The Integration of Nature…

Masters Thesis Research Project
The Integration of Nature and Environmental Education in the Master of Teaching Initial Teacher Education Program

By

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Proposal submitted to Dr. Cheryl Madeira

A research paper proposal submitted in conformity with the requirements of the degree of Master of Teaching Department of Curriculum, Teaching and Learning Ontario Institute for Studies in Education of the University of Toronto

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Abstract

This is an exploratory case study that investigates the integration of nature in teacher education. Educational research and policies advocate for environmental education, however there are gaps identified with the implementation of nature in education and more specifically with the education of pre-service teachers. This study looked at current practices regarding the integration of nature in the Masters of Teaching program in order to identify barriers and areas in need of improvement. Semi-structured interviews were conducted with 4 teacher educators and 3 teacher candidates in order to determine present efforts to integrate ‘contact with nature’ and environmental education into the program. ‘Contact with nature’ refers to viewing, being in proximity of, and active participation among the processes of birth, death, reproduction, and relationships between species. Three themes emerged from the data: personal/professional connection to nature, perception of the importance of nature in education, and integration of nature in syllabi, curricula, lessons, and teaching techniques. Findings are discussed in terms of two main questions: what are current efforts to integrate nature in the program and what are the barriers? This study lends to existing literature on the integration of nature in pre-service teacher education.
Acknowledgements

I wish to acknowledge and thank all the people that have helped me through my education and teaching experiences, allowing to me develop my skills in leadership, research, and critical thinking. Thanks to Cheryl Madeira, whose diligence in refinement of research and flexibility in understanding has been hugely important to the development of this paper. Thanks to my fiancé, my family, and my friends for the emotional support and guidance. Finally thanks to all my teachers, camp counselors, colleagues, students, and campers who’ve helped me develop my identity as a teacher: I can only hope to give my future students as much guidance as you’ve given me.
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Chapter 1: INTRODUCTION

1.1 Introduction to the Research Study

Recently there has been an alarming disconnection between individuals and their natural surroundings, most prevalent in today’s youth. In *Last Child in the Woods: Saving our Children from Nature Deficit Disorder*, Richard Louv (2005) coined a pertinent phrase describing this trend as the ‘Nature Deficit Disorder’ (NDD). The NDD depicts more of an epidemic than a disorder and is connected with the increasing trends in many mental and physical health diagnoses, media use, and prescription medications, along with related decreases in time spent outdoors, physical activity, natural eating habits, and ecological knowledge (Louv, 2005). In reaction to these trends, research studies from the environmental psychology and ecopsychology fields (e.g. Selhub & Logan, 2012) have begun to document the wide variety of beneficial effects of ‘contact with nature,’ especially in youth development and learning. ‘Contact with nature’ is defined as having 3 levels: viewing nature, being in the presence of nature, and active participation in nature (Stone, 2006; as cited in Townsend & Weerasuriya, 2010), with “nature” defined as “an organic environment where the majority of ecosystem processes are present (e.g. birth, death, reproduction, relationships between species)” (Maller, Townsend, Pryor, Brown, & St Leger, 2006; as cited in Townsend & Weerasuriya, 2010).
The benefits of ‘contact with nature’ experiences has also identified the need to reorient teacher education to address sustainability and other issues with respect to the environment. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) worked with an international network of 30 teacher education institutions across 28 countries and published the document *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* (UNESCO, 2005). The group established that though institutional change was difficult the issue was urgent, and several sustainability initiatives were adopted on national levels such as the Ministry document *Shaping Our Schools, Shaping Our Future* (MOE, 2007). It was recognized by all that it “will take concerted effort and resources to establish Education for Sustainable Development (ESD) in curricula, programs, practices, and policies across teacher-education institutions” (UNESCO, 2005).

In Ontario a similar pattern has been seen where the Ministry of Education reviewed the current trends in environmental education and then published a document called *Shaping Our Schools Shaping Our Future: Environmental Education in Ontario Schools* (MOE, 2007). The document refers to environmental education as

“education about the environment, for the environment, and in the environment that promotes an understanding of, rich and active experience in, and an appreciation for the dynamic interactions of the Earth’s physical and biological systems, the dependency of our social and economic systems on these natural systems, the scientific and human dimensions of environmental issues, and the positive and negative consequences, both intended and unintended, of the interactions between human-created and natural systems,” (p. 6).
A broad but integrated definition, though it connects strongly with this papers’ definition of ‘contact with nature.’ This document describes how “the reorganization of curriculum in the late 1990s significantly reduced the opportunities to study the subject of the environment as a result of eliminating optional courses in environmental science” and that currently “few faculties of education offer environmental education as a teachable subject, or offer specialized programs in environmental studies for teacher candidates,” pointing to a need for the resurgence of such programming (MOE, 2007). Furthermore the document states that “in the absence of specialized teacher training and expertise, there is likely a gap between the environmental education ‘intended’ in Ontario’s curriculum and that which is taught and received in the classroom.” In light of the NDD and ecopsychology studies a strong need for inquiry on this topic of ‘contact with nature’ is suggested, specifically for pre-service and in-service teacher training in Ontario.

In the vision statement provided by the same Ministry document (Ministry of Ontario, 2007), the working group hopes that “environmental education will be reflected in an age-appropriate way throughout the K-12 curriculum through strands, topics, and expectations, and will be recognized as a provincial priority” stating that “The Ministry of Education will drive and support the development of environmental leadership at all levels of the education system.” From a psychological and educational perspective the training of teacher candidates to be comfortable and skillful in delivering curriculum about, for, and in the environment is a highly important initiative.
This study recognizes the gaps between policy and teacher education programming. It will look at the epistemological beliefs of both teacher educators and teacher candidates. This study will also identify barriers as well as facilitators in the integration of nature within the program and will offer some insights into similar efforts in initial teacher education programs across Ontario. This study also recognizes the importance of environmental policies as the face of teachers’ colleges change into a 2-year enhanced program by 2015.

1.2 Purpose of the Study

The purpose of this study is to explore current research and government policies with respect to contact with nature and environmental education, and to interpret the current perspectives of teacher educators and teacher candidates regarding the integration of nature in education in the Master of Teaching (M.T.) program at the Ontario Institute for Studies in Education (OISE). The study will seek to identify any barriers to this integration, as well as gain solutions and examples through both the participants’ suggestions and the research process.

1.3 Research Questions

Two questions will be answered through the study: What are some of the current elements that foster the incorporation of ‘contact with nature’ within the M.T. program from both a teacher educator and teacher candidate perspective? And what are some of the barriers to integrating ‘contact with nature’ in education within the M.T. program?
1.4 Background of the Researcher

My extensive leadership background working in summer and outdoor camp programs has allowed me to witness how nature offered many positive outcomes for children with respect to learning and mental health. After having completed my undergraduate honours degree in Psychology in 2009, I did consulting work in the fields of psychology and education, focusing in particular on the NDD, ecopsychology, environmental psychology, and exercise neuroscience. While doing this consulting work I went back to school and completed an undergraduate honours thesis, which employed interpretive phenomenology to look at the role of nature and physical activity in the lives of youth at a camp for children with exceptionalities both at camp and at home from the perspective of both camp staff and caregivers.

My experiences and my learning within the M.T. program has made me more aware of the policy documents, educational research and the gap that exists with the implementation of ‘contact with nature’ in both teacher education programs and school systems. I am interested in envisioning ways to aide in the integration of nature within education at various levels within teacher education programs and the school systems. My work as a consultant fosters my belief that 21st century thinking involves the integration of nature within education, and my research in this area recognized the need for this work.

1.5 Overview

Chapter 1 includes the introduction and purpose of the study, the research questions, as well as how I came to be involved in this topic and study. Chapter 2
contains a review of the literature involved in the nature deficit disorder, ecopsychology, and environmental education in initial teacher education. Chapter 3 provides the methodology and procedure that will be used in this study including information about the sample participants and data collection instruments. Chapter 4 discusses the findings in terms of 3 themes: personal and professional connection to nature, perception of the importance of nature in education, and integration of nature in syllabi, curricula, lessons, and teaching techniques. Chapter 5 discusses the findings in reference to the two guiding questions and the research literature. References and a list of appendices follow at the end.
Chapter 2: LITERATURE REVIEW

2.1 Evidence for the Disconnection from Nature

In the past century we have seen dramatic changes in youth and adult lifestyles resulting in a general disconnection from nature (Louv, 2005). This disconnection can be seen through decreases in physical activity (U.S. Centres for Disease Control and Prevention, 2002; Nader, Bradley, Houts, McRitchie, & O’Brien, 2008), time spent outdoors (England Marketing, 2009; Pergams & Zaradic, 2006; 2008), and ecological knowledge (Balmford, Clegg, Coulson, & Taylor, 2002; Bebbington, 2005), along with increases in media use (Roberts, Foehr, & Rideout, 2005; Vandewater, Rideout, Waretlla, Huang, Lee, & Shim, 2007), physical ailments (Troiano, Flegal, Kuczmarski, Campbell, & Johnson, 1995; Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006; Lovasi, Quinn, Neckerman, Perzanowski, & Rundle, 2009), psychological diagnoses (Polanczyk, de Lima, Horta, Biederman, & Rohde, 2007; Collins, Westra, Dozois, & Burns, 2004), and prescription medications (Mayes, Bagwell, & Erkulwater, 2008). In 2005, Richard Louv argued that there was a new condition, calling it “nature deficit disorder” (NDD) and he purposefully aligned it with attention-deficit hyperactivity disorder (ADHD) as a strong line of research in ecopsychology points to nature alleviating symptoms of ADHD effectively.

