The Impacts of Teacher Implementation of Environmental Education on Student Eco Self-Reflexivity

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ABSTRACT

This study looked at the effect that the implementation of eco-friendly strategies into the classroom by teachers had on encouraging elementary students to become self-motivated to implement their own eco-conscious actions into their daily routines in the classroom. This study began by looking at the prior research that existed broadly in the field of environmental learning and teaching in the classroom. The study went on to look more closely at the research surrounding how classroom management and reward systems were used as strategies to help support teachers in their process of infusing environmental content into their classrooms routines. The study then paralleled the existing research with the research gathered from the experiences of two research participants, both of whom were current GTA teachers who regularly infused environmental content into their classroom using some form or degree of a reward system. The study concluded by paralleling the similarities and differences that were present among the existing research and the participant interview data. This was done by way of offering recommendations to current and future teachers who would be similarly interested in understanding ways in which they too could implement eco-friendly strategies into the classroom in a manner that would encourage their students to become self-motivated to implement their own eco-conscious actions into their classroom routines.
KEY WORDS

1. Environmental Education
2. Environmental Teaching Practices
3. Eco-Strategies for Implementation
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CHAPTER ONE: INTRODUCTION

1.0 Research Context

As I began building my interest in environmental teaching and learning, I soon learned that in the last few decades strings of words such as climate change, ozone depletion and global warming, that once probably had little to no meaning to the average Canadian individual, had now rapidly become familiar phrases in everyday discourse. I realized that the increased usage of such terminology could not be attributed to mere coincidence. It became clear that scientific proof had determined that environmental damage was indeed a real and pressing concern. In fact, it was noted that since 1979, the stratospheric ozone had decreased globally 6% per decade in mid-latitudes and roughly 10-12% in higher southern latitudes, in turn further raising the cause for alarm (Statistics Canada, 2013).

As I began to learn more, it became clear to me that this concern must be addressed in order that future generations may have access to the conveniences of clean water, fresh air, sustainable fuel and locally grown food that were once so readily available to their predecessors. Since this issue would require closer attention by older and newer generations alike, the obligation to act would need to be twofold. On the one hand, this responsibility would need to fall on the shoulders of the older members of society to change their ways as a means to slow down (and if possible even reverse) the environmental harm that had already occurred. Yet, the older generation would have to also be given the simultaneous duty of providing the future generation with the tools and education to carry on this preservation process down the road. By way of being presented this problem at hand, the future generation would also be given the responsibility to morph into their role as a second set of actors in this twofold system of environmental change.
1.1 Research Problem

As I continued along with my research, I became more intrigued about the roles and responsibilities that the older and newer generations would need to take on in order to preserve our environment. In *Inspiring the Future: A New Teacher’s Guide to the Law*, Scarfo argued that it had become common law that teachers would have a duty to care for their students, as they were placed in a position of being *in loco parentis* (Scarfo, 2008, 47). Their position of being *in loco parentis* was viewed as a particularly influential one as in many cases (especially from Monday to Friday) students would spend more time in the presence of their educators than they did in the presence of their own parents and/or guardians. For this reason, teachers were not only seen as sources of knowledge, but also seen to assume the simultaneous role of caretaker whose moral and ethical views inevitably influence the thoughts of their students.

Therefore in conducting my preliminary research and based on my own experiences in the classroom, the integration of environmental awareness into the school setting seemed quite fitting. This was due to the fact that both groups would present in the school environment as mentioned above. It also seemed fitting since students would come to recognize their teachers as mentors as well. As a result, students would in many cases look up to their teachers and want to mimic their actions (Scarfo, 2008, 139). This appeared to be especially true of students at a younger age since these students are often regarded as being tabula rasas (or blank slates) ready to be filled with knowledge (Lawson, 2006, 185). This would thus make these students the perfect candidates to be taught and positively influence by the eco-strategies of their educators.

I also began to believe that students would be willing to copy the actions of their teachers as a sign of respect, due to the fact that along with the role of mentor and caregiver teachers would also be in a position of authority. As a result, students would follow the rules set in place
by teachers (such as environmental classroom rules) in order to gain positive recognition from them. I also began to think that the willingness of students to abide by such rules would also likely be heightened if their teacher would have a reward system in place. This seemed as though it would be especially effective at the beginning of the school year as a way to introduce students to eco-strategies right from the start.

However, it seemed to me as though implementing a reward system might not even be necessary in some cases. I thought this might be the case due to the huge shift in both the curriculum as well as in popular culture encouraging youth to become agents of change and become active in local, national and global environmental affairs. Although part of this shift could be accredited to structures such as curriculum and popular culture, the influence and support of adult figures in encouraging students and in providing them with the resources needed to fuel their ambitions to change the future of the world could not be overlooked in this paradigm. This therefore once again made the classroom appear to be an effective place to observe the degree to which students were making strives to be more eco-friendly.

1.2 Purpose of the Study

Given the insights stated above, the purpose of my study was to look more closely at how the two actors, the present and future generations (in my case more specifically, elementary level teachers and their students in the GTA) would work both together and apart to address environmental conservation. I did so by using elements of a qualitative case study approach to conduct my research (Creswell, 2013, 97-102). I interviewed two educators to gain insight on how students reacted to the integration of environmental awareness into their daily classroom routines. I believed that examining this interaction in a school setting would be particularly
beneficial because it would be an environment where both these demographic groups were intrinsically present. Similarly, the foundation of a school system would be partially rooted in the importance of education and enlightenment (which I viewed to both be necessary elements in fostering the need for sustained environmental awareness). This further added to the appropriateness of conducting a study like mine that specifically dealt with environmental teaching and learning in a school setting.

By looking more closely at the strategies modeled and practiced by the teachers examined in my case studies, it was my hope that other teachers and students alike would also turn to my research to look at what tactics were more and less effective in motivating students to become agents in environmental change. I believed that reading the real-life examples from my participants’ experiences this would in turn work as an accessible alternative to reading formal eco theories directly and attempting to transform the discourse of these theories into action in the classroom. I believed that educators might feel as though it was less of a cumbersome task to include environmental teaching into their daily lesson plans if resources were presented to them in an accessible way. Also, it seemed to me that if educators were introduced to more meaningful environmental lessons they would then be more likely to inspire students to be autonomous in taking their own steps to being more eco-friendly in similarly meaningful ways.

1.3 Research Questions

I decided to look at the way in which teachers and students address environmental issues by focusing on the following question:
1.3.1 Main Research Question

What effect does the implementation of eco-friendly strategies into the classroom by teachers have on encouraging elementary students to become self-motivated to implement their own eco-conscious actions into their daily routines in the classroom?

1.3.2 Sub-Questions

1) Does students’ eco-consciousness differ when no strives to demonstrate eco-friendly behaviours are made by the host teacher?

2) Are students more likely to self-regulate and implement eco-strategies into their classroom behaviour if the students are functioning on a reward system?

1.4 Background of the Researcher

My interest in this topic came directly from my own experiences growing up and being a student on what seemed to be the cusp of environmental awareness integration into classroom teaching. In fact, in thinking back I could explicitly recall having teachers that fell at either ends of the environmental awareness spectrum. Some teachers were extremely willing to implement environmental strategies into their teaching. In fact, recycling and composting were even made to feel like games in these instances, making myself and other students eager to take part in such activities. On the other hand, other teachers made environmental awareness the last of their daily teaching concerns and failed to implement any eco-friendly strategies whatsoever. I found that this became reflected in the behaviours of their students. I watched as my classmates proceeded to toss compostable and recyclable items into the garbage receptacle without giving this action a second thought, knowing that they would not receive any sort of reprimanding for this sort of
action. This broke my heart as I looked on in horror and was mocked by other students for attempting to intervene. “Why do you care what goes where,” classmates would say to me. “Mr. Green doesn’t care, neither should you, you are not the teacher,” was another reaction that I often received for my attempt at being eco-friendly in an environment where such initiatives were far from the norm.

I was raised by parents who had a heightened concern for global affairs. In fact, they were particularly keen on the preservation of the environment. I remember my humble abode being a place where actions such as turning the light off as I left my room. Separating the plastic cereal bag from the cardboard cereal box in order to ensure they ended up in their appropriate bins in the garage were also second-nature tasks in my daily living routine.

My parent’s circle of friends had similar views as well. This in turn allowed the extended environment outside of my immediate home to also be one where I would further explore sustainable tactics. On weekends I would frequent local conservation areas and hiking trails where I would pick up litter as I explored the beauty of the green space around me. I would also spend my evenings running over to my neighbour’s house with compostable scraps. I was always eager to feed the worms that lived in his homemade composter. I knew that the “worm poop” or soil my scraps would be transformed into what would later become the secret component that allowed our other neighbour’s organic tomatoes to grow big, ripe and juicy each summer. Yet, my sustainable “at-home” tactics and this sort of eco-friendly attitude were on the fringes of societal concerns and not included in the day-to-day discourse of my school life. Therefore, how I implemented my awareness strategies at school in many cases greatly depended on my immediate classroom environment and unfortunately on what was socially acceptable at the time.
In thinking back this led me to wonder. With the ever-presence of eco-friendly strives in society and popular culture these days, I wondered if the degree to which an educators’ strives at implementing eco-friendly strategies into the classroom still influence his or her students’ willingness to take on environmentally conscious actions independently? In a scenario such as the one I mentioned above with Mr. Green, I was curious as to whether students would be likely to go against the grain and exhibit environmentally friendly behaviours autonomously knowing that their teacher did not openly subscribe to such views him or herself?

Although I believed that some students might exercise the right to act autonomously and strive to incorporate an eco-approach in their daily behaviours, I believed that the reality of a classroom community was one where there would always be several students that prefer to remain passive, Yet, if this was an undeniable reality of classroom environments, this led me to believe that teachers should be taking the first steps to promoting active strives towards more sustainable endeavours in the classroom. In fact, it became my prediction that even if students were autonomous in generating their own strives prior to receiving any teacher facilitated instruction or guidance about sustainable living, students would be even more successful and eager to maintain these strategies in an environment where their actions would be recognized and promoted. Therefore, as a future teacher with a green thumb myself and one who has also witnessed classrooms where eco-strategies were both a boom and a bust, I believed that the responsibility must fall on educators to promote environmental sustainability in a way where students could feel enticed and, more importantly safe, to exercise these strategies. I wholeheartedly began to believe there was no way to move forward as a society but sustainably. Yet, as previously mentioned, I also knew that sustainability could only occur as a twofold
undertaking with both parties involved. It was for this very reason that I was curious to look at this concept on more of a critical level.

