

The Experience of Ontario Teacher Candidates who care for the Environment: Seeking  
Ways to Define, Integrate, and Support Teacher Candidates' Passion and Activism for Food and  
the Environment into their Pre-Service Learning

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## **Abstract**

A qualitative study of 13 teacher candidates (TCs) involved in and passionate about environmental issues was conducted. This study explored how activist TCs developed their identity as learning teachers who want to incorporate environmental education into their pedagogy. An understanding of how TCs defined food literacy (FL) and environmental education (EE), activism, as well as the supports they needed to be EE educators in their practice teaching and learning was explored. The Ontario Ministry of Education has policies to support the integration of EE into the curriculum to create good stewards of the community and environment. While this is an admirable goal, TCs typically receive little-to-no exposure or training in EE during their pre-service education due to time constraints and lack of expertise. Limited time and resources, a lack of knowledge of EE, minimal support from parents and administrators, inadequate access to appropriate space serve as the primary barriers faced by established teachers. These difficulties are pervasive, influencing successful integration of EE into the K-12 curriculum, post-secondary environment, and even within the teacher education curriculum. TC feared that a focus on environmental education, and a discussion of their activism, could be viewed as radical or controversial. This fear lead to a tendency to downplay their passion or discount it entirely.

This research also considered how FL and knowledge of food issues might be used by teachers to make connections within EE. TCs had a limited understanding of FL defining it by nutritional aspects or origin of food. Others had not heard of the term. TCs who had a more nuanced understanding of FL, which includes aspects of equity and justice, garnered this knowledge from personal experience. TCs were critical of how schools limited learning about food to an emergency solution to hunger. More support on how to use food as an integrative tool

was desired. Ultimately, TCs felt that EE and FL were not valued either in their post-secondary academic programs or within their teaching placements. Some TCs expressed a desire for more space to discuss their activist experiences, to make connections within and amongst communities of teachers, and to share ideas and resources. Formal education, supplemented with informal discussions via a community of teachers devoted to EE was a viable way to make an integrated curriculum possible.

## **Dedication**

This work is dedicated to Samuel and Gabriel. Sam for reminding me that “the only true failure can come if you quit.” My partner in learning. For you, I kept trying. Gabriel, for your sweet smiles, big heart, and loud voice. Every ‘distraction’ you provided was worth it, every time. I love you both.

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## **Chapter 1**

### **Introduction**

This qualitative study paid expressive interest to the experiences of 13 Ontario teacher candidates TCs to consider their professional identity development. Teacher identity development can help explain how teachers relate to their students and teach their subject area. This research explores the relationship between identity and how it impacts TCs definition of environmental education (EE), food literacy (FL), and activism. Often teachers whose identity includes environmentalist or activist component fear being thought of as unprofessional in the workplace (Barrett, 2017; Jickling, 2003; Robertson & Krugly - Smolska, 1997). My research questions explore how TCs define and understand EE, FL, and activism. This research asks how self-identifying as both an activist and a teacher affects the development of professional identity. Lastly, the research considers the possibility and effectiveness of food literacy as a tool to integrate EE, one of Ontario's curriculum goals. Ultimately, I present suggestions for practical improvements to the education program for pre-service teachers that may be integrated into the post-secondary curriculum.

The goal of this research is to answer some important questions about teacher education and the relationship between FL, EE, and activism in teacher identity. Before beginning Chapter Two, the literature review, I state the research questions as a way to keep them at the forefront. The research questions are:

- Given the goal for teachers in Ontario, as expressed by the Ministry of Education, to integrate Environmental Education throughout all subject areas, how do TCs define and understand the terms and concepts of EE, FL, and activism?

- How does being an activist and a teacher impact the development of a professional identity?
- How do TCs define food literacy and can food literacy be used as an integrative tool in the curriculum (Barndt, 2012; Sumner, 2013).
- Are TCs prepared to be environmental educators? Where does this preparation come from and where can gaps be addressed in the pre-service curriculum?

### **Statement of the problem**

Despite the various policy frameworks in Ontario that require teachers to integrate EE into their curriculum, pre-service education programs do not provide adequate knowledge or training for the implementation of these initiatives (Fawcett, 2009; Feng, 2012; Hoeg & Barrett, 2016). Canadian faculties of education often lack experiences that help prepare students in EE, leaving much to be explored (Inwood & Jagger, 2014). Despite a now-extensive archive of EE research, many questions remain unanswered and gaps remain unfilled in relation to addressing these deficiencies.

Though many teachers theoretically support the effort to integrate and teach EE, they face barriers to successfully weaving EE into their curriculum, specifically insufficient time, support, and knowledge. Some barriers are structural, such as the lack of time the school day affords teachers to explore all areas of the curriculum, including EE (Thompson, 2004; Barrett, 2007; Barrett, 2013). Dedicated time to teaching EE is a fundamental barrier that must be addressed (Stevenson, 2007a). Indeed, even with the interdisciplinary nature of EE, some teachers believe that they cannot adequately address the subject in an appropriate manner given the time constraints they face (Barrett, 2007; Barrett, 2013; Thompson, 2004;).

Other barriers are more nuanced, such as a lack of knowledge (Tuncer et al., 2009) and lack of training and confidence in knowledge (Rogan, 1999; Stir, 2006). A lack of knowledge directly impacts a teacher's ability to promote environmental issues in the classroom because she or he may not feel adequately prepared to answer students' inquiries (Tuncer, et al., 2009; Fazio & Karrow, 2013; Karrow & Fazio, 2015). Knowledge alone, however, is not enough to make an individual effective at teaching EE (Bolstaad, Cowie, & Eames, 2004; Stevenson, 2007a). Research suggests that in the absence of specialized EE training, which is the present situation in Ontario, teachers and pre-service teachers lack confidence to provide environmental education, more specifically, to make wise decisions and take appropriate action in their pedagogy (Rogan, 1999; Stir, 2006). Even when pre-service teachers expressed confidence in their ability to teach EE, once faced with questioning students, they discovered that their level of environmental knowledge was less than they had believed, and their confidence plummeted (Moseley & Reinke, 2003). The policy drive to teach EE, paired with the lack of preparation of new teachers both throughout their pre-service education and educational careers, makes this area a critical area to explore.