2.2 Supporting Contact with Nature and Physical Activity

2.2.1 Ecopsychological Theories
Wilson’s biophilia hypothesis (1984) suggests that as we have evolved alongside nature we have been genetically programmed to seek out and interact with other life, thus linking us both biologically and culturally to nature. Thus as we detach ourselves from nature we lose the genetically-endowed benefits of interacting with nature, which results in negative health outcomes (Besthorn & Saleebey, 2003). The Biophilia hypothesis has also been useful in describing “Videophilia” (Zaradic & Pergams, 2007), a term that implies that we have become attached to media technology such that it is affecting our species’ evolution.

Stephen and Rachel Kaplan’s (1989) Attention Restoration Theory (ART) states that that nature helps alleviate directed attention, a state that requires mental effort and can be overused resulting in a loss of focus, errors, incivility, and irritability. ART suggests that settings rated high in each of four key characteristics (fascination, being away, extent, and compatibility) will allow for recovery of directed attention, and suggests that many natural settings rate high on all four of these characteristics (Herzog & Strevey, 2008).

2.2.2 Ecopsychological Research

Wells (2000) studied nature in the home environment and its effect on children’s cognitive capacity before and after moving into a new home with a significantly more natural environment. Results found that children who had the highest degree of improvement in natural settings had the highest levels of change in both cognitive functioning and attention capacity after moving to the new home.
Kellert (1998) examined the effects of wilderness-based programming on adolescents’ well-being through both retrospective and longitudinal studies of three national outdoor education organizations. The results showed that individuals currently participating in these programs or who had participated in these programs have reported intellectual and spiritual development. Many adolescents improved in their self-esteem, self-confidence, independence, autonomy, and initiative, the effects of which were shown to persist over time.

Taylor & Kuo (2009) compared the effects of walking in a downtown urban zone, a residential neighbourhood, and a city park on symptoms for 15 youth ages 7 to 12 diagnosed with ADHD. A battery of tests was administered before, during, and after the walk, and a host of factors were controlled for. Results indicated that participants’ focus was better in the park walk as compared with the other two, and that the different in effect sizes was roughly the same as reported clinical effect sizes for two common stimulant medications. This study also built on two previous studies (Taylor, Kuo, & Sullivan, 2001; Kuo & Taylor, 2004) describing the relationship between nature and ADHD, and when combining results from these studies the link between ADHD and nature.

Burdette & Whitaker (2005) reviewed current studies that suggest that unstructured free play in natural areas fosters cognitive, social, and emotional growth in a variety of valuable areas. In addition, research claims that natural play areas in schools and local communities encourage non-competitive play and light-to-moderate physical activity. (Bell & Dyment, 2006)

A study by Bixler, Floyd, & Hammit (2002) examined childhood play in natural environments and its effect on adult environmental preferences in the U.S.
Results showed that those who played in more wild environments engaged in more outdoor recreational activities, were involved in more environment-based occupations, and had more positive views of nature. Studies also confirmed that people who spent time in ‘wild’ nature (e.g. camping, hiking, etc) had better environmental attitudes and behaviours, while those who spent time in ‘domesticated’ nature had better environmental behaviours (Wells & Lekies, 2006).

2.3 The Integration of Nature in Initial Teacher Education

Powers (2004) investigated the perspectives of 18 university faculty from 10 different states in the United States on the inclusion of environmental education in initial teacher education by using audio interviews. The emerging themes identified that “all preservice teachers should be prepared to infuse environmental education into their classroom teaching,” and that common barriers included time, segregation of subjects/disciplines, politics and competition between interest groups, difficulties in placements with associate teachers, and teacher candidates’ hesitations about engaging with science material.

Another study investigated the importance placed on biodiversity and its implementation in education by teacher educators and teacher candidates in 4 European educational institutions (Lindemann-Matthies et al., 2009). Researchers conducted document analyses on syllabi and course curricula looking for modules of potential relevance to biodiversity, as well as interviewing, transcribing, and coding the interviews for 27 teacher educators and 22 student teachers. Results indicated that biodiversity education was limited in all 4 institutions, and that the
The approach to biodiversity was not integrated but taught mostly through curriculum content within science courses. Teacher candidates were not aware of policies to help the integration of nature in initial teacher education, and their self-efficacy in terms of biodiversity education was seen to be an important attribute needed to further the integration of nature in their teachings. Other studies in Ontario initial teacher education programs showed that teacher candidates could have a variety of ecological experiences but the ecological concepts taught were poorly stated, vague, and had little meaning (Puk & Stibbards, 2010). This identifies the lack of ecological literacy in the Ontario curriculum guidelines and in faculties of education. Puk & Stibbards (2010) describe a trend of ‘ecological linguistic reductionism’ such that complex integrated ecological terms lose meanings when reduced to simple words such as ‘environment’ or ‘sustainability.’ This trend culminated in many of the terms described being “opaque empty shells” whereby the terms may be used by teacher candidates but the understanding of them is very limited.

Furthermore, a three-week intervention study designed to increase creativity through arts lessons in a Japanese garden with 114 pre-service teachers in Australia revealed that pre-service teachers did not receive much education involving ‘contact with nature’ (Jones, 2013). Initially the pre-service teachers indicated a lack of experience, skills, and confidence in art but as the study continued, pre-service teachers reported that their ‘contact with nature’ through art improved their well-being, perceived well-being and perceived abilities for problem solving. Many participants reported gains in their personal creativity, as well as becoming immersed in activities and losing sense of time in a deep state.
similar to that described by Csikszentmihalyi’s concept of ‘flow’ (Csikszentmihalyi, 1997; as cited in Jones, 2013). The results from this study indicate a need for education involving ‘contact with nature’ in pre-service teachers’ formal schooling, not only because of the lack of knowledge but also because of the benefits of well-being.

Finally, a report commissioned by the Council of Ministers of Education, Canada (CMEC, 2012) undertook a review of Canadian faculties of education in regards to their integration of education for sustainable development (ESD) in initial teacher education programs. A survey of deans and departmental chairs was conducted of which 36 responses were obtained (55% of all Canadian deans of education) and 14 follow-up interviews were conducted. One of the key findings from the report is that few faculties have incorporated specific courses on ESD in initial teacher education or attempted to integrate ESD across courses. This is a systemic problem within the faculties because there is limited access to research grants for ESD. ESD was seen to be primarily an individual effort as opposed to faculty-wide, and barriers and enablers to ESD were similar to those identified in the UNESCO Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability (UNESCO, 2005). Although there are policies in place to promote ESD, many staff and faculty are unaware of these policies. Key barriers identified included communication issues, competing interests and priorities among faculty, funding, and a need for professional development, while key enablers included the efforts of individual advocates as well as partnerships with other departments on campus and other faculties of education (CMEC, 2012).
This study will use the research and literature in the field of nature in education to examine how the Master of Teaching program (M.T.) integrates ‘contact with nature’ and environmental education, as well as identifying what barriers exist that prevent this integration.
Chapter 3: METHODOLOGY

3.1 Procedure

This exploratory case study takes an epistemological position of social constructivism or interpretivism (Denzin & Lincoln, 2011; as cited in Creswell, 2013) due to the approach to looking at the complexity of perspectives and negotiating their understanding through social and historical contexts. This approach looks at the complexities of education in order to understand and describe teacher educators’ and teacher candidates’ perspectives of the integration of contact with nature and environmental education in teacher education within the M.T. program. The researcher will use written observational reflective memos, transcripts of interviews, and files obtained from participants in order to interpret the perspective of teacher educators and teacher candidates on the integration of nature in the M.T. program.

All participants were given a consent form, asked to read it and sign it to indicate their involvement (see Appendix C & D), at which point interviews were conducted and recorded. Audio interviews were transcribed, and all files were kept on a secure computer. The purpose is to describe the integration of contact with nature and environmental education in M.T. program, as well as identify barriers to such integration within the program.

3.2 Instruments of Data Collection:

Two semi-structured interview protocols (see Appendix A & B) were used for data collection, designed for both groups of teacher educators and teacher
candidates. The interview protocol contained 11 major open-ended questions along with minor questions to be asked if the participant did not refer to the question in their initial response. Questions were designed to allow a substantial degree of flexibility in responding, such as “how do you perceive the importance of the integration of nature in education?” If participants were unable to answer, then more specific questions were asked, such as “how do you perceive the importance of the integration of nature in education across primary, junior, intermediate, and senior grades?” Interviews concluded by asking participants if they had anything else they wanted to share with the researcher. Participants were emailed after transcriptions were complete in order for the researcher to distribute electronic copies of consent forms and to collect any files such as syllabi, lesson plans, or student examples of work.

3.3 Participants

Participants included 4 teacher educators in the M.T. program along with 3 teacher candidates in one of the two first year primary / junior cohorts. Teacher educators were asked by the researcher for involvement in the study, while teacher candidates were visited during a class, given an introduction, and asked for participation. Teacher educators all taught courses in the M.T. program, and were recruited to participate through both the researcher and the research supervisor. Teacher educator participants all had a B.Ed. degree, three had a Masters degree, and two held a PhD, and all indicated having spent some time teaching in primary and secondary classrooms. Teacher educators’ post-secondary teaching experiences ranged from 7 to 12 years, and included a range of
specializations in subjects such as sciences, social sciences, arts, and physical education.