1.5 Overview of the Study

Conducting the study provided me with insight as to whether the actions and strives of teachers as adult figures and members of an older generation would be necessary in influencing and inspiring students to be active agents of change. Could students still be their own autonomous environmental agents in the classroom without any guidance from teachers? Without carrying out the study I would not know the answers to answer this important question. Carrying out the study also shed light on which strategies and tactics used by teachers were more or less effective. Environmental conservation is inevitably a pressing issue that cannot be overlooked. Therefore, by studying how students reacted to eco-strategies in the classroom revealed through my participant data, I believed that other educators could in turn tailor how and to what degree they would influence their own students to be more aware about this concern. It was my belief that students would be far more receptive to take on their own initiatives in the classroom after such eco-initiatives were modeled and positively reinforced by their educators. It was also my hope that by studying the practicality of certain eco-friendly tactics, implementing green strategies into the classroom would become less of a daunting task for teachers, including myself.

1.6 Conclusion

As I continued on, I hoped my findings would continue to shed light and promote eco-understanding where the need was the greatest. Once again, I did this with the intent of
underpinning the need for an ever-presence of environmental education and practices in the classroom. Through this, I wanted to allow teachers (myself included) with the opportunity to think more deeply about the data presented by my participants and to critically examine it in relation to the larger issue at hand. This was all done as a means of continuing the discussion on environmental teaching and learning.
CHAPTER TWO: LITERATURE REVIEW

2.0 Introductory Overview

In this chapter I used elements of a case study approach to look at ways in which environmentally conscious practices displayed by educators in the classroom impacted their students’ own willingness to exert similarly eco-conscious behaviours. I supplemented this framework with other relevant environmental theoretical frameworks that I looked at through the research presented in this chapter. Through this, I was able to draw more conclusions about my own conceptual framework.

I designed my conceptual framework to help provide a clearer understanding of how individual teacher integration of environmental education informed student eco-action. I began by discussing ecological theory as a larger and more historical school of thought. From there I looked more closely at how the foundational principles of this school of thought had been adapted and shaped to suit a more modern and secular audience as a means of addressing more current environmental issues. I then took this one step further and examined how this more modern version of environmental theory had entered educational curriculums. More specifically, I observed how it was being regarded and implemented into regular classroom education. From there I examined what classroom management strategies had been used and were being used to deliver this environmental pedagogy. I looked more specifically at how traditional cause and effect approaches of behaviour management (such as classical conditioning) factored into the classroom management routines being used to teach environmental practices to students. In turn, I was able to better understand how these regulatory systems influenced students to internalize environmental awareness into their own self-regulatory eco-behaviours in the classroom.

In unpacking these forms of student behaviour regulation I regarded which kinds of
reward-systems were used among these classroom management strategies to further encourage students to be environmentally friendly. I looked at the specific forms of rewards being used in instances where reward-systems were present. I particularly honed in on the prevalence of food rewards in these reward systems. I observed whether the foods being administered to students as rewards were in-line with or strayed from (how they are grown and sourced, for example) the environmentally conscious discourse teachers were educating students with. In essence, I hoped to observe whether in administering certain foods kinds of foods to students to motivate them to act eco-consciously whether teachers were really practicing what they preached. Lastly, I also observed various alternative reward systems that were currently being used in place of food reward systems to also motivate positive environmentally friendly student behaviours.

2.1 Ecological Theory in Eco-Friendly Education

In first looking an ecological theory, there was little doubt that the need for environmental awareness had become more sought after in consideration of growing environmental issues in our society. In fact, evidence of environmental concerns dated as far back as 7000 BCE when speculative concerns surrounding the use of fire to clear cut vast areas of vegetation arose among the Catal Huyuk, Jarmo and Alosh cultures in the Middle East (Perlin, 1989). Over the years, environmental misgivings only became more frequent. With thousands of years of observations, as well as several decades of experimental research behind us, speculations about environmental issues froze over into cold, hard evidence. The environment had indeed been altered, and to take it one step further, even destroyed. The repercussions of this reality would now become a pressing concern for not only today’s society, but also for future generations to come.
The urgency surrounding the state of our environment also caused topics of eco-awareness and sustainability to become repurposed to better address more modern and pressing current environmental issues. Palmer underpinned the importance of understanding this ideological shift in her own work too. She explained that although it was necessary on the one hand for individuals to dispel the illusion that environmental awareness was a new phenomenon, on the same token, it was equally important to note that it had evolved significantly over the years (Palmer, 1998, 3).

2.2 Modern/ Secular Approaches to Environmental Theory

Environmentalism was no longer solely one of many theoretical lenses for scholars and academics to call upon when discussing important matters. Garrard explained that although eco-criticism was still used as a theoretical approach (giving an example of the way it was used to pull meaning from literary texts), it had now found its way into the field of the humanities since the early 1990s (Garrard, 2010, 233). He wrote that this second-wave of eco-criticism had brought “a dramatic broadening of the eco-critical canon to include urban literature and non-literary cultural forms.” Garrard stated that it had also brought about an increase in cultural resistance to federal authority, further pushing the subject matter out of the sole realm of higher academia and into the secular world instead (Garrard, 2010, 237-239). Garrard took this one step further to suggest that “eco-critical pedagogy flourished despite (or perhaps because of) the lack of empirical evidence to support it.” Instead, he credited “a clear, practical programme” and “well designed curriculums and learning contexts and [learning] environments” for its success (Garrard, 2010, 241). For this reason, in many ways Garrard was accurate to credit and commend policy makers for transforming eco-criticism from a complex theoretical concept to a more
accessibility concept.

2.2.1 The Presence of Modern Environmental Theories in Today’s School

Curriculum

As its field continued to broaden, environmental education also became increasingly implemented into the more elementary levels of education. This allowed a wider demographic of students to be introduced to environmentally pressing issues from early on in life. With this reality in mind, the Ontario Ministry of Education actually went on to mainstream and mandate the teaching of environmental education. In fact, the Ministry even dedicated an entire introductory portion of the most recent social studies curriculum to making this aim clear. The aim came from a document endorsed by the government entitled “Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools” that states:

“The first goal is to promote learning about environmental issues and solutions. The second is to engage students in practicing and promoting environmental stewardship, both in the school and in the community. The third stresses the importance of having organizations and individuals within the education system provide leadership by implementing and promoting responsible environmental practices throughout the system… (2009, 9).

2.3 Various Approaches to Environmental Pedagogy

Based on the above policy, but also considering that the nature of social studies as a very vast and open discipline, there soon became little coherence as to what environmental education should specifically entail. Spearman and Eckhoff (who have recently joined together to press for the implementation of more sustainable education into the American school curriculum) explicitly noted: “…infusing sustainability concepts into existing curricula [could] be
challenging for educators who may be unsure as to how and when to introduce these concepts to their students, perhaps because they themselves received little instruction on environmental topics during their own schooling” (Spearman and Eckhoff, 2012, 354). For this reason, these authors suggested that educators should consult an array of resources to make environmentalism and sustainability more engaging and meaningful to students.

2.3.1 Environmental Resources and Strategies to Help Teach Eco Practices in the Classroom

Noting the above, Mason’s text *The Green Classroom: 101 Practical Ways to Involve Students in Environmental Issues” proved to be an example of a more mainstream eco-resource that could be a great starting off point for educators who felt as though they had yet to find an environmental niche that they could relay in a meaningful way to students (Mason, 1991, 11-13). Mason’s book dealt with topics that ranged anywhere from wide-scale tactics used on a broader scale to protect wildlife and habitats, to strategies for conserving energy in the classroom (Mason, 1991, 11-13).

While it became clear that some educators would have very little experience with environmental programming, it was also true that other educators might have already carved out their own niche within the sphere of environmental education. By already having a starting off point, these educators could look to more specific resources and strategies in their attempt to make their environmental program genuine and interesting for their students. For example, in her article, Leppert disclosed her interest in the field of eco-education as one that was rooted in a concern for recycling and waste management (Leppert, 2010, 63). For this reason, this was the sort of thematic content Leppert would teach her students. Due to the fact that it was important to
her, the content would therefore be disseminated in a meaningful way to her students as well.

2.3.2 Different Teaching Styles Used to Deliver Environmental Content

Beyond suggesting resources and strategies that teachers could use to teach eco practices in the classroom, Leppert also suggested that an effective method for getting students excited about environmentalism was to introduce the subject matter right at the start of a new year as a foundational basis to build off of (Leppert, 2010, 63).

Kitson also revealed several strategies to getting students motivated in her text too. Kitson suggested starting very broadly. She referred back to a statement once made by a seven year old student who described what environmentalism meant to him or her: “it means making sure there is enough for all, forever” (Kitson, 2012). Kitson noted that the profound simplicity of the statement also spoke to how complex and challenging the ideas of sustainability and environmentalism really were (2012).

I believed that this statement also implicitly spoke to what students actually bring to the table in terms of their own knowledge of eco-awareness. This was especially important considering, as explicitly stated above, that environmental awareness was now considered more of a secular and mainstream topic that would be accessible to a wider range of individuals than ever before. Despite this claim, Spearman and Eckhoff still believed that: “education during the early childhood and elementary school years is based on the premise that children must develop a sense of respect for the natural environment during their childhood years; otherwise, they may never develop a positive proactive attitude (Spearman and Eckhoff, 2012, 356). For this reason, Spearman and Eckhoff suggested a more direct approach to infusing environmental teaching and learning into the classroom.
Davis argued that environmental education and awareness fall somewhere in the middle. She argued that twenty first century students already bore a degree of understanding of environmental issues as they had been introduced to and colonized by exploitive practices toward the environment on a daily basis (Davis, 1998, 117). Davis also simultaneously argued that despite this, students’ awareness must be further stimulated and enlightened: “the environmentally educated teacher is crucial in transforming attitudes, values and actions that lead toward sustainable social and environmental relationships, both within and between generations” (Davis, 1998, 118).