While these well-examined barriers are problematic in and of themselves, they are far from the only ones obstructing successful implementation of EE in the classroom. Other hindrances, however, are not as well understood and require thorough research attention. As such, this study sought to explore several additional barriers, such as fear of presenting controversial topics (Bolstad, Cowie, & Eames, 2004; Stevenson, 2007), as well as the dominant discourses in education that paint EE teachers as radical and unprofessional (Barrett, 2017; Robertson & Krugly - Smolska, 1997) or see EE as an 'extra' unnecessary subject (Sterling, 2001).

## **Food Literacy and the Current Context of Environmental Education in Ontario**

North Americans, in general, are more aware of environmental issues and want to protect the wellbeing of the environment (Dunlap & Xio, 2007). Canadians are becoming increasingly aware of food issues, especially those related to health and origin of food (von Massow, M. Weersink, A. and B.G. McAdams, 2018; Agriculture and Agri-Food Canada, 2010). The awareness and interest in environmental and food issues, both in general media and academic literature, is beginning to be prevalent in curriculum documents. The need to implement EE in the Ontario curriculum is based on the various curriculum documents provided by the Ontario Ministry of Education, see the Ontario Curriculum Grades 1-8, Science and Technology (OME, 2017; Acting Today, Shaping Tomorrow, 2009). The relationship between FL and EE will be explored in-depth in the literature review, since food (and its' production and consumption) is a major issue within EE. This study explores the possibility of the integration of FL into discussions of EE to bridge the gap between teaching EE in theory and in practice. Specifically, by using concepts of FL as a window into environmental issues (Barndt, 2012) this study seeks to explore the possibility of harmonizing FL and EE at the pre-service stage. In other words, this dissertation addresses the question: do the theoretical concepts of FL act as an integrative tool to teach EE? and if so, how does this align with the practical experience of new teachers?

Many people are concerned about our society's disconnection from food, general lack of involvement in growing and cooking, and perception of food as a commodity (Kneen, 2003). This fundamental devaluation of food has resulted in practices that harm the environment (e.g., using chemicals and emitting greenhouse gases, and in turn, the health of communities). Some believe this disconnect is leading to a deskilling of youth who, as a result, lack food and nutrition knowledge as well as the interest or ability to prepare food (Lang, 2001; Short, 2003). In addition

to FL, the public awareness of other environmental issues, such as pollution, global warming, and waste reduction, is increasing. It is not surprising, therefore, that school boards are re-evaluating their policies and curricula to take this public awareness into consideration as seen in the document, “A Framework for Environmental Learning and Sustainability in Canada” (Environment Canada, 2002). This document supports the need and desire of Canadians to include environmental learning in all sectors of society, including the classroom (Russell & Burton, 2000). The document, published by the Government of Canada, was developed with help from 5,500 Canadians and was Canada’s contribution to the World Summit on Sustainable Development. This document is important because it illustrates that Canadians value the environment and want it integrated into schools, literature, and scholarship. In 2018 a progress report, from the 2016 version of the Federal Sustainable Development Strategy, was put forth with further emphasis on increasing awareness, capacity and education of climate change, as well as ensuring that citizens have equal access to information on sustainable lifestyles (Government of Canada, 2018, pp.15). Currently a new draft of the Federal Sustainable development strategy is being prepared and is under consultation for the years 2019-2022 (Government of Canada, 2019).

Since education falls under provincial jurisdiction in Canada, the province of Ontario began to create additional policies to be implemented at the school board level. Currently, students may be exposed to EE in several ways, including Environmental Studies Programs (ESPs), the EcoSchools programs, or through integration of EE within the curriculum. The addition of ESPs began in 2002 to provide specialized environmentally-focused student curriculum in Ontario (Breunig, Murtell, Russell, & Howard, 2014). These programs incorporate environmental topics into an interdisciplinary curriculum model whereby multiple teachers

collaborate and create projects in secondary classrooms (Russell & Burton, 2000).

A different policy approach expands EE curriculum throughout the school, rather than restricting it to certain students who enroll in specific EE courses. Integration of EE is a contrast to traditional curricular organization in Ontario, often segmented by subjects, where students learn about one subject for a set period during the school day. Integration is useful because it includes real-world experiences that make learning authentic to students' lives and links subject matter across the curriculum (Breunig & O'Connell, 2008).

It is worth noting that schools can also find support for EE through the EcoSchools program (Ontario EcoSchools, 2019). While this will be addressed in detail within the results of this study, briefly, EcoSchools is an Ontario initiative that certifies schools to become more environmentally focused both within and outside of the classroom. The program provides tools and resources to teachers to support environmental learning. The primary focus of the program, however, is not curriculum changes to integrate EE but to make structural changes to the school itself, such as the introduction of recycling programs and school green spaces. For every goal that is met, the school receives points toward a specified level of certification (see Endnote 1). EcoSchools can help introduce preliminary concepts of EE (such as recycling and waste reduction) but the effectiveness at transforming environmental attitudes, and introducing EE is still being questioned (Brodie, 2017).

In addition to special programs, various reports and curriculum documents also address the goal of integrating EE into the curriculum. A panel report, "Shaping Our Schools, Shaping Our Future," published in June 2007, focused on student-learning about food, water, energy, air, and land (Breunig, 2013). The provincial government has been moving forward on the report's

32 recommendations. Specifically, in 2009, the Ontario Ministry of Education published a policy document stating that EE should be embedded in all grades and in all subjects of the Ontario curriculum (Ontario Ministry of Education, 2009, p.12). The publication of this document led to a policy entitled “Acting Today, Shaping Tomorrow” (2009). Both documents position EE as an important and integrated subject and emphasize involving TCs in the process of integrating EE into the classroom. “Acting Today, Shaping Tomorrow” (2009) calls for subject-specific training activities that will introduce the new curriculum to existing teachers, and include training for pre-service teachers. At the secondary level, the intention to include EE in all curricular areas is in response to the removal of the “environmental science” course from the Ontario curriculum in 1998 (Ontario Ministry of Education, 1998), which reduced EE in Ontario Secondary schools (Puk & Behm, 2003). However, this removal in secondary school also had the indirect effect of dimming the importance placed on EE at the elementary level. Notably, one study found that the majority (88%) of elementary teachers taught EE two hours or less a week (Puk & Makin, 2006). To add to this dilemma, teacher education programs rarely offer courses to help teacher candidates develop interest, knowledge, or teaching skills for EE (Puk & Stibbards, 2010). The lack of exposure in elementary school, as well as the lack of EE-specific classes in secondary school, provides future TCs with little exposure to environmental knowledge within formal classrooms. In other words, teachers are expected, via policy and expectations, to successfully perform a job to which they have minimal exposure and for which they receive insufficient and inadequate training.