Teacher candidates were all in the same first year primary/junior cohort in the M.T. program, and were recruited to participate by the researcher’s attendance of one class in which he briefly introduced the study and provided contact information for teacher candidates to contribute an interview. Teacher candidates all had an undergraduate degree and one had a college degree, and all had a number of experiences teaching youth in and outside of school both before the program and during practicum. The following two tables give a brief description of all the participants in this study.

Table A: Teacher Educators

<table>
<thead>
<tr>
<th></th>
<th>TE 1</th>
<th>TE 2</th>
<th>TE 3</th>
<th>TE 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary / Secondary Experience</td>
<td>Environmental science many years in high school</td>
<td>7 years social studies high school</td>
<td>???</td>
<td>15 years HPE elementary/secondary</td>
</tr>
<tr>
<td># of years Post-Secondary</td>
<td>9 years @ OISE, seconded since ’98-99</td>
<td>8+ years, 5 @ OISE</td>
<td>12 years @ OISE</td>
<td>9 years @ OISE</td>
</tr>
</tbody>
</table>
Table B: Teacher Candidates

<table>
<thead>
<tr>
<th></th>
<th>TC 1</th>
<th>TC 2</th>
<th>TC 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Background</td>
<td>Undergrad in biology &amp; psychology</td>
<td>Children’s rights &amp; Child development</td>
<td>Guelph &amp; U of T for undergrad</td>
</tr>
<tr>
<td></td>
<td></td>
<td>degrees</td>
<td></td>
</tr>
<tr>
<td>Teaching/instructing experiences</td>
<td>Volunteering as teaching assistant; tutoring</td>
<td>Camps since age 13, currently director</td>
<td>Summer camp staff, director of education</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary/secondary school experience (if any)</td>
<td>Volunteering in high school</td>
<td>Primary / junior classroom for practicum</td>
<td>???</td>
</tr>
</tbody>
</table>

3.4 Data Collection and Analysis

A digital audio recorder was used to tape dialogue between the researcher and the participants. The researcher made notes during the interview as well as after the interview, in order to maximize ideas or options for exploration and description. In an attempt to account for the subjective biases involved on behalf of the researchers’ theoretical and personal experiences and increase the scientific merit of the study, the primary researcher. Interviews were transcribed then analyzed according to themes and coded across transcripts in order to most accurately describe the data. Quotes taken directly from the interviews are used in the analysis in which the letter “I” is used to describe the interviewer and the letter “P” is used to describe the participant. Quotes are taken from teacher educator and teacher candidate interviews, and are referenced in the order in which the interviews took place, for example “(TE4)” refers to the 4th teacher educator interview, and “(TC2)” refers to the 2nd teacher candidate interview.
Themes were created in order to reflect the construction of the interview protocol, the questions of which were linked with current research and modeled after the study by Lindemann et al (2009). Codes arose out of the themes in terms of the organization of participants’ dialogue, and out of a process of going back and forth between themes and codes in order to accurately reflect the data. The following table lists the themes and codes.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Codes</th>
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<tbody>
<tr>
<td>(1) Personal / Professional Connection to Nature</td>
<td>ABN: Academic Background related to Nature</td>
</tr>
<tr>
<td>(2) The Importance of Nature in Education</td>
<td>INE: The Importance of Nature in education</td>
</tr>
<tr>
<td>(3) Integration of Nature in Syllabi, Curricula, Lessons, and Teaching Techniques</td>
<td>ILE: Ideas for Learning about Environmental concepts</td>
</tr>
<tr>
<td></td>
<td>PBN: Professional Background related to Nature</td>
</tr>
<tr>
<td></td>
<td>INP: The Importance of nature in education at the Elementary / primary / junior level</td>
</tr>
<tr>
<td></td>
<td>ILO: Ideas for Learning Outside</td>
</tr>
<tr>
<td></td>
<td>POE: Philosophy Of Education related to nature</td>
</tr>
<tr>
<td></td>
<td>INS: The Importance of nature in education at the Secondary / intermediate / senior level</td>
</tr>
<tr>
<td></td>
<td>TSO: Taking Students Outside during class</td>
</tr>
<tr>
<td></td>
<td>PCN: Personal Connection to Nature</td>
</tr>
<tr>
<td></td>
<td>INT: The Importance of nature in initial Teacher education</td>
</tr>
<tr>
<td></td>
<td>IES: Incorporation of Environmental Education in Syllabi and Course Resources</td>
</tr>
<tr>
<td></td>
<td>ILI: Implied Lack of importance of nature in education</td>
</tr>
<tr>
<td></td>
<td>LIN: Lack of Integration of Nature in teaching</td>
</tr>
</tbody>
</table>

3.5 Ethical Review Procedures

The study was presented to the research supervisor, Dr. Cheryl Madeira, on an ongoing basis in accord with both the student to professional course as well as an instructor-guided timeline. The study has met previous ethical considerations in accord with the M.T. blanket ethics protocol.
Chapter 4: FINDINGS

Results

Transcription of interviews, lesson plans and field notes were coded and grouped into themes. Three themes were identified: 1. Personal or Professional Connection to Nature; 2. Perception of the importance of Nature in Education; 3. Integration of Nature in Syllabus or Curriculum. These themes emerged from coding of interviews in an iterative approach. These themes help to isolate some critical challenges and features for the integration of nature in education.

1. Personal & Professional Connection to Nature

Both teacher educators and pre-service teachers described having a strong degree of personal connection to nature, and all placed value in their time spent in nature. These participants described a connection to nature ranging from those who found it fundamental to their lives to those to described having a weaker but valuable connection. One teacher educator suggested how important nature was to her life by suggesting that “it is very important to me on a personal basis” (TE4). The participants described having varied levels of academic background related to nature ranging from reading research to completing courses and degrees in environmental education. They also discussed their professional background related to nature in terms of past activities or courses they had taught as well as current professional work in academia. Four participants discussed having a philosophy of education related to nature in terms of impressing the importance of environmental education to their students’ learning, such as one teacher educator who described how “I try and um (pause) show people that it’s not tough that it’s
you can it can be done and you don’t have to be teaching science to get outside” (TE1).

1.1 Personal connection to nature

Teacher educators discussed their personal and professional connection to nature in terms of how they felt spending time in contact with nature, how it connected with their professional practice, their families’ connection to nature, and the need for a stronger personal connection. As one teacher educator described, “so much about being active was about being in a gym, now I’d say I love being outside and (just) I want it when I’m active it’s gotta be outside” (TE4). Three teacher educators discussed reasons for why connecting to nature was important to their practice as professional educators, their families, and to themselves as individuals, including environmental awareness, health, and impressing such knowledge upon teacher candidates. As one of these teacher educators described, “both personally and professionally I would say it’s absolutely fundamental to what I do and who I am” (TE3). These three described having a strong personal connection to nature, such as “a natural affinity and need to connect and be out outdoors” (TE1). Although all teachers valued nature, one teacher educator described how he didn’t connect with nature as much as he felt he should. This educator (TE2) commented it is “tenuous at best I, I don’t do it as much as I should” (TE2), although he knew that it was beneficial such that “it resets the way I feel like I know for me it’s a grounding sort of true north thing to do” (TE2).
Teacher candidates talked about their personal connection to nature by talking about the time they spent in nature and the value they placed on their experiences in nature as a child, along with their feelings now that they were in the city as they attended teachers college. As one teacher candidate described, “we had a lot of green space in the backyard and I just got to goof around and play in the mud and get dirty and all the little all the things that little girls stereotypically are not supposed to do, I did them um and I think that has helped me so much as a teacher” (TC2). Two teacher candidates discussed how they didn’t connect to nature as much living in the city, and how being busy in school, and in the city kept them from spending time in nature, such that “it’s not something that I do often just because of, school” (TC1). One teacher candidate described how she felt connecting to nature was important but that she wasn’t compelled to do it such that “I like don’t (pause) actually feel compelled to connect with nature like in a visceral sense or an emotional sense as much as I conceptually think it’s important” (TC3).

1.2 Academic background related to nature

Teacher educators described their academic background and its relation to nature in terms of related programs of study, as well as some of their work within academia. Two teacher educators had a strong academic background related to nature (TE1,3), and one had some academic background related to nature, for example in one teacher educator describing her “research area is uh how environmental and sustainability education can be, better integrated with uh arts education specifically visual arts education” (TE3). While one teacher educator
didn’t have an academic background related to nature, he acknowledged the connection between the integration of nature in education and his background in saying that

“my teaching philosophy is based on a, critical ped approach… I think that’s the natural extension of it I mean as far as dealing with questions that are actually happening in the world I’m starting to understand the world, uh beyond the human condition or starting to understand at least the human condition is inextricably linked to, the world around us” (TE2).

Teacher candidates described some level of academic background related to nature in terms of related studies and informal educational settings. One teacher candidate described having a strong academic background related to the environment through an approach taken on in her child development degree, such that “we’ve done a lot of studies where children in Finland, where they’re actually getting to explore outside um and that’s something that’s incorporated, within my previous degree and the whole Reggio approach to learning and bringing that forward” (TC2).