For the purpose of my research, I wanted to combine the varying philosophies discussed with a case study approach to determine whether student understanding of environmental concerns would stem more from their own internal awareness and interest, or whether their interest would be more dependent on what their educators viewed and implemented as important in the classroom. To do this, I rooted my study in environmental theory. However, eco-theory, “the theoretical impetus that comes from the recognition the relationship between humans and the nonhuman world, especially at a time of growing environmental crisis” has conceptually shifted a great deal since its debut in academia and in a realm solely among scholars (Cultures and Environments: On Environmental Cultural, 1997). For this reason, I focused on a more mainstream and secularized version of environmentalism for the purpose of my research. In fact, Garrard sums this approach up nicely by stating: “the importance and value of eco-critics [nowadays is to] engage with the mainstream of research in environmental education, both theoretical and evidence-based” (Garrard, 2010, 241). This is in essence what I hoped to achieve.
2.4 Classroom Management Strategies to Encourage Environmental Practices Among Students

In order to understand whether students were more apt to take part in environmental practices in the classroom on their own accord, or whether they were more likely to act this way when their educators introduced these practices, it was crucial to look at how environmental strategies are implemented in the classroom. For this reason, I examined how classroom management plays into eco-awareness throughout my research.

2.4.1 Implicit Classroom Management Strategies to Encourage Environmental Practices

I wondered deeply as to whether these environmental strives in the classroom were implicit ones? For Volkmann the answer was yes. Her approach to environmental education was one that aimed to allow students to explore their own paths of discovery in their journeys towards sustainability. She explained that although she used different creative “weapons” to plant the seeds of environmental awareness in her students’ minds, she left the extent to which the student chose to engage with this new knowledge up to the discretion of the student. When given a five hundred dollar grant, Volkmann explained that the money was used “to install water filters on the school’s drinking fountains so students would be encouraged to bring reusable water bottles to school.” Her use of the word “encourage” is crucial to Volkmann’s approach, as her approach to integrating environmental awareness was one of inspiring and not penalizing (Mejdrich, 2013).
2.4.2 Explicit Classroom Management Strategies to Encourage Environmental Practices

Unlike Volkmann’s approach, others would call for more explicit and strictly reinforced tactics to be used by teachers when implementing eco-friendly strategies into the classroom. In fact, Mallett went as far as to suggest that students would learn the importance of engaging in environmental practices once they were explicitly introduced to emotional consequences of it in the form of guilt. She wrote: “eco-guilt is guilt that arises when people think about times they have not met personal or societal standards for environmental behaviour. Highlighting instances when people fail to meet standards for environmental protection should create guilt which would then motivate eco-friendly behaviour” (Mallett, 2012, 224). She suggested that, when used correctly, this tactic was very effective for motivating students to behave in eco-friendly ways in the classroom (Mallett, 2012, 231).

2.4.3 Middle Ground Strategies to Encourage Environmental Practices

Somewhere in between the two prior approaches, Basile’s study suggested that students would benefit most when educators adopted somewhat of a “middle-ground approach” when incorporating environmental awareness into the classroom (2000, 21). Although she did believe that students should be able to rule out what is of interest and meaningful to them as part of the process of self-discovery in the world of sustainability, she believed there also needed to be a structured and foundational basis for this exploration (Basile, 2000, 21). For this reason, Basile suggested that students would need to be more explicitly guided and “involved in learning skills related to inquiry, decision making, and problem solving” along their environmental learning journey (Basile, 2000, 22). She also noted that as active citizens, students would have to
understand the ramifications associated with positive and negative decision-making and actions from a young age (Basile, 2000, 22).

On a similar train of thought, in “Theorising Teacher Learning” (a text created to help educators better design their teaching programs to foster a more wholesome approach to student learning), the authors explained that in learning about the acquisition of knowledge teachers must often be reminded of the importance that learning is truly activated when concepts are repeated and reinforced. They went on to state: “it is believed that children’s learning can be shaped and molded by manipulating the antecedents (i.e. the environment, the cues, the instructions) or the consequences (what happens after learning)” (Bourke et al, 2012, 16). This approach could be seen as yet another tactic to implementing environmental practices into day-to-day lessons.

2.4.4 Cause and Effect Classroom Management Strategies to Encourage Environmental Practices

The idea of manipulating antecedents and consequences these authors brought up in their work was very closely aligned with the larger theoretical idea of classical conditioning as first introduced by Pavlov and his salivating dog (Windholz and Lamal, 1986, 192). In fact, Windholz and Lamal used this overarching theory of classical conditioning and re-purposed it for more current concerns. The authors went on to state that this concept of cause and effect relationships had also trickled into the realm of education and from there into behavioural management strategies. The authors also referenced Krasnogorski’s work in America wherein this particular psychologist studied how children’s reactions varied when their behaviours were positively and negatively reinforced (Windholz and Lamal, 1986, 192).
2.5 The Use of Incentives/ Reward Systems to Motivate Students to be Eco-Friendly

In an attempt to further unpack Krasnogorskii’s work surrounding the area of positive methods to reinforce behaviours, I observed the role that incentives played in motivating students to participate in eco-friendly activities. In his piece Barnes explained that according to “expectancy theory” a student would respond favourably to a reward system if: a) the pupil felt that there was a reasonable chance of success, b) the pupil was convinced that the personal risks were not over-whelming, and c) the pupil believed that the product or reward was worth the effort needed to succeed (Barnes, 1987, 12). Barnes also suggested, “it is a simple fact that people like to help, and reinforce others who facilitate the realization of their own goals” (Barnes, 1987, 13).

Ohtomo and Hirose also revealed this idea in their own research, as they suggested that: “behavioural intention may specify a process that guides behaviour in a goal-oriented or intentional manner and behavioural willingness may specify a process that leads to behaviours in a reactive fashion” (Ohtomo and Hirose, 2007, 2). These two authors also noted that through their own research they found that “eco-friendly behaviour may be inhibited or promoted depending upon whether the reactive process or the intentional process is more salient” (Ohtomo and Hirose, 2007, 1).

2.5.1 Types of Incentives/ Reward Systems Used to Motivate Students to be Eco-Friendly

Although these two sources were crucial in theorizing the overarching concept of “incentive” based behaviour management, for the purpose of my research I also wanted to observe the broad range of incentive possibilities that could be implemented when this tactic was
The impacts of environmental education employed to motivate students to act eco-consciously. Seone and Smink explained that classroom incentives existed on a broad spectrum, ranging from verbal encouragements and esteem to “candy, popcorn parties, special favours and privileges” (Seone and Smink, 1991, 2). Despite these being some of the most common incentives that existed in today’s classroom, those who viewed sustainable living as one in the same with sustainable nutrition had trouble with rewarding eco-friendly behaviour with unsustainable foods such as candy, pizza and other “junk” foods. In fact, Dahm and her colleagues regarded a direct positive link between organic food consumption and a willingness to undertake other environmentally friendly behaviours (Dahm et al, 2009, 201).

Since it would not always be feasible to provide students with organic alternatives when using food incentives in the classroom due to a wide range of accessibility constraints, it was also important to also consider other (though still healthy/environmentally sustainable) alternatives. For instance, providing students with inexpensive but fresh options instead of highly processed, preservative packed treats was an alternative that Lytle and her team proposed and even endorsed (Lytle et al, 2006, 10). In fact, they also revealed that this was a crucial alternative when placed next to the fact that research had confirmed that individuals would be likely to develop eating habits based on their immediate environments. They stated that students were more likely to develop unsustainable eating habits if the food options they were provided with at school (where they spent the majority of their childhood lives) were unsustainable options (Lytle et al, 2006, 11). The authors also suggested that this would in turn cause students to be less apt to undertake their other eco-friendly behaviours, as Lytle and her team found a similar correlation to Dahm and her team in regards to sustainable eating and sustainable living as well (Lytle et al, 2006, 11).
2.5.2 Alternative Incentives to Solely Rewarding Students with Food

As Seone and Smink mentioned above, incentives needed not only to be food related. In fact, the Centre for Science in Public Interest explicitly criticized the use of any sort of food reward, sustainable or not. The Centre believed that:

“Providing food based on performance or behaviour connects food to mood. This practice can encourage children to eat treats even when they are not hungry and can instill lifetime habits of rewarding themselves with food behaviours associated with unhealthy eating or obesity” (The Centre for Science in Public Interest, 2004, 1).

The Centre outlined several of the incentives Seone and Smink also mentioned above, however, what particularly resonated with me about this report was the Centre’s recommendation to reinforce positive eco-friendly behaviours with eco-friendly rewards. Some of the rewards they suggested included: holding class outdoors to allow student to connect with the environment, eating a litter-less lunch outdoors or going on a environmental themed field trip (The Centre for Science in Public Interest, 2004, 3). Another incentive I also came across in my research was allowing students to play an educational board game called “Keep it Green: An Environmental Game for Environmental Consciousness” as an acknowledgment for engaging in sustainable behaviours. Indeed, this game could function as a reward due to the fact that it was meant to be fun and engaging, but would also simultaneously continue to broaden students’ knowledge about eco-friendly behaviours (Gosse, 1990).

In much the same way that teachers would have had the freedom to interpret the broadness and openness of environmental education or classroom management in different ways, the incentives that teachers might have chosen to use to promote eco-friendly behaviour (if they choose any) would often reflect their personal preferences.
2.6 Conclusion

Above all, upon looking at the existing research, it continued to be my main priority to understand among all of these many layers and factors whether students’ motivation to act environmentally friendly was indeed deeply impacted by their teachers’ actions, or whether it was more self-motivated due to the ever-presence of environmental awareness in the worlds around them.
CHAPTER THREE: METHODOLOGY

3.0 Introductory Overview

The purpose of my study was to utilize my own interest surrounding environmental practices in the classroom to further examine the sort of strategies elementary school teachers in the GTA (Greater Toronto Area) were using to implement green practices into their own classroom pedagogy and routines. I recruited two environmentally conscious GTA elementary school teachers as participants. I conducted a semi-structured qualitative interview with each of them to gain better insight into their own professional experiences understanding what motivated students to act eco-consciously in the classroom. In this chapter I also revealed the various stages my research underwent as well as the ethical considerations and limitations that came through in my research process. In doing all of this I was in turn able to shed greater light on what effect the implementation of eco-friendly strategies into the classroom by teachers had on encouraging junior and intermediate level students to become self-motivated to implement their own eco-conscious actions into their daily routines in the classroom.

