides several recommendations, and suggests directions for future research.

5.1 Key Findings and their Significance

Following interviews with two educators, a rigorous analysis revealed four important themes:

1. Factors affecting the way EE is taught,
2. Teacher professional development,
3. The structure of the school system, and
4. The evidence on perceived ecofriendly and non-ecofriendly behaviours.

The first theme, factors affecting the way EE is taught, served to remind us that the ways EE is integrated into the curriculum, the tools that are being utilized for the development of meaningful lessons, and the personal values of teachers are contributing factors to the EE conducted in a classroom. The data showed that teachers feel it is a challenge to integrate EE into the subject specific curriculum, and are more likely to integrate EE when it readily lends itself to the curriculum requirements. It also showed that teachers believe it is important to conduct
meaningful EE lessons, but on the contrary they aren't always utilizing the tools provided to create meaningful lessons. Finally, it showed a correlation between the person values of teachers and the EE that they teach. A teacher who is personally passionate about the environment is more likely to conduct EE than a teacher who is not. Most importantly for this study, the data also revealed that teachers do not look to the Ontario EcoSchools program when they are trying to integrate EE, develop meaningful lessons, or reflecting on their own attitudes.

The second theme revealed that teacher professional development plays a huge role in EE through the teachers’ sense of preparedness and perceptions on the responsibility to teach EE. The data revealed that teachers do not feel prepared to teach EE and are more likely to teach it after they have been prepared through teacher professional development. The study also revealed that the responsibility of teaching EE is usually placed on one eco-inspired teacher rather than on every teacher in the school. In terms of the Ontario EcoSchools program, it showed that the program does not contribute to the teachers’ sense of preparedness to teach EE and that it may indirectly place the responsibility of EE on the teacher in the school that organizes the eco-team.

The third theme, the structure of the school system, showed that the lack of time in the school year and the current focus on a specific issue in the school plays a role in the EE teachers conduct. This served to remind us that intense time constraints and a dense curriculum restrict how much EE is implemented in a classroom. It also reminds us that teachers will focus on educational initiatives when they are instructed to by their principal or school board. The data showed that teachers perceive the Ontario EcoSchools program does not help teachers overcome the time constraints or is being effectively pushed by principals and school boards.

The fourth and final theme, the evidence on perceived ecofriendly and non-ecofriendly behaviours, showed that teachers have observed ecofriendly behaviours in students through
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proper recycling, turning off the lights, and the maintenance of the school garden. It also demonstrated that teachers have observed non-ecofriendly behaviours such as not properly using the green bin, and degree of laziness when it comes to waste sorting. This revealed that the Ontario EcoSchools program is successful in its efforts to get students to recycle, and that it does not always motivate students to waste sort properly.

5.2 Implications

The present study has four specific implications for the broader education research community and three for the Ontario EcoSchools program.

5.2.1 Implications for the education research community.

First, the dense subject specific nature of the curriculum and extreme time constraints placed on teachers is hindering teachers from incorporating meaningful EE into their classrooms. This is consistent with the findings of Pedretti and Tan (2010) and Fazio and Karrow (2010) who identified that planning time and modifying EE to fit curriculum requirements negatively constrains teachers from implementing effective EE. Stevenson (2007) also noted that the traditional structure of schools, where teachers are required to convey a certain set of facts to students, is not conducive to teaching meaningful EE. The participants maintained that conducting meaningful EE is important however they were both less likely to do so because of challenges integrating EE with the curriculum and lack of time. Unless addressed, these challenges will continue to negatively influence the EE that students are receiving in school.

Secondly, the absence of extensive teacher professional development in EE is perpetuating low quality EE. The participants in this study expressed that they did not feel prepared to teach EE and as a result engaged with it less. This also led to less engagement with the Ontario EcoSchools program. This point is in line with Falkenberg and Babiuk's (2013)
findings that feelings of unpreparedness lead to negative views about EE, and uneasiness when teaching it. Gwekwerere (2014) also confirmed that lack of teacher professional development creates a sense of apathy towards the environment among teachers and makes it less likely that teachers will in fact teach EE.