1.3 Professional background related to nature

Teacher educators described an element of their professional background connected to the study of nature in terms of courses they had taught, some of the academic readings they had discovered, and their professional work in academia. Two teacher educators spoke more of environmental and sustainability education initiatives they took part in within the university (TE1, 3), while the other two teacher educators spoke of classes they had led in high school and post-secondary education (TE2,4). For one teacher educator the environmental and sustainability
initiatives were a core part of her involvement within the university, such that “any opportunity anybody gives me even a toe in the door to go speak about this or, to provide materials or develop co-curricular act- to uh co-develop, curriculum for their courses I uh I never say no” (TE3).

Teacher candidates described having some degree of professional background related to nature seen in field trips, camp experience, and facilitating environmental activities. While one teacher candidate’s experience was through describing nature walks in a volunteer school experience, the other two teacher candidates had spent years in summer camps and facilitating outdoor and environmental programs for youth. One teacher candidate described how her camp experience informed her values such that “I was a, staff member and director of education there for many years so that sort of informed my, everything” (TC3).

1.4 Philosophy of education related to nature

Two teacher educators described having a philosophy of education related to nature in terms of their values and focus, as well as in the efforts they undertook to help teacher candidates feel comfortable and confident in taking their students outside. For one teacher educator her mention of philosophy of education related to nature was in the skills she tried to impress upon teacher candidates such that

“as an instructor at OISE my philosophy is um, about helping folks see um, the need (pause) the need for us to help our students, not teacher candidates but their students uh connect with environment the natural world and think about sustainability so really I guess it’s about integration” (TE1).
For the other teacher educator, her mention of philosophy of education pertained mostly to the big ideas in her courses along with knowledge of contact with nature such that having “an awareness of nature time spent in nature, um uh learning from and through nature all of those things are really um important to me as an educator” (TE3).

Two teacher candidates described a philosophy of education related to the integration of nature in education in terms of promoting environmentally responsible efforts, as well as how these values stood in terms of their priorities. As one teacher candidate described, “like it’s already sort of up there on my list of priorities I haven’t like reflected on it in a while so that’s really good but it’s, it’s already up there” (TC3). One teacher candidate suggested how her “big push is yeah let’s go outside let’s get your hands dirty let’s, do some hands on things, and if it’s best for you to sit outside and write sit outside and write” (TC2).

2. The Importance of Nature in Education

All participants described the integration of nature in education as important, but saw the task of further integration as a continual challenge. Most participants saw the integration of nature in primary education to be easier and more effectively done than in secondary education, though one teacher candidate suggested it was more important at the secondary level due to student lifestyles. Participants discussed challenges in integrating nature in secondary education including the complexity of the task and viable curricular links. All participants suggested that the integration of nature in initial teacher education was important
and in need of further work. As one teacher candidate suggested, “I feel like it’s more important now than ever to teach about nature because, children, are so focused on technology that they don’t go outside anymore” (TC1). Finally, two teacher educators implied a lack of important of nature in education relative to other interests and time constraints.

2.1 The Importance of the Integration of Nature in Education

Teacher educators described the importance of the integration of nature in education in terms of connecting with the world, its place in a changing education system, its connection to getting students moving, and its relation to their curriculum for teacher candidates. Several teacher educators suggested a need for improvement such that “I don’t think we’ve done a good job of it in education in the past and I think we need to do a, whole lot better job on it moving forward” (TE3). One teacher educator described how even though they didn’t integrate nature into their courses they still felt it important such that “with a glaring, glaring next step being that I don’t do it at all I perceive it as being very important” (TE2). When asked how they would feel about teaching about environmental education and organizing outdoor activities on a scale of zero (not important) to three (very important), three teacher educators responded with a three or greater, while the final teacher educator responded with a 2. Some teacher educators suggested that nature was equally important across elementary and secondary education but that it wasn’t done to the same degree across the grades such that “it’s of fundamental importance I think at every single grade level, although I recognize it’s not done well at every single grade level” (TE3). One
Teacher described her impression of how important nature was to local educational initiatives such that “things are happening especially here in Toronto and across the province, you know green school green schoolyards people seeing, you know a learning space outdoors as being important it uh, it’s kinda it feels like there’s momentum” (TE1).

Teacher candidates perceived the integration of nature in education as very important, speaking about it in terms of their students, awareness of local and global environmental issues, children’s lack of environmental concepts, contrasts with classrooms, and its’ necessity in urban centres. As one teacher candidate described,

“I think due to the fact that we even have to talk about nature deficit disorder um it it speaks volumes to the fact that well what are we doing in education like what are we doing with children when they have no clue about nature, right it it’s what they live and breathe it’s how we stay alive is through oxygen um but they have no concept of it because they get, told that they need to stay in a classroom and sit in their desk and do what they’re told” (TC2).

Several teacher candidates mentioned how they understood learning experiences in nature to be different than experiences in the classroom, such that “there are studies out there that will very well tell you, when you give a child some sunlight or let them go outside and it’s a different environment, there’s a different sense of learning” (TC2). When asked how they would feel about teaching about environmental education and organizing outdoor activities on a scale of zero (not important) to three (very important), all teacher candidates answered with a 3.

One teacher candidate described how important it was to connect to nature through understanding food processes and their support systems in society such that
“I think most kids don’t think about, where their food comes from ever so like having, you know like a classroom garden or something like that can be really helpful to that but also understanding that, like, you know like educating about like urban agriculture is really great but also needing to understand, the systems with like that actually support our lives and how we get our food um, because that’s also a very disconnected process I think” (TC3).

2.2 The Importance of the Integration of Nature in Education at the Primary / Junior / Elementary level

Three teacher educators described the integration of nature in education at the primary / junior / elementary level in terms of differences from the intermediate / senior / secondary level. As one teacher educator suggested, “as far as those differences there does seem to be this decline from something that, it seems implicitly that is good for students at a young age like they need this notion the kids need to be outside” (TE2). Two teacher educators suggested that nature was easier to integrate across the earlier grades in that “the curiosity for the little ones for the primary ones just let’s get them outside and, I mean it works so well with inquiry” (TE1). Two teacher educators described how integration in earlier years was critical for fostering an appreciation for nature such that “at the younger age it’s about building and shaping those behaviours and attitudes at a younger age and providing um chang-, uh different initiatives within the schools” (TE4).

Teacher candidates described their perception of the importance of nature in education at the primary / junior / elementary level in terms of differences from the intermediate / senior / secondary level. Two teacher candidates suggested that it the integration of nature was more important during earlier years such that
“ideally, all grades should be able to explore, explore their world around them which includes nature, in a huge huge piece of it um but I think if we start it young enough and the kids have it engrained in them they’ll have enough of a voice to explain the importance of things to their teachers” (TC2).

In contrast however, one teacher candidate suggested that it was more important in the older grades such that “I think it’s more important, at a higher level than it is at a lower just because I think [younger] kids have a natural curiosity with the outdoors” (TC1).

2.3 The Importance of the Integration of Nature in Education at the Intermediate / Senior / Secondary level

Teacher educators described the integration of nature in education at the intermediate / senior / secondary level in terms of differences from the primary / junior / elementary level, as well as in terms of how they believed it to appear in later school years. Two teacher educators described how nature in secondary education was more sporadic, less visible, and harder to achieve such that “I’m realistic in knowing that I think a better job gets done of it in the early years uh sort of kindergarten through grade six than it does in the later years, uh sort of grade seven through twelve” (TE3). One teacher educator described how well the integration of nature in education connected with the secondary health and physical education curriculum such that

“I think the neat thing with um health and phys ed I see a true connection there at the secondary level, um one of our big emphasis is living skills, um personal interpersonal and critical creative thinking and I so I think about, just that self awareness and self monitoring, uh there’s a great way that we could use um introduce these, opportunities to be more engaged with nature and outdoor, to help enhance those living skills I think” (TE4).
Another teacher educator described how the optional nature of physical education in high school limited contact with nature for many students such that “you don’t have to do phys ed after grade 10 if you don’t want to, or after grade 9 sometimes um, so if that’s the case I mean that which if that’s one of the few opportunities to get outside” (TE2). One teacher educator described the complexity and importance of integrating nature in secondary education and her belief that it needs to be seen as important to be done such that “it would be really, it would be nice to see this happening more at the secondary level as well but um, that’s probably a whole other interview conversation I mean it just comes back to seeing it as being important and if you think it’s important then you’ll do it” (TE1).

One teacher candidate described how she felt that integrating nature in education was more important at the secondary level than at the primary level, such that “I think it’s more important, at a higher level than it is at a lower” (TC1). She went on to describe how priorities and physical environments for learning change as students get older in that “as you get older and your priority changes and you’re so focused on school and your stuck at the library you’re stuck at home stuck in the classroom, um that it’s more important to (pause) kind of I guess remind them that there’s more to, I guess the world than just a concrete building I guess” (TC1).

2.4 The Importance of Nature in Education at the Initial Teacher Education level

Teacher educators discussed the importance of nature in education at the initial teacher education level in terms of current efforts and the need to improve.
While three teacher educators were either informed or involved with current practices within the university, one suggested that efforts were in need of improvement in the following response:

“I: how do you perceive the importance of the integration of nature in education at the initial teacher education level?  
P: (pause) I don’t know, because I don’t I don’t feel like I have a sense of the problem other than the fact that we’re not doing it we need to be doing it and we need to be doing it for a bunch of reasons, it’s not happening, in in my experience” (TE2).

Although there was an identified need for further integration of nature at the initial teacher education level, several teacher educators discussed current efforts within the university in terms of specific initiatives and their efficacy such that “it’s working I think because even people outside of OISE now are becoming very familiar with the very active agenda we have, in environmental ed um both in terms of the co-curricular piece but also in terms of uh service learning piece” (TE3). One teacher educator described how the ‘learner document’ describing the attributes educators should instill in teacher candidates helped to facilitate environmental educational lessons. See Figure A for the learner document with sections highlighted related to learning of nature and environmental education.