3.1 Research Approach and Procedures

My research approach was twofold. Firstly, I utilized data from the research I acquired through my literature review. I also utilized the data I gathered from the two semi-structured qualitative interviews I conducted with my participants. The literature review was undertaken prior to conducting the primary data collection. It allowed me to look at relative and current information regarding the ways in which students and teachers engaged in and with environmental practices in the classroom.

In fact, Palmer’s work in *Environmental Education in the 21st Century* (prior to gathering
further data) particularly piqued my interests regarding how the presence of environmental education has evolved with the since the mid 1900s, inspiring me to look further into this issue (Palmer, 1998, 4). From Ontario Government documents, to informed testimonies like those from Spearman and Eckhoff and Mason and Leppert, the literature review became a vehicle that allowed me to better understand the ways in which eco-consciousness had been adapted for educational settings through curriculum amendments and altered expectations in the classroom. My research findings also led me to familiarize myself with experiences other educators had when attempting to implement eco-practices into their own classrooms.

This in turn shed light on the second pillar of my research which looked at what practices were being used by educators to motivate students to act in eco-friendly ways in the classroom. As a result, my literature review and its subsequent findings influenced the types of questions I asked my participants when developing their individual case studies. Since my data was also comprised of current and relative personal testimonies, I hoped that my own research would continue the conversation surrounding effective environmentally friendly practices displayed by educators in the classroom. I also hoped that this would then subsequently motivate other educators to undertaken similar actions as well. This was especially important since I believed that many individuals would value the information I presented using personal testimonies and anecdotes. In fact, Silverman, author of *Doing Qualitative Research*, reiterated this himself as he explained that qualitative research often comes through as more relevant and heartfelt than quantitative data, especially if it follows individuals’ interests in the particular topic of this qualitative data (Silverman, 2010, 252).
3.2 Instruments of Data Collection

After creating my questions in relation to the data from my literature review, the next step was conducting the interviews. Interviewing was my primary means of data collection. The interviewing process required me to recruit two GTA elementary school teachers as participants. The interviews I conducted were both recorded and then transcribed following the ethical parameters of the consent document the participants received. As mentioned above, I conducted semi-structured qualitative interviews with my participants to gain a deeper understanding of their own personal experiences and their observations regarding whether their students were self-motivated ways to act eco-consciously. This semi-structured approach to interviewing was an appropriate method given the nature of my qualitative research for the following five reasons listed below.

First, semi-structured interviewing allowed me to retrieve relative data to help answer my nineteen interview questions. Secondly, with the responses I received, I was able to gain further insight on the individual participants’ background experiences with environmentalism and regarding what had influenced them to incorporate environmental practices into their own pedagogy. Thirdly, I was able to provide insight on what particular eco-friendly practices my participants incorporated into their every day classroom and how students reacted to these practices being present. Fourthly, I also gained secondhand insight on whether the presence of these practices alone motivated students to also be eco-conscious friendly in their own actions. Or, whether educators needed to turn to external sources of motivation to influence their students’ eco-friendly actions and behaviours. It was in regards to this second portion of the interview questions that the semi-structured approach to interviewing was particularly important. In fact, the broad structure of the questions allowed my participants to divulge further
information about the strategies they were using in their classrooms and about deeper personal insights relating to their own lived experiences as environmentally aware educators. Lastly, since the data I collected from each participant was categorized according to each individualized case study, the presence of both structured and unstructured responses provided a more wholesome range of material for me to decode and group together thematically. Similarly, Creswell in his own writing also stated that “gather[ing] extensive material from multiple sources of information [would] provide an in-depth picture of the case,” which in turn also further validated the semi-structured qualitative interviewing process of my case study approach to research (Creswell, 2013, 125).

3.3 Participants

Due to the qualitative case-study approach I utilized and in keeping in mind the various limitations and constraints I knew I would encounter (I explore these further in the Methodological Limitations/Strengths section of my Methodology), I designed three criteria that my participants were required to meet to ensure that they were a suitable fit for my research.

3.3.1 Sampling Criteria

1) Participants needed to be educators teaching at the elementary level in the GTA.

2) Participants needed to have an interest in teaching environmental awareness.

3) Participants needed to be willing to share their personal experiences in relation to the topic of teaching environmental awareness in the classroom.
3.3.2 Participant Recruitment

With the time constraints of this research study my recruitment strategy was based on convenience sampling. Since I myself was interested in the presence of environmental awareness in the classroom, I turned to existing contacts I acquired through my past teaching experiences that also had similar interests in this field. As with the other elements of my study, the participant recruitment portion also followed ethical procedures that were outlined in my consent document (these insights were also further disclosed in the Ethical Review Procedures section of my Methodology).

3.3.3 Participant Biographies

For the purpose of my study I referred to my first participant using the pseudonym Beth. Beth was a new teacher working at an Independent School in the GTA. At the time of her interview Beth was teaching a grade four and five split class. She identified herself as a teacher who was concerned about both environmental learning and teaching in her classroom.

Once again for the purpose of my study I also referred to my second participant using a pseudonym. His pseudonym was Steve. Steve was a tenured teacher. He was in his tenth year of teaching at the time of his interview. Steve was working at a Public School in the GTA. He was teaching grade eight homeroom core and also teaching grade seven and eight history and geography during his rotary periods. Steve also noted that in the past he had experiences teaching grades four, six and seven core as well. Much like Beth, Steve identified himself as a teacher who was concerned about the environment and who taught his students to have a sense of environmental consciousness.
3.4 Data Analysis

Once the interviews were completed and recorded I went on to transcribe exactly what my participants had said. I then grouped the data based on the commonalities that surfaced upon analyzing the interviews side by side. After coding the data I had analyzed I decided to categorize my data under five distinct thematic groups that had emerged. The thematic groups were the following: teachers’ personal connections, teachers’ environmental teaching practices, teachers’ strategies used to teach environmental content in the classroom, teachers’ challenges and successes implementing eco practices and lastly, teacher self reflection.

3.5 Ethical Review Procedures

Although the data collection process was a crucial aspect of my research, maintaining the safety, confidentiality and comfort of my participants was equally critical to ensuring my research process was exacted in an ethical manner. Firstly, my participants were both debriefed on the nature and vision of my research, both verbally as well as in writing. I provided a written consent letter to participants that they were required to read and sign prior to the interview. The letter reiterated that participation was voluntary and emphasized the fact that candidates should not at any time have felt obliged or pressured to participate. They were also given the right to withdraw from the study at any given time as well.

Beyond these elements, the consent letter also stated that the interviews would be anywhere between 45-60 minutes and would be audio recorded prior to being transcribed. Participants were given the option of receiving the interview questions prior to the interview. Post-interview, participants were also given the ability to review the transcripts and to revise their responses prior to the data being included into the research study. They were informed that
all data and records of their responses would be stored on two password-protected devices and destroyed after five years. Upon including their data, I also told participants that their identities would be protected by pseudonyms. Lastly, although participating in the interviews posed no serious risks to participants, I did mentioned that minimum risks may have arisen in the form of questions triggering emotional responses among participants. This minimal risk was made transparent to participants. Participants were also told that in an instance as such they would be allowed to omit the process of providing a response to ensure optimal comfort for them.

3.6 Methodological Limitations/Strengths

As with other research studies, my own research study contained inevitable methodological limitations and strengths. Due to the reality of time constraints and ethical parameters my study only allowed me to survey select teachers. For that reason, the information I gathered was solely based on those select few teachers’ personal experiences and observations in the classroom. Further, as a result of the ethical parameters mentioned above, I was also unable to receive perspectives from other individuals involved in the school system such as parent or student insights on the environmental matters I would be discussing.

Despite these limitations, there were also several benefits to collecting data from a small sample size and within a certain time frame. Since the data was not intended to be generalizable, the data I collected was more unique and individualized than data from a standard survey. This was due to the nature of semi-structured interviewing that allowed the participants to delve further into discussing what really mattered to them. It allowed them to unpack how they truly conceptualized environmentalism in theory but also in practice in the classroom. Lastly, my research also worked as a vehicle to validate these teachers’ voices as it provided them with a
space to safely and confidentially speak about what avenues of environmentalism truly mattered to them.

3.7 Conclusion

With the information I gained from this new area of my research process, I was in turn able to gain more of a wholesome and broad understanding of what motivated students to act eco-consciously in the classroom. After undergoing the various steps to data collection that I outlined in this chapter, in Chapter Four I group my findings according to the eye-opening pockets of data I discover among the individualized case studies and the themes that emerge within them.
CHAPTER FOUR: RESEARCH FINDINGS

4.0 Introductory Overview

The purpose of my Chapter Four was to reveal the findings I was able to collect from my individual participant case studies. As mentioned in my Chapter Three, to acquire data for my case study findings I conducted two face-to-face interviews. The aim was to discover what effect the implementation of eco-friendly strategies into the classroom by teachers had on encouraging elementary students to become self-motivated to implement their own eco-conscious actions into their daily routines in the classroom. By asking the participants nineteen interview questions to better unpack my over-arching research question, I was in turn able to discover many interesting insights to further develop this topic of environmental education in the classroom. I presented my findings throughout this chapter under headings that relate to the various themes that arose in the two interviews I conducted. The major themes that surfaced included: teachers’ personal connections, teachers’ environmental teaching practices, teachers’ strategies used to teach environmental content in the classroom, teachers’ challenges and successes implementing eco practices and lastly, teacher self reflection. In these thematic sections I also included direct comments and quotes from the participants to further authenticate their insights pertaining to the subject matter. Lastly, I connected these thematic findings to the previous data I acquired as a means to continue developing the conversation surrounding the presence environmental awareness and education in the classroom.