### **Bridging the gap between policy and practice in teacher education programs**

To date, very little research has examined the ways in which TCs attempt to implement EE in their practice teaching, and as such, it is unclear how TCs respond when the onus to do so

is all on them. Given that EE is not required for completion of the teaching degree, how do teachers with no prior knowledge or interest in EE embed it in their teaching? To answer this question, I sought to investigate how contemporary TCs felt about their desire and ability to teach EE, how their previous environmental experiences impacted this understanding, and whether FL can provide a way to present environmental issues in a more accessible and comprehensive way (Barndt, 2012). Lack of experience or knowledge of EE is often viewed as a barrier to teaching it (Stevenson, 2007). I focused on TCs that, hopefully, through their experiences could overcome to some extent at least the barrier of lacking knowledge. There is often a gap between the aspirational policy statements of EE and successful practical application in the classroom. In fact, some educational researchers believe that, despite the importance of environmental issues and associated policy initiatives, the divide between policy and practice is so profound that EE cannot be successfully taught in schools (Bolstad, Cowie, & Eames, 2004; Feng, 2012; Stevenson, 2007; Saylan and Blumstein, 2011). While there is an agreement that various structural and practical problems exist, the most efficient way to address them remains up for debate.

Several different approaches have emerged surrounding the implementation of EE in classrooms. Some argue that without sufficient education and knowledge of EE, integration cannot be successful (Feng, 2012). A review of the Additional Basic Qualifications courses for teachers in Ontario (ABQs) indicates that there are minimal opportunities for teachers to learn about EE after completing their undergraduate education, a condition that Fawcett (2009), characterizes as a “vacuum of practice” that is bound to “deskill generations of teachers and learners” (p. 105). Weston (2004) reiterates these systemic barriers and offers practical ways to work within the confines of them. What is also unique about Weston’s approach is that EE is not



looked at as a separate subject, but rather as a part of the classroom life, akin to the goals of integrating EE (OME, 2009). He does not call for more resources or supplies, in fact, he brings few outside resources into the classroom, unless they come from the outside, literally. In the eyes of Weston (2004), a teacher has the incredible opportunity to reconnect students to their natural ‘animalness’ and reconnect them to earth.

Similarly, in a large-scale Canadian study (Astbury, Huddart, & Theoret, 2009), a lack of formalized EE curriculum was not considered an obstacle to teaching EE. In fact, the findings of this study suggest that policies and curriculum changes do little to help the integration of EE. Rather, teachers’ dedication and ability to connect and share their passions made the largest impact; therefore, teachers needed a “community of practice” to effectively integrate environmental education into their classrooms (Astbury et al., 2009). These communities of practice, a supportive community that accepts ideas and insights without criticism and collaborates to improve education, counteract the barriers to EE that teachers encounter when they lack knowledge of environmental issues (Bolstad, Cowie, & Eames, 2004; Stevenson, 2007b). A community of practice helps a teacher feel accepted as both an activist and a teacher, able to share his or her passion and interest without fear of being judged (Melville, Bartley, & Weinburgh, 2012; Sachs, 2001).

This community extends beyond working teachers. One Canadian university focused on incorporating pre-service teachers into community activist projects, thus enabling them to incorporate those experiences into teaching (Alsop, Dippro, & Zandvliet, 2007). Unique to this study, a community of practice was created between all levels of educators (new teachers, experienced educators, those that teach educators at the university level, and practicum teachers), the community, and the students. The study proposed new ways of thinking, calling the

profession to rethink and reimagine what the identity of a teacher entails – to include a focus on global circumstances and democratic connections through place, and to reconsider practices from new points of view. This reinforces the philosophy that EE is about the connection humans have within the natural world, and social justice; a focus on community and activism, as well as relationships and interconnectedness to teaching (Alsop, Dippo, Zandvliet, 2007).

Many propose that a better understanding of TCs, their training, their beliefs about EE, and their knowledge of environmental issues (Puk & Makin, 2006; Puk & Stibbards, 2010) can help bridge the gap between EE theory and practice. While the problems facing TCs and their relationship with EE have been documented, there remains a gap in the literature concerning the practical solutions to them. This study addresses the need to acknowledge TCs' learning experiences and passions and identifies the ways TCs make meaning and form identities throughout their journey to become educators. It is my hope that the findings from this study can help elucidate the balance between curriculum, policy and supports needed to teach EE.

**Relevant documents.** The reports “Shaping Our Schools, Shaping Our Future” (2007) and “Acting Today, Shaping Tomorrow” (2009) mirror EE academic literature in how they define and characterize EE, including the acknowledgement that there is no definitive formulation of it. Both documents agree that EE should be locally relevant; culturally appropriate; enhance understanding that local issues often have provincial, national, and global consequences; build capacity for community-based decision making and environmental stewardship; and support lifelong learning (Ontario Ministry of Education, 2009). In this way, these proposals attempt to recognize the need for education situated in both informal i.e. education that takes place through conversation, personal interests, and community settings and formal settings such as the classroom (Stevenson, Wals, & Dillon, 2013). The documents

emphasize the role of the community in effective EE and recognize the importance of community partnerships and place consciousness in environmental praxis. EE is defined as value-centered and action-oriented in relation to the importance of community in both documents (Palmer, 1993). The relationship between students and communities is imagined as reciprocal, where students benefit from reflecting on how personal and social values are connected to their local community (Ministry of Education, 2009) and in turn, students are encouraged to be active citizens that engage with the community in meaningful ways. One study found that EE fosters a connection between learners and the broader community (Haugen, 2010). In this way, the policy documents reflect values present in the literature and view the classroom as a place to deepen understanding and create partnerships with community groups.