Along with suggestions for the need to improve environmental education, two teacher educators stated that “it needs to be a an identified priority, uh at the board level” (TE1). One teacher educator commented that he felt environmental education as optional:

“there’s sort of um (pause) um-embodied or unconnected talk at at a policy level or an institution-wide level, where there’s an emphasis on you know environmental sustainability or you’re you’re encouraged to have a green course, you’re encouraged to make sure you be as paperless as possible um which is something I do but, I the again these are all optional they’re not central” (TE2).
This same teacher educator went on to suggest that the integration of nature in education was something he could ignore if he wanted such that

“if it’s central ‘cause there’s certain things I, I can get away with not knowing and there’s certain things I can’t get away with not knowing, um so, not to say it’s not my responsibility but just to say that I wouldn’t able to get through it in my job if I ignored certain things and that’s one I can totally ignore” (TE2).

Another teacher educator described how her colleagues weren’t comfortable taking students outside such that

“it’s all about comfort level, do they feel comfortable taking, their students outside and I think just like many classroom teachers many of my colleagues, don’t feel comfortable taking people outside they don’t quite know what to do, I don’t think” (TE3).

Teacher candidates discussed the importance of nature in education at the initial teacher education level in terms how they perceived it to be reflect in the
program, the awareness of colleagues of environmental education, and how the teacher education impacted teacher candidates’ pedagogy. As one teacher candidate described, “I think it’s so important um… it’s an acknowledgement that, nature is important um, for everyone to learn so yeah I do think it should be integrated, into the M.T. program” (TC1). Two teacher candidates described that nature was not integrated effectively into the problem such that “it comes across as though it’s not important because the stuff that we are learning, we don’t talk about it, no one brings it up when it does get brought up it’s only brought up by specific teachers” (TC2). These two teacher candidates also described how they felt that a course in environmental education, integration throughout the degree, and related assignments in other courses would be effective ways to promote the integration of nature in initial teacher education. As one of these teacher candidates comments “should there be a specific like, course or um, unit on that or should it just be integrated throughout and I sorta feel like actually both would be really good” (TC3). One teacher candidate felt that many of her colleagues had little knowledge or connection to nature, and that this should be a primary concern to the program to bring experts in such that “if there’s a concern, about you know the fact that nature deficit disorder is on the rise that kids have no concept of anything of about nature anymore, why aren’t we learning about it as teachers, right the ones who are gonna be spending six to seven hours a day with these kids we have, all of this material that we’re learning about, but there are holes in our learning, because things get left out so instead of cancelling a class or instead of, doing a three hour reflection, why not have someone come speak to us especially after my entire class yesterday half of them had no clue what environmental education was” (TC2).
This teacher candidate implied a lack of priority for environmental education which frustrated her such that “it doesn’t come across as much of a priority ‘cause we’ve finished half of our first year and people still have no clue what it is until yesterday… just a little frustrating” (TC2).

2.5 Implied Lack of Importance of Nature in Education

Two teacher educators implied a lack of importance of nature in education in terms of the responsibilities of their courses, the need for a more explicit emphasis in curriculum, related constraints including time, and the ties to their academic interests. One teacher educator stated that instruction wasn’t as possible outside, “so often we’re talking about what today we were doing some microteaching and it was um, we were doing lacrosse… ultimately we’d be playing this outside, but sometimes for the purpose of the instructional piece I need to stay into the gym” (TE4). She comments that in teacher education, “I think still we need to make it (nature) more explicit” (TE4). Another teacher educator removed an environmental education component from his assignments because of lack of time and priority, even though he saw the link to his subject area. He responds,

“even though I talk about all these issues around social justice there’s like this missing piece, um this eco-pedagogy piece which is always the uh, the last three courses I’ve planned I’ve had an eco-pedagogy in the original draft of the syllabus and it’s actually I’ve removed it, due to time” (TE2).

This teacher educator also recognized that “as far as, uh social justice issues I I haven’t yet I guess in my own thinking put the environment up there with questions of race class or gender or ability or sexuality or language” (TE2).
3. Integration of Nature in Syllabi, Curricula, Lessons, and Teaching Techniques

All participants discussed felt the need for nature to be integrated in M.T. curricula and courses, however although many expressed ideas few offered examples of the integration of nature in the M.T. program. Several participants mentioned past activities that had integrated nature effectively, while others mentioned potential ideas. Several participants mentioned taking their students outside during classes either in primary education or post-secondary education. Two teacher educators effectively incorporated nature in their syllabus and provided environmental educational resources to their students. Finally, two teacher educators thought that nature was not part of their responsibilities and priorities in their courses.

3.1 Ideas for Learning about Environmental Concepts

Teacher educators had a variety of understandings about learning about the environmental concepts for their curriculum, related issues, lesson ideas and lessons within the M.T. program. One teacher educator described a related literacy-based activity such as “in my second class, um we do storytelling, storytelling uh I I roll in (laughs) I roll in some aboriginal perspectives so I tell uh stories from uh there’s there’s one um, I think it’s Ojibway Anishnaabe about why leaves change colour in the fall” (TE1). Two teacher educators had a number of lessons and activities that addressed nature. As one teacher educator described, “I
weave nature-based learning into my uh art ed courses very clearly” (TE3; See Figure B for example of lesson from TE3).

Figure B: TE3 Lesson Plan

<table>
<thead>
<tr>
<th>Part 2: Action</th>
<th>Part 3: Body of the Lesson ([55 minutes])</th>
</tr>
</thead>
<tbody>
<tr>
<td>- provide a definition of ‘place’ and place-based education (both on handout)</td>
<td>- provide info about the Mol’s policy on Environmental Ed ‘Acting Today, Shaping Tomorrow’</td>
</tr>
<tr>
<td>- emphasize the importance of of environmental literacy; note the role of place being central to this type of learning</td>
<td>- what environmental challenges affect your favourite place? Make a list on the map</td>
</tr>
<tr>
<td>- working in groups of 3-4, analyze Peter Menzel’s photos for evidence of challenges for families in different places around the world</td>
<td>- what environmental challenges do all places face?</td>
</tr>
<tr>
<td>- compare these challenges to those of your favourite place: how do the challenges of your favourite place faces relate to those of the families in Menzel’s photos?</td>
<td>- what common environmental challenges do all places face?</td>
</tr>
<tr>
<td>How can we define this concept of place? Why is the concept of place important in contemporary education?</td>
<td>Reproduction of Peter Menzel’s photographs</td>
</tr>
</tbody>
</table>

Though one teacher educator didn’t employ ideas for learning about environmental concepts in her courses currently she mentioned many examples of ideas that would fit well with her focus area such as

“in my intermediate specialist course I do have it’s called a healthy school initiative assignment, where we are and we talk about the foundations of a healthy school, um being four pillars quality instructional program the physical environment so what can we do with our space, so is it creating um uh you know making gardens in our school creating changing the outdoor recess play space” (TE4).

Another teacher educator described how discussion about access to nature could be incorporated into his course through study of race in that “thinking about, uh race which is one of the themes of the course thinking about ability uh we know that it particularly in urban spaces access to, access to to nature so-called nature be it um, out of the city or in the city can be racialized” (TE2).
Teacher candidates learned some environmental concepts in their program courses, and could use these teacher strategies in combination with their ideas for their own students. One teacher candidate described several of her science lessons involving environmental content, but suggested that she hadn’t received the message to teach about nature such that

“in our science class… there were some lesson plans that had to do with the food chain and, what else did we do, um or the life cycle of a plant, but other than that I don’t really think, I’ve been explicitly taught about nature (pause) to teach about nature” (TC1).

Two teacher candidates mentioned ideas to incorporate environmental education into teaching in classes such as “bringing in an article from the newspaper like and being like yeah what is this line nine thing like why are people protesting it who’s involved” (TC3). One teacher candidate offered ideas to build an understanding of environmental concepts by “starting from what the kids (pause) um, like what the kids perceive their relationship with nature to be, or what they think they know about nature like starting there and sort of, working out might be good” (TC3). One teacher candidate described learning about environmental education in an informal class discussion and relating it to the science curriculum such that “[our professor] then came forward and did a whole discussion on environmental ed and what it is and how some of us have had experience of it and what experiences have we had… spoke to us about, you know using the environment in curriculum because it’s part of our it’s part of the science curriculum” (TC2).
3.2 Ideas for Learning Outside

Three teacher educators had definite ideas about learning in the outside environment. While the fourth teacher educator didn’t talk about ideas for learning outside she employed many ideas in her classes, several of which the researcher took part in as a student. Another teacher educator described the many ways in which she gets students outside such as during her first lesson by saying that

“we do the first day um with the options, um and that’s um, the outdoor classroom so what we do, is um, in groups of six, I give them uh each a different theme… so the task is, if you have, sounds outdoor sounds… listen to natural sounds or human-made sounds and they do a um, a graphic or a soundscape or or some kind of recording… another theme is um, shapes and um, so they you know look for shapes out there another one is um, collection of, natural things and then we come back into the classroom”

(TE1; See Figure C for an example of student work in TE1’s class)

Figure C: Teacher candidate work from TE1’s class
Two teacher educators had a community-based assignment for learning outside, “there’s very little access to safe, clean, access yeah er outside space at the community we’re studying as you know, um so one of the original thoughts to to in creating the assignment was to do an actual evaluation of what that what the possibilities were for students to have my students, do an evaluation of that kind of access for the students” (TE2). One teacher educator stated how “what I’d like to do now though is maybe build in more opportunities where perhaps in a in a course we’d actually do something outside and active” (TE4).