4.1 Teachers’ Personal Environmental Connections

To begin my research collection process, I believed it was crucial to start by asking the educators I was interviewing about any past experiences they might have had with environmental
awareness prior to acquiring their formal positions as teachers. After asking my participants about this, I was reminded of Leppert’s research. In her research she revealed the fact that her own interest in the field of eco-education and the environmental subject matter she teaches in her classroom came from her own pre-existing concern for recycling and waste management (Leppert, 2010, 63). This struck me as particularly interesting as both of my participants also noted that the sort of environmental efforts they infused into their own teaching practices was influenced by their life experiences as well.

**4.1.1 Teachers’ Personal Eco-Friendly Life Experiences**

Beth retold a story about a trip to a recycling plant in Niagara Falls that she experienced in her pre-service years. She revealed that this trip was a major influencing factor in the sort of environmental awareness she tried to incorporate into her own classroom teaching. She noted: “The amount of paper in that building was unbelievable! It kind of made me think a little more about what I could do differently going on” (Personal Communication, 2015).

Similarly, Steve also noted that there were various different happenings in his own life that motivated him to include eco-friendly practices into his classroom pedagogy as well. Much like Beth, Steve’s experiences were also tied to moments in his life where the importance of reducing waste (through efforts like recycling) became an ongoing emphasis: “I can remember my family as a child would try to recycle and compost before it became encouraged and collected by the municipality” (2015). Furthermore, Steve went on to reveal that his undergrad degree in geography helped further develop his environmental practices, allowing him to have a fairly strong background in eco-awareness upon completion. He stated: “With my undergrad degree in Geography I have a fairly strong background in eco-awareness.” (Personal
Communication, 2015). As a result, Steve revealed that he was motivated to implement environmentally friendly practices into his teaching from the very beginning of his career. He also explained that he had even gone on to carry these environmental practices with him as his career has continued.

In listening to these participants share stories about their past experiences with environmental awareness, this in turn had a twofold impact on further converging with my prior research. Firstly, as was mentioned above, Beth and Steve’s experiences, much like Leppert’s, directly motivated them to want to infuse their classroom with practices that were similarly themed to the environmental practices they were exposed to in their pasts (Leppert, 2010, 63). Secondly, both teachers and author Leppert noted that the reason that they decided to continue using these environmental practices in their on-going teaching careers was due to the fact that the environmental content was delivered to them in a meaningful way in their pasts as students, causing the content to truly strike a chord with them (Leppert 2010, 63). What these insights revealed to me first and foremost was that it was beneficial for teachers to be passionate about the kind of environmental practices they were infusing into their day-to-day classroom routines. Meanwhile, the data also proved that it was important that the delivery of the content was done in a way that would be meaningful to students so they could too in turn go on to autonomously adopt and adapt these practices for their own lives (Leppert, 2010, 63).

4.2 Teachers’ Environmental Practices in the Classroom

In an attempt to look more deeply at the sorts of meaningful environmental efforts Beth and Steve were implementing in their classrooms, I asked the participants to delve deeper to reveal exactly what kinds of practices these teachers encouraged their students to take part in.
Although both teachers utilized practices that had thematic ties to waste reduction, Beth focused more on implementing paper reduction practices whereas Steve supplemented his classroom waste reduction practices with attempts to infuse eco-conscious content into his lessons.

### 4.2.1 Utilizing Paper and Waste Reduction Practices in the Classroom

Since Beth revealed that she had carved out her own environmental niche in the realm of reducing, reusing and recycling after being inspired by her trip to the recycling plant in her past, I was able to learn throughout her interview that she continued to reflect this passion through the kinds of environmental practices she had her students take part in. One particular effort Beth undertook in her classroom was trying to make her waste management meaningful to her students’ lives. For example, after noticing her students really enjoyed doodling, Beth attempted to encourage students to use GOOS paper for doodling. She also used this topic of doodling (since it was relevant and meaningful to the students) to further explain the importance of reusing paper to reduce unnecessary paper waste. The topic of reducing was also something Beth tried to encourage through other avenues as well: “I made a conscious effort to use the white board instead of using chart paper...when [students were] working together I encouraged them to think out their math thinking on the white board” (Personal Communication, 2015). In further discussing with Beth, she also noted that all of her environmental practices were introduced to students as soon as she met them so students could be fully immersed in these practices as the year continued.

Introducing environmental practices into the classroom immediately upon meeting her students was an important insight that Beth revealed. This tactic was also noted in my previous research. In fact, in “Acting Today, Shaping Tomorrow: A Policy Framework for Environmental
Education in Ontario Schools” the document read: “the first goal is to promote learning about environmental issues and solutions. The second is to engage students in practicing and promoting environmental stewardship, both in the school and in the community” (2009, 9).

Much like the Acting Today, Shaping Tomorrow document suggested and similar to Beth’s views, Steve also agreed that it was important for students to be introduced to environmental practices at the beginning of the year. Steve suggested that following the initial introduction of his various environmental practices into the classroom: “when you remind students about the importance of these activities [both] to them and their lives, they are more willing to engage in them [at school]” (Personal Communication, 2015). For Steve, this meant continually encouraging students to engage in practices such as using reusable water bottles, using GOOS paper when brainstorming ideas, recycling when appropriate and bringing a Boomerang Lunch (litter-less lunch).

4.2.2 Utilizing Curriculum Content to Teach Environmentalism in the Classroom

Being a geography teacher as well, Steve explained that he also used the geography curriculum as a platform to further implicitly introduce environmental concerns to students. He revealed that in one lesson he introduced students to environmental damage and depletion by showing students a population counter. “The counter displayed the rapid rate at which the earth’s population is growing, from there I had students discuss what impacts this population growth would have on the world’s natural resources” (Personal Communication, 2015). Not only did Steve’s strategy align with the government mandate, Steve’s strategy also aligned with Davis’ environmental efforts found in my previous research. Moreover, it also became clear that Davis’ endeavours were similar to Steve’s efforts to introduce both implicit and explicit environmental
insights to students. Davis explained that “although students may have a degree of understanding environmental issues, their awareness must be continued to be stimulated and enlightened” (Davis, 1998, 118). As I continued to interview both teachers, it became apparent that continuously stimulating and enlightening students’ understanding of environmentalism was something that was important to both Steve and Beth’s environmental program goals as well.

4.3 School Wide Environmental Initiatives

Upon asking my participants about the effective environmental practices they integrated into their classroom on their own, I was also interested to learn about the environmental initiatives that were taking place in their wider school communities. This was something I was curious about upon looking more deeply into the Acting Today, Shaping Tomorrow document, as the document suggested there was great importance in “having organizations and individuals within the education system provide leadership by implementing and promoting responsible environmental practices throughout the system” (Ontario Ministry of Education, 2009, 9).

4.3.1 Bottom Up Environmental Initiatives

Beth was the first participant I asked about what eco-friendly programs her school was taking part in. Beth explained that although the school she was teaching at was part of the independent school system and had a school-wide philosophy of taking care of one’s environment, she stated: “they didn't have any specific mandated or regulated programs like Eco Schools, for instance, that exists in the public board” (Personal Communication, 2015). She further explained that although the school did have a recycling program that was run by the care-taking staff, she was never informed about how the recycling was sorted or where it went after
being picked up from each class. She also further explained that students did not know any of these details either, which she believed would have been beneficial for them to know especially since Beth was trying to promote reducing, reusing and recycling in her class.

4.3.2 Top Down Environmental Initiatives

When later speaking to Steve about the same matter, Steve explained that at his school there were several different attempts being made as a result of both board-wide and school-wide initiatives. He noted that the main program that was run at his school was an Eco Club. I was even fortunate enough to sit in on and experience the Eco Club give a remarkable presentation during an assembly about the importance of reusable water bottles one day when visiting Steve’s school. Steve also further explained that the Eco Club was responsible for promoting recycling and the Boomerang Lunch Program. He said beyond the Eco Club, administration also did their part to ensure that each classroom was equipped with a GOOS paper bin. He noted that the board also made an effort to put sensors on the lights in each classroom, making sure the lights would automatically shut off in no one was present in a room to further promote energy conservation. Similarly, Steve mentioned that the board also installed several water bottle filling stations in the schools. I was intrigued to see that the unit counted the number of plastic water bottles that had been reduced, and continued counting each time someone went to fill their water bottle. This acted as a visual reminder to students and staff of the contribution they are making to environmental conservation, which I thought was particularly effective.

Although Beth and Steve had different experiences, it was clear that both participants agreed on the point made by Acting Today, Shaping Tomorrow above that reiterated the importance of top-down leadership to further help make environmentalism seem like a
community wide effort, rather than it just being an individual classroom effort (2009, 11).

4.4 Strategies for Implementing Environmental Practices in the Classroom

After getting more insight about what environmental practices the participants and their students were taking part in both on a classroom level and greater school-wide level, I asked the participants if they were using any strategies to ensure that students were taking part in these practices. This was information I deemed would be insightful to compare with the preliminary findings I discovered when consulting various scholarly opinions (such as Basile’s) on how environmental practices could be implemented into the classroom (2000). One of the key insights I hoped to gain from my participants was an explanation of how they incorporated environmental efforts they revealed above into their classroom routine. I was also curious to find out if the participants were using any incentive programs to further motivate their students. This was also an important point of deeper reflection, since in my previous research it was noted in Ohtomo and Hirose’s data that: “eco-friendly behaviour may be inhibited or promoted depending upon whether the reactive process or the intentional process is more salient” (2007, 1).

4.4.1 Using a Middle Ground Approach to Implement Environmental Practices

As she began to allude to in some of her responses above, the approach Beth took when incorporating her environmental practices into the classroom was a middle-ground approach. In her research, for Basile, a middle-ground approach was rooted in the ability to rule out what was of interest and meaningful to students as part of the process of self-discovery in the world of sustainability, while also ensuring the presence of a structured and foundational basis for this exploration (2000, 21). Much like Basile, Beth explained that she attempted to root the
importance of reducing paper waste through the action of encouraging students to use GOOS paper when doodling. She knew this would be an effort that would be relevant to students and therefore would also be more likely for students to engage in effortlessly. However, Beth also explained that just suggesting this idea implicitly or abstractly without reinforcement would not have been a feasible way to ensure this effort was being made by students to reduce paper waste.