   Thirdly, the common structure of the school system where teachers must focus on certain initiatives being emphasised in the school leads to disengagement with EE. The participants in this study mentioned how until recently, EE wasn’t really a push for them to focus on. This falls in line again with Pedretti and Tan's (2010) and Fazio and Karrow's (2010) findings that time is a significant factor for teachers conducting EE. Teachers do not have enough time to focus on more than one initiative in depth, and the initiative that is not being pushed in the school (i.e. EE) falls behind.

   Fourthly, the educational community needs to take into account the connection between the personal values towards the environment that teachers have and the EE that they teach. The participants in this study showed that when they did not have strong values towards the environment, they did not spend as much time teaching it. This is echoed in Gwekwerere's (2014) findings that showed teachers who are more passionate and care about the environment themselves, are more likely to motivate students to care about the environment.

5.2.2 Implications for the Ontario EcoSchools program.

   This study also has three specific implications for the Ontario EcoSchools program. First, the lack of teacher engagement with the program when incorporating EE is robbing students of meaningful learning experiences. This is detrimental for the environmental literacy skills students are developing. The participants described this when they stated they do not turn to the program when incorporating EE and do not make use of the meaningful tools for it provides (e.g.
the outdoor garden). Ferreira, Grueber, and Yarema (2012) showed that meaningful interactions in EE are imperative to students’ learning.

Secondly, the Ontario EcoSchools program is implicated in the evidence of non-ecofriendly behaviours the teachers expressed. The participants expressed that students still do not properly engage in waste sorting. Sarah identified that she has seen laziness as the deciding factor for a student to waste sort. This suggests that the Ontario EcoSchools program does not motivate students effectively to waste sort properly all of the time, and does not always effectively engage students with lazy tendencies. Motivating students to waste sort should be based on getting the students to intrinsically want to waste sort, rather than motivating them by telling them they should waste sort. In order to effectively motivate students, the Ontario EcoSchools program should conduct research into factors that are highly motivating for students. Unless these motivating factors are determined, students may continue to engage in poor habits of waste sorting.

Thirdly, the program is implicated in terms of the responsibility it places on one teacher to run the program in the school. Each participant discussed how there was one teacher in the school that ran the eco-team, and focused on getting the school certified as an Ontario EcoSchool. Inadvertently, this has placed the responsibility of EE on the teacher engaged with the program, and not all teachers in the school. This has led to teachers feeling as though it is not their responsibility to teach EE, and students are not receiving education that develops environmental literacy.
5.3 Recommendations

The implications of the present study point specifically to several recommendations for ministries of education, school administrators, teachers, professional development, teacher education, and the Ontario EcoSchool program. Eight recommendations are outlined below:

1. The curriculum must be updated to reflect EE explicitly infused in it in every subject area. It additionally must be updated on a regular basis as the field of EE advances. It is also extremely important that the curriculum explicitly includes the Ontario EcoSchools program, and links the use of the program to the curriculum requirements.

2. It is important that teachers partake in professional development that trains and prepares them to teach meaningful EE. This professional development must be available at the pre-service (i.e. teacher’s college) and in-service (working teachers) levels. The training should also include information on the Ontario EcoSchools program and how teachers can use it as a tool for EE in their classroom. Furthermore, the training should be aimed at changing the personal values towards the environment that teachers have. It should solidify EE as a core value in every school.

3. The Ministry of Education must allot more planning time for teachers. It is integral to the quality of EE being implemented that teachers do not base their EE strictly on time constraints and that they have time to integrate it through the curriculum.

4. The Ontario EcoSchools program needs to develop online resources for teachers to access when they are planning EE. This could be lesson plans, activities, and/or unit plans where the curriculum requirements of different subjects and the Ontario EcoSchools program are explicitly connected.
5. There needs to be a continued focus on waste sorting in the Ontario EcoSchools program. Alternative methods of motivating students to properly waste sort should be explored and implemented.

6. The Ontario EcoSchools program must continue to put emphasis on the school outdoor garden and on prioritising education programs that take place outside among teachers and administrators.

7. The Ontario EcoSchools program should consider updating their evaluation requirements to include the number of teachers in the school that are conducting meaningful EE. This would ensure that the program is not indirectly placing the responsibility of EE on one teacher in the school.