Teacher candidates had ideas for teaching strategies and previous activities that could incorporate outdoor lessons into M.T. initial teacher education. One teacher candidate described her ideas for using hands-on nature walks when teaching prompted by:

“I: what special techniques do you think you could employ when teaching, that allow for the increase of nature in your teaching… P: I would do like the hands on, the nature walks field trips um (pause) I think field trips for me was a really big experience” (TC1).

Another teacher candidate had allowed students to choose between being outside or inside:

“If a child’s in a classroom and they’re struggling, and it works better for them to be outside… our window was their backyard their back playground, so what we would do I would stay inside my AT would go outside and we’d switch half of our kids did much better sitting outside with natural light on them than these lovely fluorescent lights that give us headaches half the day” (TC2).

This teacher candidate felt for her own learning in M.T. courses such that "talking about all of these, TRIBE activities where you’re standing in a collective circle
and you’re working together, well instead of standing in a classroom you have a huge field outside” (TC2).

### 3.3 Taking Students Outside during Class

Two teacher educators modeled appropriate environmental education by taking their class outside during their initial teacher education courses in terms of specific lessons, the groups of students they taught. As one teacher educator suggested, “I’m trying to model that on a regular basis” (TE3). These two teacher educators took many different groups of initial teacher education cohorts on outdoor field trips such as “the field trip to high park, um and that’s what I do with the um with the intermediate science folks we go to high park” (TC1). One teacher educator commented, “I lead um trips outdoor ed trips in the city environment for my students um mainly in the B.Ed. program I haven’t been able to do that in the M.T. program” (TE3).

One teacher candidate took her students outside during her first practicum and commented that the students were able to use sensory experiences outdoors alongside writing tasks to give her a better understanding about student learning. She described her belief in the importance of students’ learning outside and how it influenced her teaching such that “my past practicum that’s exactly what we did we spent half of our day outside, um and the learning that took place there I said to the teacher it’s just as important as the learning that takes place inside it’s just a different environment that they’re in” (TC2).
3.4 Incorporation of Environmental Education in Syllabi and Course Resources

Two teacher educators incorporated environmental education into their syllabi and course resources demonstrating strong connections to nature. One teacher educator described the critical questions integrated with nature that guided her syllabi as

“one is how can we promote inquiry, in a class of diverse learners, and so the inquiry gets at you know generating questions however so that can be outdoors, and then diverse learners gets at the equity piece, uh environmental justice social justice piece… the other one’s very similar it’s how can we promote sustainability in a class of diverse learners so the sustainability is you know you need to connect with the natural world in order to value, the ecoservices that we get from the natural world” (TE1).

Another teacher educator described making the sustainability element in her syllabus explicit such that “one of the very first things I did was point out the sustainable measures I’m trying to model for people so I’m trying to make it as explicit as possible right” (TE3). She was a strong advocate for integrating nature in education, but that there was room for improvement in terms of integrating environmental education in her syllabus. She states “I have a relatively strong presence but is that presence still modeled on my syllabus, great question, uh probably not as strongly as it could be frankly” (TE3). She felt that the resources she includes in her courses reflected her efforts to integrate nature in initial teacher education more strongly than the syllabi such as by describing how “you’ll see it more clearly rather than in the syllabi to all the handout materials I give ‘cause to all of my students… get an entire package on environmental and sustainability education” (TE3).
3.5 Lack of Importance of the Integration of Nature in Education

Two teacher educators felt that there was a lack of importance of the integration of nature in teaching in terms of weighting of responsibilities, emphasis in courses, and perceptions of the lack of integration of nature in their teachings. One teacher educator suggested that he didn’t integrate nature in his teachings due to time constraints such that “I mean I can’t say that it’s because of anyone else that I don’t do it it’s a time thing” (TE2). One teacher educator suggested that she was not explicitly mentioning environmental education in her syllabi and that there was a gap to be filled such that “am I making it explicit um, in my course syllabus around, what strategies am I using to model and integrate environmental education into my teaching I don’t know if I’m really making it explicit in my course syllabus, so I think there’s a gap” (TE4). One teacher educator suggested that although he had fairly paperless courses he wasn’t doing much else to integrate nature such that “the only thing I’ve done I’ve I have fairly paperless courses for a long time I’ve had all my readings online but I haven’t done anything else at all in any of my classes” (TE2).

Teacher candidates emphasized the lack of importance in the integration of nature in education within the program resulted in an inability to integrated with nature in the program, a lack of acknowledgement of teacher candidates’ efforts to integrate nature in assignments, a lack of awareness of environmental education, and a lack of resources,. All three teacher candidates had difficulty when asked to provide examples of lessons they had experienced in the program that allowed for the integration of nature in education, for example in one teacher candidate’s reply:
“can you describe a lesson or activity that you feel, that allowed for the integration of nature in education in your learning in the program?
P: So from my practicum experience?
I: Uh more from the course based
P: Oh
I: The the teacher modeling, down right, uh
P: That has to do with nature
I: Yeah
P: (pause) I don’t know if I can answer that… Can you repeat the question one more time actually
I: Sure um can you describe a lesson or activity that you feel that allowed for the integration of nature in education in your learning, in the program, or in the course program
P: No I can’t” (TC1).

One teacher candidate described her professors’ reaction to planning a lesson integrating nature and physical activity such that

“one of my lessons was the walk to town hall to talk about community rules and on that walk we’re gonna discuss all the things that we see throughout nature and all the things that are in our community while are kids are getting a bit of DPA in, what a concept, that you take your kids outside instead of throw them on a five minute schoolbus ride
I: Hmm interesting yeah, um
P: My prof thought I was crazy that I planned that as a lesson” (TC2).

This teacher candidate felt that her colleagues may not have an understanding of environmental education such that

“on that sheet, was environmental education, upon a list of fifty million other things so we were rating it from one to ten what was important to us and when a lot of students got to environmental education they had no concept as to what it was, so they posed the question to [the professor], what is this” (TC2).

One teacher candidate felt that there were not enough resources or expert help to integrate nature into her teaching. She states, “in terms of textbooks or books or, anything like that I, I don’t have any at the moment, or wouldn’t know where to go” (TC1). Another teacher candidate described her lack of awareness of current
issues and initiatives in environmental education by saying that “I know that there are some schools that have like, school gardens and like um, like green teams or like environment clubs and things like that but I’m I guess I don’t really feel like I have an awareness of um, what’s going on” (TC3).

These findings represent a consolidation of the understanding of the problem in terms of three themes, in order to give a broad understanding about contact with nature and how it is understood in education. The analysis of three themes supports a good foundation to answer our research questions: personal / professional connection to nature, importance of nature in education, and integration of nature in syllabi, curricula, lessons, and teaching strategies. The following sections will integrate these themes within the context of the research questions: what are the elements that foster the integration of nature in the M.T. program, and what are the barriers?
Chapter 5: DISCUSSION

The purpose of this study is to explore current research and government policies with respect to contact with nature and environmental education, and to understand current teacher educators and teacher candidates views regarding the integration of nature in education in the M.T. program. The research questions were 1) What are the current elements that foster the integration of nature in M.T. initial teacher education?, and 2) What are the barriers to integrating nature in M.T. initial teacher education? The three themes that emerged from an analysis of the interviews were: “Personal and Professional Connection to Nature,” “Perception of the Importance of Nature in Education,” and “Integration of Nature in Syllabi, Curricula, Lessons, and Teaching Techniques.” The following section will explore these themes in relationship to the research questions.

5.1 What are the current elements that foster the integration of nature in M.T. initial teacher education?

5.1.1 Teacher educators’ perspectives on the integration of nature in M.T. initial teacher education

Most teachers had a strong personal connection to nature and had some professional background related to environmental education. These teachers valued nature, as seen not only in their personal activities such as the outdoor activities they participated in and professional organizations they belonged to, but also in their professional practice. If a teacher educator valued their connection to nature less and had no direct educational background in environmental education,
it was seen that there wasn’t a strong connection to professional practice. This finding suggests that personal perspective and background related to nature has an importance in the integration of nature in M.T. programming.

Several interviews suggested that there are teacher educators that are currently enabling the integration of nature in the M.T. program, similar to those in other initial teacher education programs across Canada as identified by the report for the Council of Ministers of Education, Canada (CMEC, 2012). In addition, there has been an increased focus on establishing a place within the university for such advocates which will enable the integration of nature M.T. initial teacher education. However it was also noted that many teacher educators were not comfortable integrating nature or were unaware as many don’t have a background related to nature.

Teacher educators discussed the importance of nature in education in varying degrees ranging from important to “absolutely critical” (TE1) and fundamental to education. This finding is in line with research by Powers (2004) who found that all 18 professors in universities faculties in the United States surveyed agreed or strongly agreed that “all preservice teachers should be prepared to infuse environmental education into their classroom teaching” (Powers, 2004). However, professional development opportunities are limited and it is clear that although teacher educators value the connection to nature in primary and secondary students education, these values may not be present on their syllabi, in course resources, or through their pedagogy.