### **The importance of the study**

The analysis is designed to provide a glimpse into the challenges of EE implementation, the relationship between EE and FL, and the gaps between teacher education and practice. One of the main goals of the Ontario curriculum policy document, “Acting Today, Shaping Tomorrow” (2009) and environmental literature is to take an action-oriented approach to local environmental issues (Barrett & Sutter, 2006). It has been found that teachers who display such an approach are more likely to produce environmentally-literate students (Boubonari, 2013; Tuncer, et al., 2009). This action-oriented approach is inspired via an integrated curriculum. For example, a brief look at the Ontario curriculum documents reveals that for each primary and junior subject, a section entitled, Science, Technology, Society, and the Environment (STSE) (OME, 2007) is provided. These sections are meant to inspire “numerous opportunities for teachers to integrate environmental education effectively into the curriculum” (p. 36), yet there is insufficient advice on how to practically implement these opportunities.

Teacher identity development and the relationship between being an educator and environmental activist are related to these policy goals. Identity informs how teachers relate to their students and teach their subject area; there is often a tension between being an activist and a teacher, as teachers fear being thought of as unprofessional should this identity be revealed in their workplace (Barrett, 2017; Jickling, 2003; Robertson & Krugly - Smolska, 1997). But teachers with an activist background have additional information, passion, and awareness to offer their students, and fear of encountering negative attitudes may make integration unnecessarily challenging. It is important to consider how TCs define and understand EE and FL, especially those with some knowledge and passion in the area, because it can provide concrete ways to support new teachers and inform education programs.

While policy makers and academics focus on developing environmental goals within education, they often do not consult teachers during the process (Hart, 1993) and therefore, this activist experience goes unevaluated. There is little research on the impact these experiences have on a teacher's identity development and the journey from student to teacher in the classroom (Montano, 2002). Integrating a teacher's own views and experiences, is essential when designing any realistic EE program (Agbor, 2016; Alsubaie, 2016; Fien & Maclean, 2000; Grace & Sharp, 2000). This comes with a word of caution, however, because a teachers' knowledge is not privileged knowledge and all activism is not implicitly good. There is already a fear of teachers who engage in activism of being viewed as unprofessional; it is necessary to focus on the experiences of everyone in the classroom in a way that students do not feel persuaded, but rather, given a chance to explore based on their own experience and thoughts (Barrett, Ford, & James, 2010; Ellsworth, 2003; Jickling, 2003). Problematically, few studies directly examine these ideas (Robertson & Krugly-Smolka, 1997). The exceptions are studies

that focus on school gardens. They have examined the outcomes for the students, teachers' pre-existing knowledge bases (Cutter-Mackenzie, 2009; Cutter & Smith, 2001; Stibbards, 2010) or students' ability to act (Jensen & Schnack, 1997; Payne, 2003).

Ormond et al. (2014) provided a detailed history of the Canadian research conducted in environmental teacher education. The literature continuously points out the barriers and obstacles to EE but highlights the absence of the Canadian voice at the pre-service level. I encountered this longstanding absence as a TC, both in formal lectures and training, as well as in informal discussion and collaboration. According to Ormond et al. (2014) as far back as the 1970s, authors such as Rioux (1974) and Davis (1976) conducted studies that painted EE as an outdoor subject for teachers<sup>1</sup>, focusing on natural education, and that there was limited EE in teacher education programs in provinces without EE legislation. For clarification, outdoor education focuses on the environment, situated outdoors, that is action based and theme oriented. It addresses emotions, thoughts, and is based on practical information and not theoretical knowledge (Dahlgren & Szczepanski, 2004). This is different from EE which is included in the curriculum, does utilize the indoors as, typically, its' main setting.

In the 1980s, a survey of all 41 Canadian pre-service education programs found that only 18 offered a course in environmental education (Towler, 1980). This study was thought to be a benchmark, but 20 years passed before it was replicated, and similar results were obtained. Of the 35 programs reviewed at that time, still only 18 offered courses in EE (Lin, 2002). A newer study by Beckford (2008) confirmed that teachers believed there was little opportunity to go outside the current curriculum to focus on the environment.

This history, provided by Ormond et al. (2014), highlights the need for a comprehensive and nuanced examination of EE implementation. There has been a struggle since the conception of EE to incorporate it into the curriculum for teachers, yet teachers are expected to integrate it in their own practice. There is still a large gap between what policy dictates and what resources and support the faculties of education provide to its TCs. It is unreasonable to expect successful results to EE integration given that half of Canadian university education programs do not provide exposure, discussion, and practical and theoretical approaches to EE curriculum (Lin, 2002). Thus, it is crucial that teachers are provided with proper introduction to EE in order to ensure that the topic is appropriately integrated into classrooms. Karrow, D., Elliott, P. et al., (2016) noted the absence of EE knowledge and passion at the level of acceptance into the pre-service education program. This indicates that there is no preferential screening for these aptitudes, thus placing little importance on this area of knowledge. A solution they proposed would be for faculties of education to allow students to self identify in areas of academic and non-academic EE experiences (Karrow, D., Elliott, P. et al., 2016) – this would enrich the knowledge and experiences that TCs could share with others and diversify the incoming TC cohorts.

It was stated 20 years ago that, at the school level, “gaps between rhetoric and reality have been discussed but remained virtually untouched” (Robertson & Krugly-Smolka, 1997, p. 313). This is still relevant today, given the lack of EE Canadian pre-service programs. These gaps can be partially addressed with research that focuses on teacher reflection on their practice (Reid & Scott, 2013). Broadly, this study explores the gap between curriculum, teacher education and policy documents, such as the “Taking Action, Shaping Tomorrow.” More

specifically, this research asks: Are teacher candidates prepared to become the environmental educators that these policies require them to be?