8. Teachers should reflect on their own bias towards the environment on a frequent basis, to avoid influencing the EE they teach with their own personal values. Teachers should actively seek out information about the environment and develop an informed opinion.

5.4 Areas for Further Research

Inasmuch as the present study has served to expand upon the extant literature, it has also highlighted the need for further study. In future research endeavours, it is recommended that a greater emphasis be placed upon the experiences of the students in the Ontario EcoSchools program. Exploring the experiences of students might reveal whether the program is helping students develop ecofriendly practices and environmental literacy outside of the school setting. It also may reveal different ways in which the Ontario EcoSchool program could motivate students to engage with ecofriendly practices. Finally, a study into the experiences of students might also shed light on the type of EE that teachers should conduct and what is conducive for student engagement.
Furthermore, motivating and changing teacher’s personal values towards the environment should be studied. This is to ensure that the connection between the teacher’s personal values and pedagogy is not influenced by negative feelings towards the environment. Research into this topic might also reveal what the Ontario EcoSchools program could do to motivate teachers and help change attitudes. Study into this area would also be useful in terms of creating professional development workshops aimed at motivating teachers to engage with EE and preparing them to teach it alongside the Ontario EcoSchools program.

Additionally, research should be conducted into how to integrate EE into all aspects of the existing curriculum. Research into this area would reveal areas of the curriculum that are difficult to integrate EE, and areas that easily lend to EE integration. This information would be useful for understanding what areas of the curriculum need to be reformed to support EE, and how to reform them.

Lastly, there is a need for further research into the structure of the school system, and how it can be changed so that teachers are not pressured by strict time constraints. Research into this area might reveal ways for the school day to be altered so that teachers have more planning time and more time to focus on EE.

5.5 Concluding Comments

The present study is important because it supports EE and the significant role that EE has to play in our classrooms presently. This study has filled the gap of the experiences of teachers conducting EE within the Ontario EcoSchools program. Their experiences have shown that teachers do believe conducting meaningful EE is instrumental in developing environmental literacy in students. Their experiences have also shown that, at the moment, they do not use the Ontario EcoSchools program as a significant way to do this. It is necessary to further research
how to motivate teachers to conduct EE, to get them engaged with the Ontario EcoSchools program, to structure the school day so there is more planning time for EE, and to look at the experiences of children within the Ontario EcoSchools program to determine the ecofriendly habits they are, or are not, developing.

The findings of this study are beneficial to teachers, school administrators, the Ministry of Education, and the Ontario EcoSchools program. It is crucial that teachers and school administrators engage in professional development that creates awareness of the importance of EE and a sense of preparedness to teach it. This professional development must be supported by the Ontario Ministry of Education. The Ontario EcoSchools program should take into consideration the teachers that are running this program in the schools and what they are saying about it. Based on this study, they are saying that from the program they need resources. Resources that are accessible, and connect the Ontario EcoSchools program with the Ontario curriculum requirements.

To conclude in the words of David Suzuki, environmental destruction “is a complex problem but it is solvable. In fact, the solutions are with us today, and we must deploy them quickly to prevent further damage to our environment and our health.” (Suzuki, 1999, p. 10).
References


Bondar, R., & Working Group on Environmental Education. (June 2007). *Shaping our schools, shaping our future*. (No. 07-199). Queen’s Printer for Ontario. doi: 978-1-4249-4718-8


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Appendix A: Letter of Signed Consent

Date:

Dear ____________________________,

My Name is Kaylin Walkinshaw and I am a student in the Master of Teaching program at the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT). A component of this degree program involves conducting a small-scale qualitative research study. My research focuses on the experience of teachers conducting environmental education (EE) within the Ontario EcoSchools program. I am interested in interviewing teachers who have shown leadership in the field of environmental education, work in a certified EcoSchool, and also have an interest in the topic of EE.