Teacher educators described a range of activities integrating nature in their courses. Some teachers educators practiced the integration of nature within their
course work, but in general their responses suggested a lack of current efforts and priority, having no clear policy at a university level to directly mandate the integration of nature within their respective curricula. One teacher mentioned that the 'learner document’ provided to teacher educators contained a valuable framework for integrating environmental education in courses, and another mentioned that there was significant progress made in the B.Ed. programs but that there was still room for improvement in the M.T. program regarding the integration of nature in education. These results are in accord with the report by the Council of Ministers of Education, Canada (CMEC, 2012) that suggest that although there are examples of successful endeavours to integrate nature in initial teacher education across faculties of education in Canada, most faculties had a limited integration of nature in their program and many staff were largely unaware of any policies in place to support such learning.

5.1.2 Teacher candidates' perspectives on the integration of nature in M.T. initial teacher education

Teacher candidates valued their connection to nature, and two of these candidates were keenly aware of their disconnection from nature experienced in the M.T. program due to previous environmental educational knowledge. These teacher candidates are aware of trends to integrate nature in education, suggesting that experts who integrate nature in education (ie. TE1,3) would be valuable mentors. These teacher candidates may have an existing knowledge base which the M.T. program could build upon to help integrate nature in education.
Teacher candidates believed that there was a lack of importance given to integrating nature in education within the M.T. program. There was a realization from teacher candidates that the integration of nature occurred more during elementary schooling than secondary, and that this was seen within the M.T. elementary and secondary programming also. This is an interesting finding, because teacher candidates believed that there is a greater need for the integration of nature in the early years in order to build foundational knowledge and employ students’ natural tendencies to play outdoors. They further recognized that because secondary students do not have lifestyles that incorporate outdoor activities, it was more important for secondary educational systems to build outdoor education into their programs. These findings are supported with research literature that suggests that the early years (specifically between grades 1 and 5) are the most impressionable for students and thus that the integration of nature in their teachings can have a much more dramatic effect (for an overview see Chawla, 1998; as cited in Lindemann-Matthies et al, 2009).

Teacher candidates had a range of effective ideas for integrating nature into their own practice as well as for that of the practice of teacher educators. Though teacher candidates were able to reflect on course work that incorporated nature it was generally believed that the efforts to integrate nature into their courses was minimal. This finding is also in line with research by Puk & Stibbards (2010) who found that efforts to increase biodiversity education at a B.Ed. program in Ontario were minimal due to a lack of understanding of concepts and definitions of terms related to environmental education.
5.2 What are the barriers to integrating nature in M.T. initial teacher education?

5.2.1 Teacher educators’ perspectives on the barriers to integrating nature in M.T. initial teacher education

Teacher educators all felt that there were several barriers that prevented them from integrating nature into M.T. program such as curriculum demands and lack of policy. These findings are in line with the CMEC report (2012) that identified time constraints and a lack of experience for teacher educators in integrating nature in education as key barriers across Canadian faculties of education. Research by Powers (2004) also found that competing interests and other priorities were identified real barriers in integrating nature in initial teacher education in U.S. faculties of education.

Though the Ministry explicitly states that “The Ministry of Education will drive and support the development of environmental leadership at all levels of the education system,” an analysis of the later document Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools (MOE, 2009) shows that although the Ministry outlines its own responsibilities to integrate environmental education along with those of schools and school boards, there is no responsibility mentioned to drive environmental education within faculties of education in Ontario. This study does recognize that shifting importance to integrating nature within educational programs is highly complex and involves a multilevel approach.
5.2.2 Teacher candidates’ perspectives on the barriers to integrating nature in M.T. initial teacher education

Teacher candidates discussed their experiences of nature in lessons in the M.T. program in terms of the focus of several science lessons and in terms of an informal discussion in which environmental education was mentioned as a part of the science curriculum. This finding is in line with Lindemann-Matthies et al. (2009) who found that of the limited units in which biodiversity education was integrated in 4 European faculties of education, most of the teacher candidates’ learning about biodiversity came through science courses. This is inherently problematic, as the hopes of the vision statement of the Ontario Ministry of Education document (MOE, 2007) are that “environmental education will be reflected in an age-appropriate way throughout the K-12 curriculum through strands, topics, and expectations, and will be recognized as a provincial priority.”

Puk & Stibbards (2010) suggest that due to the Ontario curriculum having no distinct courses in ecological literacy and having limited space in science and geography for its integration it is highly important to integrate ecological literacy as a meta-discipline such that

“Ecological Education should be developed as a meta-perspective, composed of an enriched subject matter including sciences (geography, biology, physics, chemistry), history, arts, mathematics, language, economics, health, philosophy, aesthetics, and ethics” (Puk, 2009; as cited in Puk & Stibbards 2010).

The current study included teacher educators from the arts, social studies, physical education, and the science, who were all able to conceive of curricular links and saw the value in such learning. An effective step forward then would be to integrate nature in initial teacher education across the program and as one
teacher educator suggested, “it needs to be a an identified priority, uh at the board level” (TE1).

All three teacher candidates expressed interest in having more emphasis on the integration of nature within the M.T. program. This is disheartening as there are many educational initiatives involving nature locally, nationally, and globally which are not effectively presented as important aspects of learning to be a teacher. Furthermore, the effectiveness of initial teacher education in impressing values upon teacher candidates cannot be understated, for it is during this program of study that teacher candidates develop a philosophy of education and the foundation for their professional teaching careers. Initial teacher education is especially impressionable as “the power of the preservice curriculum is its multiplier effect. Where one teacher has the potential to impact the number of students taught throughout a career, a methods course has the potential to impact many future teachers and, ultimately, a far greater number of students” (Powers, 2004).

5.3 Limitations

There are several limitations to the study. Firstly, while the strength of qualitative research lies in attempting to be participant-driven rather than researcher-driven, there were only 7 participants, making the ability to generalize findings from the study to other populations difficult. Secondly, while the participants’ confidentiality is maintained, their responses may still have been limited in their critical nature due to the participants’ ongoing employment or enrollment in the program. Thirdly, while the teacher candidates will each have a
representative perspective of that of their primary/junior cohort, their perspectives will not necessarily reflect those of all primary/junior cohorts as their experiences in the classroom may be different. Finally, the study acknowledges the impossibility of objectivity and thus attempts to divulge personal and theoretical involvement of the researcher, but in accord with this understanding the interpretation remains biased and subjective. While the researcher has attempted to remove and unpack his subjective biases there will always remain some subjective involvement on the part of the researcher in the study.

5.4 Conclusions

This study lends to existing research on the integration of nature in initial teacher education programs, suggesting that though there are currently efforts underway there is still a vital need for improvement to teach about environmental education and contact with nature in initial teacher education programs such as the M.T. program.
REFERENCES


http://www.cmec.ca/Publications/Lists/Publications/Attachments/279/ESD_Dean_reportEN.pdf


APPENDICES

Appendix A: Teacher Educator Interview Protocol

1. Name:
2. What is your educational background?
3. What is your area of instruction? (i.e., biology, chemistry) How long have you been a pre-service instructor?
4. What is your area of research interest or philosophy of education?

This study looks at the integration of nature as a critical element in pre-service or initial teacher education. Louv (2005) suggests the term ‘nature deficit disorder’ in order to describe the increasing trend of disconnection from contact with nature and time spent in the natural environment, seen most alarmingly through modern youth, and having disastrous consequences for individual, community, and global health. We are interested in your understanding of the importance of connecting with nature in your personal and professional life, as well as your understanding of the integration of nature in education from a professional standpoint in initial teacher education.

1. Is connecting with nature important to you and if so, how would you describe your connection to nature (both in personal and professional practice)?

2. How do you perceive the importance of the integration of nature in education?
   a. How do you perceive the importance of the integration of nature in education across primary, junior, intermediate, and senior grades?
   b. How do you perceive the importance of the integration of nature in education at the initial teacher education level?
3. Could you describe your role as a teacher educator in the M.T. or B.Ed. program, as well as what you feel are the most critical elements for teacher education?

4. Could I have a copy of your syllabus for the purposes of data collection? How have you incorporated your philosophy of education within your syllabus?

5. Can you describe a lesson/unit that you feel allows for the integration of nature in education in your teaching? (Can I have a copy of your lesson/unit plan? Would you be willing to provide me with a student exemplar of work if possible?)
   a. How do you perceive the relevance of your curriculum and teaching to the aims of increasing the integration of nature in education?

6. Could you please provide some examples of the teachings, resources and/or support materials that you use which would aid you in the integration of nature in education?
   a. What special techniques do you employ when teaching in the M.T. program that allow for the integration of nature in your teachings? (e.g., modeling, videos, guest speakers).

7. What mentor, expert colleague, or organization could you use as a resource to allow for an increase in the integration of nature in your teachings?
   a. Why do you think that this person or organization is a valuable resource?
8. Could you please describe how you would feel about teaching about environmental education and organizing outdoor activities? (Rating Scale from 0-3; 
0 – not important; 1. Somewhat important 2. Important 3. Very important.

0 1 2 3
Appendix B: Teacher Candidate Interview Protocol

1. Name:
2. What is your educational background?
3. What is your area of teaching? (i.e., primary, junior, etc. and biology, chemistry)
4. What educational related experiences have you had prior to coming into education?
5. What is your area of research interest or philosophy of education?