## **Chapter Outline**

The following is a general outline of the dissertation.

In Chapter Two, I provide a review of all relevant literature on the following terms: environmental education, food literacy and activism. There is an emphasis on studies that focus on the pre-service education level since that is most relevant to this study, although other literature exists that explores established teachers' engagement with EE. The theoretical framework of teacher identity is also explored. Lastly, I articulate the relationship between these terms.

In Chapter Three, I provide the methodology. This includes literature on the qualitative approach (Creswell, 2007) and constructivism ideology adapted for the study, information on the research site, recruitment, participants' demographic information and data analysis.

Chapter Four begins the presentation of the results of this study. It provides the analysis of TCs stories and experiences, including their understanding activism, environmental education and food literacy. A qualitative study on a groups' experience typically presents in a narrative form, and thus the words of participants are written with their experiences in mind using TCs personal experiences and direct quotes. The development of teacher identity is also explored.

Chapter Five looks specifically at how the university education program (B.Ed.) and practicum (practice teaching) impact the understanding of EE, FL and activism. It provides a narrative experience from TCs about how they encountered these concepts and resulting practices in the education program and how they impact their understanding of these issues as

part of their identity. Chapter Five also includes a discussion about EcoSchools, a program designed to make schools become more environmentally literate. A discussion of the equity issues identified by TCs when involved in food programs at schools is provided.

Chapter Six provides an outline of TC experiences, and recounts the barriers they have faced, or perceive, in teaching EE and FL. It also provides a summary of how TCs define the major terms: EE, FL and activism.

Chapter Seven provides recommendations on how to overcome barriers to teaching EE, FL and how to better address teacher identity and the relationship between being an activist and teacher.

Lastly, Chapter Eight provides a conclusion. Each research question is recounted and a summary of the key findings and results relating to the question is provided. The limitations of the study and areas of future research are also discussed.



## Chapter 2

### Environmental Education, Food Literacy and Activism

I review the existing literature, including definitions, complexities and tensions of environmental education (EE), Food Literacy (FL), and activism. This section also provides context for the research questions I am addressing: how do TCs define EE, FL and activism? And what does this mean for their practicum, as well as their own experience learning to be a teacher within the B.Ed. program? I provide literature that explores the tensions and debates across the following literature items:

- 1) Environmental Education (EE), including the history of EE as a term, with close attention to important documents (Martin, 1975; UNESCO-UNEP, 1975; UNESCO, 1978; UNCED, 1992). In addition, I will consider the variety of frameworks and ways to understand EE (Ardoin, 2006; Gough & Whitehouse, 2003; Haugen, 2010; Mckeown & Hopkins, 2003; Orr, 2004; Sauve, 2005).
- 2) Food Literacy is often studied from a project or case study standpoint focusing on food (Cutter-Mackenzie, 2009; Johnston & Baker, 2005; Koc, MacRae, Noack, & Ustundag, 2012). Alternatively, popular education scholars, such as Barndt (2012) and others (Starr, 2010; Levkoe, 2006) consider food from a cultural, justice, and activist standpoint. Most importantly for this study, a pre-service teacher understanding of FL ideally includes sustainability and trade-offs in the food system (Yamashita, Hayes & Trexler, 2017).
- 3) Activists are often defined as a group of formal organized individuals seeking to act against a problem or area of concern (Benford & Snow, 2000; Marx & McAdam, 1994; Piven & Cloward, 1978; Starr, 2010). The tensions of food activism as a social, lifestyle

or consumeristic movement will also be addressed (Johnston, 2008; Starr, 2010, Queniart, 2008; Wekerle, 2004). The relationship between activism and teacher identity is also integral to this research, especially the call to include activism in the classroom (Niblett, 2017). Teacher identity hinges upon how a person defines himself or herself (Handl & Deutsch, 2012; Oyserman, Elmore, & Smith, 2012; Seyfang & Jordan, 2002) and is impacted by the dominant discourse in education that makes it difficult for teachers to express passion and awareness of EE (Barrett, 2006; Ellsworth, 2003; Sachs, 2001) for fear of being viewed as unprofessional (Pedretti, Nazir, Tan, Bellomo & Ayyavoo, 2012). Lastly, I will address the conditions that support teacher/activism in EE, including democratic schools (Beane & Apple, 1995) and communities of practice (Sachs, 2001).

## **Environmental Education**

**History of the definition of Environmental Education.** The evolution of the term EE can be seen through many important documents, including the Belgrade Charter (UNESCO-UNEP, 1975), the Tbilisi Declaration (1977), and the Earth Summit (UNCED, 1992). Seyfang (2002) suggests that these gatherings were important because they represent the first time the impact of human behaviour on the environment was specifically addressed in large settings with the goal of providing a collective proposal to help the environment. The general outcome was not activism per se, but instead broad policy goals, although because these gatherings were in the public arena, they did increase awareness of environmental problems (Handl & Deutsch, 2012; Seyfang & Jordan, 2002).

The Belgrade Charter on EE (UNESCO-UNEP, 1975) focuses on the *environmental* aspect of environmental education. Importantly, there is no mention of terms such as society, economics or development. This is relevant because later documents, such as the Tbilisi

Declaration (1978), focus on the both the development and environmental aspects of environmental issues. The Belgrade Charter suggests EE is meant to develop a population with environmental awareness and concern (UNESCO-UNEP, 1975). Coming quickly after the Belgrade Charter, the Tbilisi Declaration (UNESCO-UNEP, 1978) was the final report of an intergovernmental conference on EE. This document has general and broad goal statements, using key words such as awareness, knowledge and skills. The intent of EE is to reduce harmful human effects on the environment.