I think that your knowledge and experience will provide insights into this topic. Your participation in this research will involve one 45-60 minute interview, which will be transcribed and audio-recorded. I would be grateful if you would allow me to interview you at a place and time convenient for you, outside of school time. The contents of this interview will be used for my research project, which will include a final paper, as well as informal presentations to my classmates. I may also present my research findings via conference presentations and/or through publication. You will be assigned a pseudonym to maintain your anonymity, and I will not use your name or any other content that might identify you in my written work, oral presentations, or publications. This information will remain confidential. Any information that identifies your school or students will also be excluded. The interview data will be stored on my password-protected computer and the only person who will have access to the research data will be my research coordinator Kenneth McNeilly.
You are free to change your mind about your participation at any time, and to withdraw even after you have consented to participate. You may also choose to decline to answer any specific question during the interview. I will destroy the audio recording after the paper has been presented and/or published, which may take up to a maximum of five years after the data has been collected. There are minimal risks to participation, and I will share a copy of the transcript with you shortly after the interview to ensure accuracy. I will also provide you with a copy of interview questions prior to the interview. Please sign this consent form, if you agree to be interviewed. The second copy is for your records. I am very grateful for your participation.

Sincerely,

Kaylin Walkinshaw

Research Coordinator: Kenneth McNeilly

Consent Form

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

I have read the letter provided to me by ____________ and agree to participate in an interview for the purposes described. I agree to have the interview audio-recorded.

Signature: ______________________________________

Name: (printed) _________________________________

Date: ____________________________________
Appendix B: Interview Protocol

Introductory Script: Thank you for agreeing to participate in this research study and for making time to be interviewed today. This research study aims to learn the experience of teachers conducting environmental education within the Ontario EcoSchools program. This simply means that the school where you work is certified as an EcoSchool. The purpose of this study is to evaluate whether or not students are actually developing habits and values that are environmentally friendly. This interview will last approximately 45-60 minutes, and I will ask you a series of questions focused on your own experiences related to teaching environmental education, and the results thereafter. I want to remind you that you may refrain from answering any question, and you have the right to withdraw your participation from the study at any time. As I explained in the consent letter, this interview will be audio-recorded. Do you have any questions before we begin?

Background Information

1. How long have you been teaching?
2. What grade(s) have you taught?
3. What schools and what areas have you taught at?
4. How long have you taught in a school that was certified as an Ontario EcoSchool (at any level)?
5. In general, how would you describe your teaching style?

Teacher Perspectives/Beliefs

6. What is your opinion on the value of EE? Do you think EE is important or non-important? Why?
7. Do you feel well informed about the EcoSchools program?
8. What poor environmental practices and/or habits have you seen evidence of in the students in your classroom, and school community (if any)?
9. What sustainable (positive) environmental practices and/or habits have you seen evidence of in the students in your classroom, and school community (if any)?
Teacher Practices

10. How prepared did you feel when you first started conducting EE? How prepared do you feel now?
11. What were the contributing factors that led to your feeling of preparedness, or unpreparedness in relation to when you first started conducting EE, and now?
12. Has the Ontario EcoSchools program contributed in any way to your feeling of preparedness, or unpreparedness?
13. What are some benefits that you have faced in regards to implementing EE in your classroom and the larger school community?
14. What are some challenges that you have faced in regards to implementing EE in your classroom and the larger school community?
15. Do any of these specific benefits and/or challenges you experienced connect to the Ontario EcoSchools program?
16. After conducting EE in your classroom, and having the school certified as an EcoSchool, have you seen any evidence of the development of environmentally friendly practices, beliefs, habits, and/or values in students?

Supports and Challenges

17. What resource(s) have you found to be useful for you in terms of conducting EE, and why? (Note: Remind participants at this point to be honest, and that it is okay if their preference of resources does not include the Ontario EcoSchools program)
18. How did you overcome any challenges to EE that you faced?
19. Did the Ontario EcoSchools program assist you in overcoming any challenges?
20. How might the Ontario EcoSchools program further support you in conducting EE?

Next Steps

21. If you were to summarize your experience conducting EE within the Ontario EcoSchools program, what would you say?
22. Do you have any future goals in terms of EE, and/or working with the Ontario EcoSchools program? If you do, what are they?
23. For teachers who are just starting in the field of education, what advice would you give them in terms of conducting EE in their own classrooms?

Thank you for your participation in this research study.