Like Beth, Steve also explained that he used a middle of the ground approach when infusing his classroom with environmental practices for students to engage in. Similar again to Beth, Steve attempted to align the environmental practices he taught in his class with those the school community was engaging in (for example, reducing the use of plastic water bottles, using GOOS paper, conserving energy etc.) as these practices were relevant and part of students’ lives already.

4.4.2 Using Verbal Reminders to Implement Environmental Practices in the Classroom

Beth noted that she would need to use verbal reminders frequently to remind students to use GOOS paper rather than new sheets of paper for doodling. Beyond this, Beth said she used various statements as a form of providing verbal encouragement and positive feedback to recognize moments when students were making an apparent effort to use GOOS paper. Although Beth explained that she didn't have a reward system that functioned with the presence of physical rewards for students, she did note that her verbal reward system did indeed function effectively. In fact, Beth revealed that after she repeatedly verbally reinforced students’ use of GOOS paper in a positive manner, using GOOS paper regularly became more of a student routine as the year continued. This was again a similar point to the one made above by Ohtomo and Hirose, as it
seemed as though Beth’s encouragement did in turn generate salient outcomes, as her students continued to want to engage in this process of using GOOS paper (2007).

Moreover, much liked Beth and Basile’s approaches; Steve’s middle of the ground approach was also supported by verbal reinforcement strategies similar to Beth’s. In speaking about his intermediate level class year, Steve noted that although most students were likely to participate, those that were reluctant were the ones who required a verbal reminder more frequently. Steve explained that his tactic would often include reminding students of how making positive environmental efforts would not only benefit the school community, but also benefit their personal lives going forward (Personal Communication, 2015). Beyond verbal reminders and encouragements Steve noted that he did not use any other forms of rewards. He stated: “I have [used reward systems] in the past, but I found that the students were getting much better and now realized that this was the way the school and teachers were going. So it was easier to be onboard than to argue with us” (Personal Communication, 2015).

Therefore, similar to Beth’s experiences, Steve’s responses revealed that his students too were more likely to participate in environmental efforts once these practices had become an engrained routine, once again all relaying back to Ohtomo and Hirose’s cause and effect research stated above (2007).

4.5 Teachers’ Challenges and Successes Implementing Eco Practices in the Classroom

Upon asking both teachers about what practices they were implementing into the classroom as part of school-wide initiatives and personal efforts, I was then interested to learn about the outcomes of these actions. For both Beth and Steve, their experiences implementing environmental practices into the classroom were met with both challenges and successes.
Firstly, when speaking to Beth she revealed that one of her greatest successes was being able to have her students transform the action of occasionally using GOOS paper upon her request into an automatic response and consistent routine in the classroom. She reflected that this was a notable success, as encouraging the use of GOOS paper in the classroom was a practice that began as more of a challenge and was a practice Beth spent much time verbally enforcing at first. Therefore, seeing the students use GOOS paper more autonomously and regularly in turn became a positive environmental development in Beth’s classroom. Although this environmental initiative did end in an encouraging outcome, Beth also spoke to the various challenges she faced while trying to ensure that using GOOS paper in the classroom became a routine act for students.

4.5.1 Successes and Challenges Based on Teachers’ Perceptions of Student Reaction

One of the greatest challenges Beth noted was attempting to have her students think critically about wasting paper by looking beyond the act of wasting paper as merely something the students were not allowed to do. She explained that part of this challenge stemmed from a larger challenge she was facing: the fact that there were no firm environmental protocols school-wide to help instill a sense environmental awareness among the school community. For this reason, Beth explained that to further foster the discussion surrounding reducing, reusing and recycling and to really get the point across to students, she sought to utilize entertainment. She stated that she played the movie The Lorax for her students as a way to engage them in a more informed discussion about environmental preservation. She noted: “there were some great thoughts from them after watching the movie, despite the fact that they struggled to self-regulate these sorts of thoughts into actions in the past” (Personal Communication, 2015). Beth’s decision to reward her students’ eco-friendly actions with eco-friendly rewards reminded me again of my
previous research, as the Centre for Science in Public interest also made a recommendation to reinforce positive eco-friendly behaviours with eco-friendly rewards (2004).

Much like Beth’s experiences, Steve’s experiences implementing environmental awareness into the classroom were also met with various challenges and successes. Similar to Beth’s experiences, Steve also noted that even despite the fact that environmental awareness was being regularly infused into the school community through different ongoing efforts, he still needed to remind students that they were supposed to be “doing their part in eco-friendly activities” (Personal Communication, 2015). Moreover, although Steve was also able to have most students engage in the environmental practices in a way that became routine to them eventually, Steve still faced challenges along the way. Steve explained that his biggest challenges came from students who didn't see any value in the environmental programs he was trying to implement.

### 4.5.2 External Factors Influencing Teachers’ Successes and Challenges

Steve explained that another challenge he faced occurred when other teachers came in to teach his students and did not follow or reinforce similar environmental practices to the ones he was incorporating into his classroom: “If other teachers didn’t follow the same routines that I used when they were in my room it would be a challenge” (Personal Communication, 2015). Steve’s statement also related back to Beth’s own struggles to implement environmental initiatives in a community where environmental efforts were not a top priority. Steve and Beth’s decisions to continue to positively reinforce environmental behaviours in the classroom frequently to ensure they became habitual (despite the other barriers they were facing when implementing eco-friendly practices into their classrooms) was a factor Windholz and Lamal’s
research also emphasized. In fact, both the teachers and the authors seemed to believe that students would be more likely to participate in eco-friendly activities if their actions were motivated by positive reinforcement (Windholz and Lamal, 1986, 192).

For this reason, despite the fact that both teachers faced some degree of challenging moments in their journey to attempt to motivate their students to engage in eco-friendly practices, both teachers continued to be successful when using verbal reinforcement to motivate and encourage their students to behave in environmentally friendly ways. In turn, through using positive reinforcement both teachers were able to note an overall great success in having their students eventually engage in the environmental practices routinely and autonomously.

4.6 Teachers’ Self Reflection

Upon acknowledging the various challenges and many successes my participants had when infusing environmental practices into their classrooms, I then asked Steve and Beth to further reflect on their actions. I was interested to learn about any feedback they may have received from students and the school community. I was also looking to find out about any future goals these educators might have had for their environmental programs going forward based on their previous experiences mentioned above.

When asking Beth to comment on any feedback that she received in regards to the environmental practices she was implementing, she stated that the majority of her feedback was more implicit than explicit. She also noted that the majority of this anecdotal feedback came from her students instead of the school community as a whole: “[The students’] feedback was most interesting to me after watching The Lorax. Discussing that kind of stuff was where I think that they expressed what they were thinking most” (Personal Communication, 2015). As
mentioned before, Beth again reflectively pointed out the successes she encountered when using media to motivate her students to engage in environmental practices in the classroom. Beth stated: “…motivating eco-friendly behaviours with movie rewards definitely helped, even as a way to further get the point across [to students]” (Personal Communication, 2015).

Similar to the content in Beth’s reflections, Steve also spoke reflectively about the feedback he received and the kinds of goals he had for his own classroom environmental practices going forward. For Steve, the feedback he received came from both the school community as well his students. He explained that the feedback from his school community focused on what strategies were being used and what more could be done to further infuse environmental practices both at the classroom level and school-wide. Steve noted that the feedback from his students was mainly reactionary and implicit much like the feedback Beth received from her students. In fact, Steve also spoke about the feedback and outcomes he encountered when he implemented reward systems. Like Beth, Steve spoke about using point system incentive programs in the past, but noted that with his most recent intermediate class he used verbal encouragements more so as a motivational strategy for his students. Steve also further explained that he believed that he did not need to outwardly reward students for being “good citizens of the earth” (Personal Communication, 2015). It was interesting to note the various tactics that both Beth and Steve reflected back on. It was particularly interesting since in Seone and Smink also stated that although most individuals think of reward systems as mainly utilizing food incentives, classroom incentives instead could and do exist on a broad spectrum (1991, 2).
4.6.1 Teachers’ Goals For Future Environmental Teaching Practices

After reflecting, Beth spoke more about her future goals. Beth noted that in looking back, one of her goals going forward would therefore be to implement reward systems and use incentives such as watching films to help make environmentalism a larger focus in the classroom. However, Beth noted that: “I hope eventually [students] get to the point where they don’t need reward systems. Rather, they will do it because they know it is the right thing to do and that it's taking care of their Earth” (Personal Communication, 2015).

Later, upon speaking about the feedback he received, Steve then noted the endeavours he hoped to achieve through his classroom environmentally friendly pedagogy going forward. Like Beth’s main goal, Steve’s goal was also one that tailored to his students behaviours and reactions: “I would like to see my students start to think about their impact on the environment and try to make changes in their daily lives to start making a difference” (Personal Communication, 2015). After hearing Steve’s response, it was insightful to regard the way in which both teachers’ responses aligned with my prior research one final time. In paralleling the data sets I found that like Steve and Beth, Basile also believed that “students should be able to rule out what is of interest and meaningful to them [autonomously] as part of the process of self-discovery in the world of sustainability,” once again triangulating my findings (2000, 21).

4.7 Conclusion

In compiling the information from both of my participant case studies I was able to draw many parallels with this data and with my initial research findings. By being able to triangulate my data, I was able to gain a better understanding what effect the implementation of eco-friendly strategies into the classroom by teachers had on encouraging elementary students to become self-
motivated to implement their own eco-conscious actions into their daily routines in the classroom. In the following chapter look more closely at the overall outcomes of the data findings and what this meant to my research question as a whole. I also use this chapter to discuss the implications, recommendations and any areas of further research for my topic.
CHAPTER FIVE: IMPLICATIONS

5.0 Introductory Overview

Upon collecting and presenting my data findings, the purpose of my Chapter Five was to further analyze and discuss the information gathered from the individual case studies I was studying in Chapter Four. In doing so, I was able to continue to relate my most current research with the findings I acquired through my prior environmental education research ventures. Beyond discussing the ways in which my previous research was related to my participant data, I also wanted to use this chapter to look more deeply at the implications that my research would have on the educational community. Looking at the implications broadly, I was in turn able to understand the importance this research would have for pre-service education, teachers, school communities and administration, and for the Ministry of Education. Moreover, I was also eager to unpack what narrow implications my data would have on my own development as a researcher and a teacher myself. From there I wanted to take my implications one step further. I wanted to do this by way of offering recommendations based on the insights I acquired about what effects the implementation of eco-friendly strategies into the classroom by teachers had on encouraging elementary students to become self-motivated to implement their own eco-conscious actions into their daily routines in the classroom. Lastly, I conclude my chapter with insights regarding areas of further research.