To put these documents in historical context, at the time of publication, important realizations about the environment were taking place. Earlier, during the conservation movement of the 1920s and 1930s, the environment and land was viewed as something to be managed and controlled scientifically. Control and management impacted policies designed to define how humans use resources, usually framed as limitless commodities to be replenished with the correct forms of human intervention (Fischer and Bliss, 2009). As the conservation movement shifted, environmentalists like Aldo Leopold suggested that the conservation movement's shift towards economics and education (and away from a land ethic) was the biggest obstacle to fostering a relationship with the land (Leopold, 1949). At the time of the Tbilisi Declaration (1978), society was concerned with pollution, as seen in the landmark book *Silent Spring* (Carson & Darling, 1962). The first Earth Day also occurred in 1970 signifying the change in attitude towards the environment as a place to care about and celebrate, rather than just inhabit and manage (Earth Day Newtork, 2017).

During this time, EE was being explored in the academic literature. Martin (1975) first defined EE as a process of recognizing skills and attitudes necessary to understand and appreciate the interrelatedness among humans, their culture, and their biophysical surroundings.

With now a 40-year history as an academic subject and practice, there is still intense debate about what defines EE and what should be included in EE research. While Martin's (1975) definition is quite dated, many aspects of it are still relevant today. Building on Martin (1975), the United Nations Environmental Program expanded the focus of EE to include individual environmental knowledge, skills, commitment, and motivation to solve environmental issues (Stevenson et. al., 2013). When society can correct the damage done to the environment, and current and future needs are able to be met, then, it is believed, our earth will be sustainable (Shiva, 1992).

The next critical document exploring the history of EE was Agenda 21 (UNCED, 1992). In this document, objective 12.56 demonstrates a distinct shift to education, promotion of awareness, and the training of educators to be environmental stewards. Creating environmental curriculum in elementary and secondary schools is also a key point. Three areas of concentration were set forth: environment, society, and economy. The word environment, as a stand-alone term, was replaced within the document by "environment and development".

Despite the different foci and terminology of these conferences, there are some common outcomes including providing a place for common principals to be developed and building institutional capacity on environmental issues, as well as contributing to the development of EE as a field (Seyfang and Jordan, 2002).

**The Relationship between Environmental Education and Education for Sustainable Development.** As the historical path of the term EE suggests, there is a relationship between the concepts of *development* and *sustainability*. Agenda 21 (UNCED, 1992) solidified the idea that environment and development, or more specifically *environmentally sustainable development*

(ESD), are related. This coupling of the terms EE and ESD has led to some confusion as the words, though similar, are not synonymous. As such, I provide a brief explanation of the relationship between the two terms.

As seen in the Tbilisi document, the inclusion of the words ‘sustainable development’ into EE has been a contested issue. There are similarities between EE and ESD because they both have goals to create a better world, to create behaviour change, and to foster community-based decision making (McKeown and Hopkins, 2005, 2007). Education for sustainability is considered an inclusive education with the possibility of transforming the learner.

McKeown and Hopkins (2003, 2007) provide a comprehensive outline of what is considered EE and what is considered ESD. They suggest that EE has contributed significantly to ESD, including the value of collaborating, defining environmental literacy, and helping tackle difficult societal issues (p. 222-223). Despite the commonalities between the terms, one major difference separates them, specifically the inclusion of *development* in ESD. To reiterate, the Belgrade Charter proposes the key word in EE is *environment* (UNESCO-UNEP, 1976), with additional focus on ideas such as “awareness”, “knowledge”, “skills”, “values”, and “participation” (McKeown and Hopkins, 2003, p. 118):

The goal of environmental education is: To develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones. (UNESCO–UNEP, 1976).

ESD can inspire students and citizens to think critically about environmental issues, to think in system terms, and use participatory and democratic actions to tackle environmental problems (Tilbury & Wortman, 2008, p. 23). Lastly, I have found Eilam and Trop (2010; pg. 44, figure 1) useful in forming my understanding of EE, and its relationship to ESD. They propose that the EE/ESD relationship can be viewed in four different but connected ways: 1) as separate but overlapping; 2) with EE absorbed into ESD to expand thoughts, concepts, and boundaries; 3) as separate, but with ESD built upon an EE foundation, and lastly, 4) as a complete overlap. In using this framework, I use the third way to outline my research because I believe EE provides a strong framework for understanding environmental issues, something to establish before expanding to development discourses. I view EE as separate from ESD, although ESD is built upon many of EE's philosophies. My main point of contention with ESD rhetoric is the focus on human welfare and human impact, which I believe uses an anthropocentric lens and is too far removed from the intentions of the Belgrade Charter (Kopnina, 2012). Like Weston (2004), I do not feel that further separating humans from non-human animals will serve to teach environmental issues and will only further separate us from environmental problems. Jickling (1992) is also critical of ESD, suggesting that it offers a formulaic blueprint for thinking about environmental issues, thus dulling students' ability to think critically for themselves. Keeping the terms separate, with EE as the foundation, I believe helps highlight areas in the discourse that are problematic. I also believe it helps differentiate EE as a form of education, seeking to improve the environment for its' own sake by promoting awareness, citizenship, and an ethic of care for intrinsic value and relationships but rather for monetary gain and development (from ESD).

**Themes of Environmental Education.** Defining and describing EE is complicated by a lack of consensus on its meaning. There are many approaches to teaching EE with many foci. In short, there is no right way to do EE (Bodzin, Shiner Klien, & Weaver, 2010). In earlier periods, EE pedagogy was limited to changing individual behaviour to ‘fix’ environmental issues (Clover, 1995). Educators sought to foster individual awareness, to develop the skills to solve environmental problems, and to inspire a willingness to make effective decisions as action-oriented citizens (NAAEE, 2004). David Orr (2014) concluded that the goal of education is the mastery of oneself and one’s knowledge to make a difference in the world. His thinking has encouraged a move away from the individualization of environmental problems and action to change as a collective action (Haugen, 2010).