This study looks at the integration of nature as a critical element in pre-service or initial teacher education. Louv (2005) suggests the term ‘nature deficit disorder’ in order to describe the increasing trend of disconnection from contact with nature and time spent in the natural environment, seen most alarmingly through modern youth, and having disastrous consequences for individual, community, and global health. We are interested in your understanding of the importance of nature in your personal life, as well as your understanding of the integration of nature in education from a professional standpoint in an initial teacher education program.

1. Is connecting to nature important to you and if so, how would you describe your connection to nature (both in personal and professional practice)?

2. How do you perceive the importance of the integration of nature in education?
   a. How do you perceive the importance of the integration of nature in education across primary, junior, intermediate, and senior grades?
   b. How do you perceive the importance of the integration of nature in education at the initial teacher education level?
3. Could you describe your experiences in the M.T. program, as well as what you feel are the most critical elements in this teacher educational program?

4. Can you describe a lesson or activity that you feel that allowed for the integration of nature in education in your learning? (Can I have a copy of it? And a student exemplar if possible?)

5. Please provide some examples of the teachings, resources, or support materials that you could use which would aid you in increasing the integration of nature in education?
   a. What special techniques do you think you could employ when teaching that allow for the increase of the integration of nature in your teachings? (e.g., modeling, videos, guest speakers).

6. What mentor, expert colleague, or organization could you use as a resource to allow for the integration of nature in your teachings?
   a. Why do you think that this person or organization is a valuable resource?

7. Could you please describe how you would feel about teaching about environmental education and organizing outdoor activities? (Rating Scale from 0-5; 0 – not important; 1. Somewhat important 2. Important 3. Very important.)

8. How do you feel about the inclusion of specific lessons and curriculum in the M.T. program to reflect the integration of nature in education?
Appendix C: Teacher Educator Consent Form

Student and Faculty Perspectives on the Integration of Nature in M.T. Teacher Education

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Contact online by simple form:
http://www.research.utoronto.ca/contact-us/contact-form/

Information and Consent Form

The purpose of this study is to investigate the perspectives of teacher educators and teacher candidates regarding the integration of nature in education. We are interested in your experiences related to the M.T. program and other teacher education programs, and will be looking primarily at your understanding of the integration of nature in education in your teaching, curriculum, and pedagogy. We want to know about any experiences educating in initial teacher education, as well as both complimentary and critical opinions you may have about your experiences in teacher education. By participating in this study, you will help us to gain a better understanding of the current state of integration of nature in teacher education in the M.T. program in the hopes identifying factors that influence the integration of nature in teacher education so that this problem can be better understood within social scientific research literature.

We would like to conduct an interview with you that will last approximately 30 minutes but may go longer depending on your answers. The interview will consist of a series of open-ended questions in which you are invited to respond to freely based upon what you think is important according to broad
research questions. The interview will be recorded by digital voice recorder and the researcher will write notes during the process to improve analysis.

In almost all cases, your engagement in this research study will bring you no risks beyond anything that you would find in daily life. The researcher will strive to create an ideal opportunity for the interview in a safe and comfortable place where you will be able to relate your experience without fear of danger or bias.

Your engagement with this research study is voluntary. You may decide not to respond to any questions being asked, and you have the full capability to end the interview when you so choose. If you decide to decline your permission during the interview, any data collected including the audio recording and all written notes will be not be used in the research study and will be destroyed immediately.

You may withdraw your participation and all data pertaining to your interview at any point before the study is completed in April 2014. Any information that you give us during the interview will be kept strictly confidential. Audio files and written transcripts will remain on a secure computer. Data files will be encrypted so that only the researcher and his supervisor will be able to access them. Written copies of transcripts and notes will be kept in a secure location where only the researchers involved may have access. Only those working on this project will have access to your data. All of your data will be destroyed five years after the analysis of the research study is finished.

Audio recordings will be taped with the express permission of the participant.

All of your information will remain anonymous. Audio recordings and transcripts of the interviews will be coded in order to keep your anonymity. Only the researchers involved in this research study will listen to the audio files to be able to transcribe and analyse your experiences.

The audio files will not be played for anybody except the researchers directly involved. No identifying information besides the coded number will remain on the audio file.

Your information will be used only for the understanding of aspects of your experience related to the M.T. program and other teacher education programs, and will be used solely for analysis in this research study after it has been coded and personal identification has been removed.

We may use the information you provide to write a scholarly article about the research conducted in the present study, and we ask that you allow us to use non-identifying quotes from the transcript of your interview if they contribute to the writing process.

The researchers acknowledge that they have no commercial interest in this study.
The present study has been approved by the Office of Research Ethics at the University of Toronto.

If there are any questions that may arise during the course of the interview please don’t hesitate to ask. If you have questions after the interview has been completed, please contact either the student investigator or the faculty supervisor using their contact information above.
Please read the following statements carefully:

- I have been informed as to the nature and the purpose of this study as described above.
- I understand that my involvement in this research study is voluntary and that I am able to retract my engagement at any point during the course of interview or analysis.
- I understand that my information will be kept private and confidential.
- I agree to participate in the interview and I allow my interview to be audio-recorded.
- I allow the information given in the interview to be used in the analysis of this research study.
- I allow non-identifying quotes spoken during my interview to be used in any publication involving the results from the present study.
- I understand that the research study has been reviewed for ethical approval by the Office of Research Ethics at the University of Toronto.
- I have been given a copy of this consent form.

By signing my name below I agree to have read and understood the information in the consent form and that I willingly give my informed consent to participate in this study.

Name (please print): __________________________________

Signature: ___________________________________________

Date: ________________________________________________

______ I wish to receive a copy of the transcribed audio interview so that I may review it for accuracy before it is used in the research.
Appendix D: Teacher Candidate Consent Form

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FOR STUDIES IN EDUCATION

Student and Faculty Perspectives on the Integration of Nature in M.T. Teacher Education

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Contact online by simple form:
http://www.research.utoronto.ca/contact-us/contact-form/

Information and Consent Form

The purpose of this study is to investigate the perspectives of teacher educators and teacher candidates regarding the integration of nature in education. We are interested in your experiences related to the M.T. program and other education programs, and will be looking primarily at your understanding of the integration of nature in education as seen in your experience in the M.T. program. We want to know about any experiences you may have had in education, as well as both complimentary and critical opinions you may have about your experiences in the M.T. program. By participating in this study, you will help us to gain a better understanding of the current state of integration of nature in teacher education in the M.T. program in the hopes identifying factors that influence the integration of nature in teacher education so that this problem can be better understood within social scientific research literature.

We would like to conduct an interview with you that will last approximately 30 minutes but may go longer depending on your answers. The interview will consist of a series of open-ended questions in which you are invited to respond to freely based upon what you think is important according to broad research questions. The interview will be recorded by digital voice recorder and the researcher will write notes during the process to improve analysis.
In almost all cases, your engagement in this research study will bring you no risks beyond anything that you would find in daily life. The researcher will strive to create an ideal opportunity for the interview in a safe and comfortable place where you will be able to relate your experience without fear of danger or bias.

Your engagement with this research study is voluntary. You may decide not to respond to any questions being asked, and you have the full capability to end the interview when you so choose. If you decide to decline your permission during the interview, any data collected including the audio recording and all written notes will be not be used in the research study and will be destroyed immediately.

You may withdraw your participation and all data pertaining to your interview at any point before the study is completed in April 2014.

Any information that you give us during the interview will be kept strictly confidential. Audio files and written transcripts will remain on a secure computer. Data files will be encrypted so that only the researcher and his supervisor will be able to access them. Written copies of transcripts and notes will be kept in a secure location where only the researchers involved may have access. Only those working on this project will have access to your data. All of your data will be destroyed five years after the analysis of the research study is finished.

Audio recordings will be taped with the express permission of the participant.

All of your information will remain anonymous. Audio recordings and transcripts of the interviews will be coded in order to keep your anonymity. Only the researchers involved in this research study will listen to the audio files to be able to transcribe and analyse your experiences.

The audio files will not be played for anybody except the researchers directly involved. No identifying information besides the coded number will remain on the audio file.

Your information will be used only for the understanding of aspects of your experience related to the M.T. program and other teacher education programs, and will be used solely for analysis in this research study after it has been coded and personal identification has been removed.

We may use the information you provide to write a scholarly article about the research conducted in the present study, and we ask that you allow us to use non-identifying quotes from the transcript of your interview if they contribute to the writing process.

The researchers acknowledge that they have no commercial interest in this study.

The present study has been approved by the Office of Research Ethics at the University of Toronto.

If there are any questions that may arise during the course of the interview please don’t hesitate to ask. If you have questions after the interview has been completed, please contact either the student investigator or the faculty supervisor using their contact information above.

Please read the following statements carefully:
• I have been informed as to the nature and the purpose of this study as described above.

• I understand that my involvement in this research study is voluntary and that I am able to retract my engagement at any point during the course of interview or analysis.

• I understand that my information will be kept private and confidential.

• I agree to participate in the interview and I allow my interview to be audio-recorded.

• I allow the information given in the interview to be used in the analysis of this research study.

• I allow non-identifying quotes spoken during my interview to be used in any publication involving the results from the present study.

• I understand that the research study has been reviewed for ethical approval by the Office of Research Ethics at the University of Toronto.

• I have been given a copy of this consent form.

   By signing my name below I agree to have read and understood the information in the consent form and that I willingly give my informed consent to participate in this study.

Name (please print): __________________________________

Signature: ___________________________________________

Date: _______________________________________________

_____ I wish to receive a copy of the transcribed audio interview so that I may review it for accuracy before it is used in the research.