5.1 Overview of Key Findings and Their Significance

5.1.1 Teachers’ Personal Environmental Connections

After collecting and analyzing my case-study data from the interviews I conducted with Beth and Steve in Chapter Four, I wanted to draw further conclusions by looking more deeply
into the ways in which my current data aligned with the previous research I acquired through my literature review. The first parallel I drew between my past and current research related to the role teachers’ personal environmental connections play in influencing teachers to include environmental practices into their daily classroom routines. Firstly, Beth and Steve’s personal experiences with environmental awareness directly motivated both participants to want to infuse their classroom with practices that were similar to the environmental practices they were exposed to in their pasts. Similar to the participants’ decision to infuse content that connected to their past experiences, in her research Leppert revealed that she also taught environmental content and practices to her students that had impacted her in some way in her past too (2010). Secondly, both teachers and author Leppert noted that the reason that they decided to continue using these environmental practices in their on-going teaching careers was due to the fact that the environmental content was delivered to them in a meaningful way that truly struck a chord with them. What these insights revealed to me was that first and foremost it was beneficial for teachers to be passionate about the kind of environmental practices they were infusing into their day-to-day classroom routines. Meanwhile, it also seemed important that the delivery of the content was done in a way that would be meaningful to students so they could in turn go on to autonomously adopt and adapt these practices for their own lives.

5.1.2 Teachers’ Environmental Practices in the Classroom

I then proceeded to look at the actual environmental practices teachers were implementing in the classroom. In conducting my previous research, I noted Davis’ strategy of introducing environmental education both implicitly and explicitly to students in the classroom (1998, 118). This was a practice that both of my participants Steve and Beth were also
implementing in their classrooms as well. Later, in discussing the specificities of the implicit and explicit environmental practices that my participants were taking part in, one particular way that their practices were explicitly shaped was through the role the school community played in encouraging school-wide environmental initiatives. Although Beth and Steve had different experiences, both participants agreed on the point made by *Acting Today, Shaping Tomorrow* (a resource that I had also looked at in conducting my prior research) that reiterated the importance of using top-down leadership to further help make environmentalism seem like a community wide effort, rather than it just being an individual classroom effort (2009).

**5.1.3 Strategies to Implement Environmental Practices Among Students**

I was then interested in what personal environmental implantation strategies my participants were using in their classroom. One major way that all of my data aligned was related to the fact that all parties believed that their environmental strategies only became regular classroom practices when these strategies became an engrained routine for students. Both Beth and Steve also mentioned this. For instance, Steve stated: “I have [used reward systems] in the past, but I found that the students were getting much better and now realize that this is the way the school and teachers are going (Personal Communication, October 2015). This was also eloquently summed up by researchers Bourke et al’s findings, as they too stated that: “Children’s learning can be shaped and molded by manipulating the antecedents (i.e. the environment, the cues, the instructions) or the consequences [what happens after learning]” (2012, 16).
5.1.4 Teachers’ Challenges and Successes Implementing Eco Practices in the Classroom

My participants also went on to speak about the challenges and successes they encountered when implementing these practices and strategies based on their students' reactions. Despite the fact that both teachers faced some degree of challenging moments in their journeys to attempt to motivate their students to engage in eco-friendly practices, both teachers were successful at using verbal reinforcement to continually motivate and encourage their students to behave in environmentally friendly ways. Much like Bourke et al.’s data that stated that “learning can be shaped and molded by manipulating the antecedents,” my research findings from Windholz and Lamal also revealed that students would be more likely to participate in eco-friendly activities if their actions were motivated by positive reinforcement (1986, 192). In turn, through using positive reinforcement both teachers and researchers were able to note an overall success in having their students eventually engage in the environmental practices more routinely and autonomously.

5.1.5 Teachers’ Self Reflection

My final point of relating data was to see the ways in which my participants’ self-reflections again aligned back with the previous data I collected along my research journey. After interviewing Beth and Steve, both participants noted that it was important to teach environmental content that would be meaningful to the students and to shaping their overall eco-self reflexivity. In my prior data analysis I found that Basile’s research also suggested that “students should be able to rule out what is of interest and meaningful to them [autonomously] as part of the process of self-discovery in the world of sustainability,” (2000, 21).

Lastly, throughout my research study, I continued to analyze the ways in which teacher
implementation of environmental practices in the classroom encouraged students to become self-motivated to implement their own eco-conscious actions in their daily classroom routines. While conducting this study, the majority of my research pointed to the fact that most students would need to have their eco-conscious efforts reinforced through routine and through some degree of a reward system as a means of scaffolding them. The majority of my research also confirmed that as students become engrained in a routine and gradual release occurred, students would in turn become increasingly interested and self-motivated to act in environmentally friendly ways.

5.2 Environmental Education Conceptual Framework

To further supplement these findings, I chose to sum up the specific elements of my study in the conceptual map below (Fig 1.1). I decided to lay out the development of my conceptual framework in this way as a means to further develop a clearer understanding of how the insights of individual teacher integration of environmental education informs student eco-action, and how this idea has development throughout my research process.

5.3 Implications

Beyond gathering and analyzing my research data, the next step in my research process was looking at the broad and narrow implications my data has for both the educational community, as well as for myself as a researcher and future teacher. I organized my findings below for my broad implications under the following headers: Implications for Pre-Service Programs, Implications for Teachers, Implications for Schools and Administration and lastly, Implications for the Ministry of Education. Below those, I also organized my findings for my narrow implications under the headers: Implications for Myself as a Researcher and Implications
for Myself as a Teacher.

5.3.1 Broad Implications

5.3.1.1 Implications for Pre-Service Programs

Based on the conclusions of the study and relevant literature review, I was in turn able to note that teachers’ initial understandings of environmental consciousness were further shaped by experiences they encountered in their pre-service training. Beth explained that her environmental awareness really grew once her and her fellow pre-service teacher candidates took a trip to a recycling plant where she could see the shocking reality of paper waste first hand. Steve explained that his own environmental awareness also grew in his pre-service years, as he was able to further understand the importance of teaching environmentalism through the lens of his geography teachable. However, despite the fact that both educators expanded their understanding of the importance of environmental awareness during their pre-service years, both educators drew their conclusions implicitly and independently due to their own personal concerns for the environment. In fact, neither teacher was given any explicit theoretical or practical teaching tips about environmental education through their pre-service programs. Each teacher only chose to continue to incorporate eco-friendly practices into their classroom pedagogy again for the reason that it was a part of their own personal concern.

5.3.1.2 Implications for Teachers

Through interviewing both of my participants (and as mentioned above), I found out that Beth and Steve’s eco-consciousness was not solely shaped by their pre-service experiences. Rather, Beth and Steve’s environmental concerns began to develop during their childhoods. In
fact, both participants revealed that they were exposed to environmental awareness in meaningful ways that in turn continued to stay with them along their journeys through life. Therefore due to Steve and Beth’s experiences, in conjunction with Basile’s findings about making environmentalism meaningful to students so they can shape their own understandings of it, I believe it is crucial for teachers to expose students to environmental subject matter at an early age (2000, 21).

5.3.1.3 Implications for Administration and the School Community

When looking back on Beth and Steve’s experiences, it was also clear that Steve initially had a much more positive reception from his students when it came to implementing environmentally friendly practices in the classroom due to the fact that environmentalism was supported as a school wide effort. Beth on the other hand had a tougher time implementing environmental practices at her own school due to the fact that environmental education was not as widely support by her administration or school community. In summation, if students were to become autonomous and self-motivated in undertaking environmentally friendly behaviours, it is important that these behaviours are consistently modeled to them in the scaffolded stages of their eco-awareness development.

5.3.1.4 Implications for the Ministry of Education

In their interviews, Beth and Steve were given the chance to reflect deeply on their environmental practices and to think of strategies they could use to better develop these practices for their classes in the future. The Ministry of Education could also provide schools with similar avenues for reflection by encouraging time for professional development courses on
environmental education. This would allow teachers the time and space to have meaningful conversations about how to motivate their students to be eco-conscious day to day. The Ministry could also provide schools with more resources to further develop environmental programs in schools to ensure they are relevant and meaningful to students.

5.3.2 Narrow Implications

5.3.2.1 Implications for Myself as a Researcher

Since environmental education is an area of teaching that I am passionate about myself, conducting this research study thus allowed me to further expand my knowledge of the field while developing my skills as a researcher. I was very interested to look more deeply at the existing research that has been conducted and further aligning that with the data I collected through conducting participant interviews. In doing so, I was able to gain a comprehensive and qualitative understanding of the importance of environmental education. In turn, exploring this field of research provided me with a more critical lens into how environmental theory really informs practice.

5.3.2.2 Implications for Myself as a Teacher

Through the process of conducting this research study, I have grown to learn a great deal about myself not only theoretically as a researcher, but also practically as a teacher. I have in turn gained many practical tips and techniques I can now utilize in my own classrooms when infusing environmental education into my own routines. This process has also allowed me to reflect on my own experiences attempting to infuse a sense of eco-consciousness into my students during my own short placements in various classrooms. I believe this process of
reflecting and gaining new tips and techniques will be a great asset to me. In fact, it will help me structure my own pedagogical approach to environmental awareness in a way that ensures the content and practices are most importantly meaningful and relevant to my students.

5.4 Recommendations

Based on the implications listed above and what I have learned throughout my research study, I have thus come up with the following recommendations I believe will help ensure environmental awareness is a content matter that is infused across all spectrums of education.

Above, I stated that growing a concern for environmental awareness in the classroom should begin at the pre-service level. However I believe that it should receive more attention than just merely being referenced as an important topic to teach. Pre-service teachers can be offered a course that is solely dedicated to environmental infusion in the classroom. Another option could be ensuring that all pre-service courses devote one session per subject matter to addressing environmental infusion. This would help future teachers not only understand how environmentalism can be taught cross-curricularly, but also equip these teachers with ways environmental content and practices can be infused into classroom management, lesson planning, assessment etc.