Gough and Whitehouse (2013) suggest that EE is difficult to “tie down” because “its boundaries are fuzzy” (p. 9). Indeed, the literature reflects these blurred boundaries — EE can be a multitude of things. For example, Sauv   (2005) suggests EE has 15 currents to visualize and practice it. Some are from the ‘birth’ of EE in the 1970s. These are not considered outdated, but rather part of a flow of ideas that have influenced current ideas. These include, but are not limited to, the “humanist/mesological current” that views the environment not only as a biophysical space but one that has history and considers humans’ place in that historical context. Another example is the “praxic current” that reorients EE learning to a loop of action and ongoing reflecting (Sauv  , 2005). There are other ways of approaching EE, such as place-based and critical place-based pedagogy (Gruenewald, 2003). The concept of place-based education, which adheres to the goals of Belgrade Charter (UNESCO-UNEP 1976) and Tbilisi Declaration (UNESCO 1978), is presented as another method of EE. Place-based education understands EE to foster a sense of community and connection to place (Ardoin, 2016). Using place to teach may

occur in the school yard to grow food (see also Cutter Mackenzie, 2009) and as a nature study (Dewey & Dworkin, 1959; Tolley, 1994).

In their introduction to *The International Handbook of Research in Environmental Education*, Stevenson et al. (2013) suggest that EE includes five broad themes: 1) the embracing of normative questions, 2) a focus on interdisciplinarity, 3) a focus on developing “the agency of learners” to take action on environmental issues, what education often fails to provide, 4) education in a range of formal and informal settings, and 5) an education that reaches across both global and local scales (p. 2). Many of the historical understandings of EE try to address normative questions, of what ‘should be’ in an attempt to define EE: Belgrade, Tbilisi (UNESCO-UNEP, 1975-8) and Agenda 21 (UNCEP, 1992). Sauvé (2005) and Martin (1975) provide an interdisciplinary aspect to EE, while Orr stresses the importance of informal education (2014). Lastly, the scale of EE is touched upon by Gruenewald (2003) and his discussion of place and scale. EE is difficult to fit into a disciplinary box, which often poses a problem for educators working within a system that is defined by disciplines (Johnston, 2009). It includes social aspects, but also maintains a critical lens. In terms of EE, the social aspects would include justice and equity and how interactions affect humans and non-human animals. Like ESD, a discussion on development would occur, however, the focus would not be for development sake or monetary gain, but on how development could be done to include equity and social issues. A larger question would be, if development should happen at all? For me, it is impossible to separate social issues from environmental issues (Bookchin, 2003) and the aforementioned themes place an emphasis on this idea.



**Dominant discourses.** Within the various definitions of EE exists many different meanings and discourses. In education, discourses of teaching are meaningful because they offer a framework for identity; if one deviates from the framework, there is a fear of being perceived as irresponsible or doing a poor job (Barrett, 2006). Using *The International Handbook of Research on Environmental Education* as a source, I will provide a brief overview of discourses and voices in EE. As previously explored, conservation education focused on the relationship between the earth and its inhabitants (Sauvé, Berryman, & Brunelle, 2007) but with documents such as the Belgrade Charter (1976), Tbilisi (1978) and Agenda 21 (1992), the concept of EE was broadened to include discourses of environment and sustainable development. This repackaging of EE (Campbell and Robottom, 2008) was thought to be easy for the public to understand, although it was criticized for upholding a discourse of crisis that humans must solve (Berryman & Sauve, 2013). The inclusion of the term *environment* into other disciplines also makes the discourse of EE challenging because the term has taken on many different meanings; this is evident in Sauvé's current mapping of environment. As Brulle (2000) demonstrates, the term environment is considered through many lenses, such as ecofeminism, conservation, deep ecology, and environmental justice. The different lenses and discourses of EE reveal a variety of assumptions about the environment and how society understands it. For example, using a poststructuralist and feminist approach, EE is considered grounded in modern science, colonialism, and gendered ways of knowing (Gough & Whitehouse, 2003). Whereas viewed through the lens of place EE is viewed as rooted in a meaningful location, rich with history and culture (Gruenewald, 2003).

In most Canadian schools, the teacher is widely understood to be a societal vehicle for imparting knowledge to students. The teacher promotes his or her students' learning, and that

learning is measured by how much and what kind of knowledge they acquire. Like most workplaces, there is often a spoken or unspoken set of rules and standards required to do one's job. Some teachers may avoid expressing a desire for students to be active environmentalists for fear of being viewed as radical or employment limitations (Barrett, 2017; Robertson & Krugly - Smolska, 1997). In this way, discourses surrounding what it means to be a 'good teacher' can put limits on EE curriculum. Because of the dominant expectation that teaching is apolitical, to work against the grain of traditional schooling may require being a maverick (Barrett, Ford, & James, 2010; Ellsworth, 2003). Yet the teachers who refrain from EE perform a disservice by reinforcing the idea that political voices are controversial, unimportant, and to be avoided (Jickling, 2003).

This limitation is reinforced by viewing EE as an educational frill, at the margins of both policy and practice in education (Sterling, 2001). To move beyond EE as a marginal subject, new discourses must be created. Such a change may impact the sense of permission teachers need to engage with environmental subjects. Current research reiterates that administrative support, changes that integrate EE into school-wide goals, help motivate teachers to do EE (Powers, 2004; Ernst, 2014).

Another relationship -between science and education - creates another discourse within EE. As previously stated, the 1970s was an era where environmental concern increased, and as such, environmental damage was a preoccupation of the scientific community. The dominant approach to science at the time reflected a Western fact focused and male-centred perspective; therefore, many calls for education and information utilized language reflecting this view (Gough & Whitehouse, 2013 p. 14). The relationship between science and EE is still evolving, and the key question is how scientific inquiry should address environmental topics. Should

science education investigate the environment solely using narrow conceptions of facts, or should social, political or economic lenses be used to help inspire action (Blatt, 2015)?

Numerous studies explore how pre-service teachers understand environmental education. Generally, studies find that pre-service teachers possess a positive attitude towards the environment but lack knowledge and a desire to act (Boubonari et al 2013; Pe'er, Goldman, & Yavitz, 2007; Tuncer et al. 2009); studies have found that many pre-service teachers define EE as “education about the environment” (Evans, Whitehouse, & Hickey, 2012). This view is often conservative (Fien, 2004) and technocratic (Robottom, 1987), labelling the environment as something ‘out there’ that humans can manipulate and control. These discourses are often due to the way science education frames EE which will be discussed below.