Upon entering the classroom, teachers can also look to see what environmental initiatives their school community is taking part in and extend these practices into the classroom to further instill routine environmentally conscious behaviours in their students. Teachers can also strive to ensure that the environmental content and routines they are implementing are being infused into the classroom regularly so students may develop a habit of acting in eco-friendly ways. If students are exposed to environmentalism at a young age and it is continuously reinforced
throughout their elementary schooling, students will in turn have the ability to carve out their own environmental niche depending on what interests them. Since their niches will be interesting and meaningful to these students, this will also likely motivate students to engage in these practices in autonomous and self-motivated ways eventually as well. Teachers might also find that some practices and strategies will be more effective than others. For this reason, teachers should also be patient and flexible with their environmental routines, as some students will be more willing to partake in environmentally friendly practices more autonomously than others at first.

However, teachers cannot implement environmental endeavours alone. School communities, administration and the Ministry of Education should partner with teachers to ensure that environmental content and practices are being enacted as a school-wide approach. This is especially crucial since environmental infusion in the classroom has become mandated in Ontario through the publication of “Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools” (2009). Therefore in order to ensure that teachers have the necessary resources to implement these mandates it is crucial that the Ministry of Education provides teachers with in-service training sessions to allow them to broaden their own knowledge of environmentalism. Doing this may in turn help teachers feel confident when teaching these practices and content to their students. Administration should also ensure that teachers are given professional development days where teachers can further collaborate on environmental efforts that can then be implemented both independently and school wide. Lastly, schools may also choose to allot a portion of their budget to funding the purchasing of additional environmental education resources beyond those provided by the Ministry or by school boards.
5.5 Areas for Further Study

Throughout my research study, I continued to analyze the ways in which teacher implementation of environmental practices in the classroom encourages students to become self-motivated to implement their own eco-conscious actions in their daily classroom routines. I hope to continue the portion of my research that looks mainly at the efforts teachers are undertaking when incorporating environmentalism into the classroom by broadly examining more practices, strategies and reward systems teachers are using in their pedagogical approaches. Since I focused my research mainly on the implementation of these practices in a classroom setting, in the future I also hope to look at environmental education beyond this traditional setting. In my future research endeavours I also hope to look more closely at the ways in which students’ motivations to act in environmentally friendly ways are shaped within an outdoor education setting.

5.6 Concluding Comments

After reflecting on my data findings the purpose of this chapter was to reflect on the information gathered from my various areas of research. Beyond regarding the ways in which my research was related, I also wanted to use this chapter to look more deeply at the implications that my research would have broadly on the educational community and more narrowly for me as a researcher and future teacher. I also wanted to look at the implications more critically. I did this in order to offer recommendations that would draw from the insights I acquired about what effects the implementation of eco-friendly strategies into the classroom by teachers had on encouraging elementary students to become self-motivated to implement their own eco-conscious actions into their daily routines in the classroom. I then aimed to conclude my chapter with insights regarding areas of further research. I did this not only to further my own
understanding of the role that teachers play in implementing eco-friendly strategies in the classroom, but also to further the understandings of others who are also interested in this same subject matter.
WORKS CITED


Personal Communication. (2015, September 16). MTRP Participant Interview. [Interview Transcript].

Personal Communication. (2015, October 9). MTRP Participant Interview. [Interview Transcript].


APPENDICES

Appendix A: Definition of Terms

**Eco-action:** An environmentally friendly action or behaviour.

**Eco-consciousness:** A sense of being environmentally aware.

**Eco-friendly behaviours:** Behaviours that are not damaging to the environment, rather sustainable to the environment. The specific behaviours I will observe in my MTRP will include: a willingness to consume sustainable foods, turning off lights, conserving heating and air, reducing food and class-room generated waste (such as handouts, scrap paper and paper towels to name a few examples), recycling and composting, undertaking in greening projects and undertaking in increased biodiversity projects.

**Eco-strategies:** Environmentally friendly strategies or tactics. For example: bringing litter-less lunches, taking strives to use recycling and composting receptacles in addition to garbage receptacles in the classroom, using GOOS (good on one side) paper as appose to a brand new, clean sheet of paper.

*I will be using several variations or synonyms of the phrase “eco-friendly” interchangeably throughout my MTRP.*

**Eco-theory:** “The theoretical impetus that comes from the recognition the relationship between humans and the nonhuman world, especially at a time of growing environmental crisis.” (Cultures and Environments: On Environmental Cultural, 1997).

**In loco parentis:** Greek for “in the place of the parents.”

**Self-Reflexivity:** a cause and effect relationship where the entity at hand instigates the action or examination (Wikipedia, 2015).
Appendix B: Letter Of Consent For Interview

Date: ___________________

Dear ___________________,

My name is Nicole Karpinski and I am a graduate student at OISE, University of Toronto. I am currently enrolled as a Master of Teaching candidate. This is an invitation to participate in a Master of Teaching Research Project (MTRP), a major assignment in our program. My own MTRP will be looking at what effect the implementation of eco-friendly strategies into the classroom by teachers has on encouraging elementary level students to become self-motivated to implement their own eco-conscious actions into their daily routines in the classroom. I think that your knowledge and experience will provide insights into this topic.

I am writing a report on this study as a requirement of the Master of Teaching Program. My course instructor who is providing support for the process this year is Dr. Peter Yee Han Joong. My research supervisor is also Dr. Peter Yee Han Joong. The purpose of this requirement is to allow us to become familiar with a variety of ways to do research. Upon receiving your informed consent to participate, the time and location of the interview will then be determined in a way that will accommodate your schedule. I can conduct the interview at your office or workplace, in a public place, or anywhere else may be convenient for you. You will also receive an electronic or hard copy of the interview questions I will be asking prior to the selected date of our interview. On the day of the interview, my process of data collection will consist of a 45-60 minute semi-structured interview that will be audio-recorded. Responses given during the interview will be transcribed in full. You will have the opportunity to re-read the written transcriptions and adjust your responses accordingly prior to the information being included into the final draft of my MTRP assignment in early April 2016. If you wish to receive the final report of the MTRP via email upon its completion please also bring this to the attention of Nicole Karpinski during your interview.

Please also note that the contents of this interview will be used for my assignment, which will include a final paper, as well as informal presentations to my classmates and/or potentially at a conference or publication. Your name will be protected with the use of a pseudonym. The inclusion of other identity markers such as the name of your school and school board will also be omitted to further ensure confidentiality. The only explicit identity markers that will be included in my MTRP will be the grade level you teach and the general geographical area you teach in (i.e. the GTA). All information I gather will be stored on two password-protected devices to ensure the optimal safety of your information. Besides myself, the only people who will have access to my assignment work will be my research supervisor and my course instructor. All data associated with this paper will be destroyed no more than five years after the MTRP report has presented and/or published.
You are free to withdraw from the study, even after you have consented to participate, without negative consequences at any point up until the final submission of the report in April 2016. Please note that during the interview you may also decline to answer any specific questions. Also be aware that there is minimal risk to you for assisting in the project.

Please sign and date two copies of the attached Consent Form if you agree to be interviewed and return it to Nicole Karpinski. Participants who have not submitted a completed Consent Form prior to the interview will not be interviewed. The form can be scanned and emailed to Nicole Karpinski (n.karpinski@mail.utoronto.ca), or given to her in person prior to your selected interview date. It is also encouraged that you retain the second copy of this letter for your own records.

Thank you very much for your help.

Yours sincerely,

Nicole Karpinski
MT Program Candidate
n.karpinski@mail.utoronto.ca
(905) ***.****

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 at any time without penalty.

I have read the letter provided to me by ________________________(name of researcher) and agree to participate in an interview for the purposes described.

Signature: ______________________________________

Name (printed): ___________________________________

Date: ____________________
Appendix C: Interview Questions

Section A: Background

1) How long have you been working as an educator?

2) What grades did you teach during this time?

3) How long have you been implementing environmentally friendly practices into your teaching?

4) Can you re-call anything in your past experiences that has motivated you to include eco-friendly practices into your classroom pedagogy?

Section B: What/ How?

5) Can you tell me about the eco-friendly programs your school is taking part in?

6) What are the main eco-friendly practices that you are implementing in your own classroom?

7) Do you introduce these eco-friendly practices at the beginning of each year as part of your classroom management?

8) What strategies and resources do you use to implement these environmentally friendly practices into your classroom routine?

9) Do you utilize any reward systems or incentive programs to further motivate students to act according to the eco-conscious guidelines you set in place?

10) Are students more likely to continue to model these eco-practices with a reward system in place?

Section C: Why?

11) Do you need to remind students to engage in these environmentally friendly practices?

12) What are some examples of students’ initial reactions to these eco-friendly practices being implemented into their classroom routine?

13) Do you believe students would still have been as willing to engage in the eco-friendly classroom routines you established if the practices were not being reinforced?

14) Do you think this is a result of the students’ being/ not being exposed to eco-conscious practices in a classroom setting beforehand?

15) To what degree does entertainment and social media drive students to act in eco-friendly ways?
Section D: Next Step/ Barriers

16) What challenges did you face when implementing your environmentally friendly practices into your classroom routine?

17) What constructive feedback did you receive from your students or the school community regarding the environmentally friendly practices you were implementing?

18) What goals do you hope to achieve through your environmentally friendly pedagogy going forward?

19) Do you have any advice for teachers trying to implement eco-friendly practices into their classroom routine for the first time?
Appendix D: Environmental Education Conceptual Framework Map

Integration of Environmental Education
- based on teachers' previous experiences with environmental education
- environmental awareness further reinforced through pre-service training

Implementation Practices
- encouraging the use of GOOS paper
- reminding students about reusing water bottles

Strategies to Reinforce Implementation
- verbal reinforcement
- some use of environmentally friendly rewards (i.e. watching a movie)

Students Reaction to Environmental Practices and Implementation Strategies
- repeated reminders necessary at the beginning of implementation
- more autonomous motivation when engaging with the practices as the year continued