In a recent study, Barrett and Hoeg (2016) surveyed 22 Ontario pre-service biology teachers for attitudes towards EE pre- and post- intervention. The pre-service teachers with a median score were interviewed further regarding their beliefs on the environment. Pre-service teachers were enthusiastic and had a desire to teach students about the environment, but the results indicate that, while some had a protective attitude toward nature, others utilized anthropocentric language to describe the environment, oftentimes privileging a scientific approach to nature. This resulted in viewing the environment as a resource to be used for human benefit.

In another study, 58 pre-service teachers were asked to discuss their experience at a climate change exhibition used as an educational intervention in pre-service learning (Saribas, Kucuk, & Ertepinar, 2017). Though attending the exhibition did not increase their environmental knowledge, it was found that pre-service teachers had a stronger desire to understand larger

issues such as climate change and had an increase in perception of environmental uses in the classroom. Pre-service teachers understood education for sustainability to be a continuous endeavour, one that was local and relevant, by using hands-on approaches to action (Evans, Whitehouse, & Hickey, 2012).

Another study sought to discover where knowledge of environmental issues originated (Gwekwerere, 2014). To learn about this origin, they engaged Ontario pre-service teachers (n=84) in online surveys and focus groups. In this study, pre-service teachers had some familiarity with larger concepts such as renewable resources and greenhouse gas effects. Their knowledge did not come from the pre-service program but from their secondary school education. However, the participants displayed only an average rating of knowledge and desire to act on environmental issues, despite feeling that it was very important for schools to teach it. Another study conducted in Ontario sought to explore the impacts of outdoor EE with kindergarten students and their teachers. Teachers found an outdoor space to support engagement and interaction; ultimately teachers believed EE in an outdoor classroom supported the curriculum for both their own teaching and student learning (MacDonald & Breunig, 2018).

### **Food Literacy**

The term *food literacy* lacks a widely agreed upon definition. It arose out of the various movements addressing food, sustainability, health, and social problems (Sumner, 2013). The concept of literacies, in general goes beyond language and includes a focus on context and situated knowledge (Frisch, Camerini, Diviani, & Schulz, 2012). Some authors focus on the preparation of food (cooking) as a benchmark for being food literate (Caraher, Dixon, Lang, & Carr-Hill, 1999). A survey of stakeholders, including experts and youth, defined FL and its

components as the ability to plan, select, prepare and eat food (Vidgen & Gallegos, 2014). While this study provided a context for food literacy using different knowledges and experiences, both expert and youth, it limited the focus to eating and preparing food. Over time, the concept of food literacy has become more multi-faceted and less about practical and technical cooking skills, though those are still important aspects (Short, 2003). Food literacy has been defined as the degree to which people obtain and process information about food, labels, and nutrition, assessing equity issues (Wiser Earth, 2007; Yamashita, 2008). Food studies, a category which subsumes food literacy, emphasises the importance of understanding food within a social and cultural context with real world connections at multiple scales (Koc et. al., 2012). The issue of scale and how food fits into it is important to addressing policy, especially when the objective is an understanding of the food system and related socio-cultural issues (Johnston & Baker, 2005; Koc, MacRae, Desjardins, & Roberts, 2008).

It is the multi-dimensional nature of food, and the diverse ways to conceptualize it, that provides avenue for integrated EE. For this study, food was explored within a range of subjects from which it has been typically excluded. While activism will be explored in the latter part of this chapter, I will provide some context for food and activism here. Food is not merely a commodity, something to be consumed daily, but a part of life with embedded material and power (McMichael, 2000). Those that have access to food hold power and privilege – to eat nutritious food, to learn about food, to engage in an education not disrupted by hunger, to choose to buy local and so on (Alkon & McCullen, 2010; Guthman, 2011; Johnston, 2008; Potorti, 2014). As such, food intersects with several activist areas such as poverty, women's rights, and community organizing. Environmental educators engage with multiple issues, including social justice, as well as socio-political and economic factors, and sustainability (Haugen, 2010), FL

engages, and is embedded, within this framework. Since every student has experience with food, the classroom provides a platform to uncover the social justice, socio-political, and economic barriers to food access. Through the interconnection between EE and FL, students can explore real-world examples, such as poverty, racism, the environmental and social impact of factory farming, city planning that lacks affordable transportation and creates food deserts, and the community and social impact of cooking and gardening. Per Barndt (2012, p.70), food is the “quintessential interdisciplinary subject” and an “entry point” into other disciplines.

**Food and Education.** Food and cooking skills are important for several reasons with respect to health, knowledge, empowerment, engagement, culture, food security, and fun (Anderson, 2007), but food literacy is also related to knowing where food comes from, who grows and processes food, and how it is sold. Much like the gap in practice for new teachers to learn EE that will lead to a loss of important skills (Fawcett, 2009), being food literate is necessary to counter the de-skilling that has taken place in the North American food system where food is fast, cheap, convenient, and distant (Kneen, 2003, p. 39). This distancing from food has affected intergenerational knowledge and sharing; some researchers believe that deskilling has limited the opportunities for young people to be exposed to cooking, food preparation, and knowledge of culturally specific food from past generations (Caraher & Lang, 1999; Lang, 2001; Short, 2003). A greater understanding of this deskilling and the impact that food has on environmental issues has the potential to change personal relationships and with the food we consume, grow, and prepare.

Teachers are a key factor in creating a positive food environment and helping young students eat healthy foods (Mita, Gray, & Goodell, 2015). As illustrated below, some researchers have found a positive relationship between cooking and gardening, and food

knowledge/behaviour in education. Teaching students to cook has positively impacted students' behaviours toward fruit and vegetable consumption, nutritional knowledge, and healthy eating (Brown & Hermann, 2005; Meehan, Yeh, & Spark, 2008). Gardening is also used to improve FL, increasing fruit and vegetable consumption in students (Cutter & Smith, 2001; Hutchinson et al., 2015).

In addition to practical skills, students can better understand how the food system functions, including the impacts of food production and marketing on the environment and personal health (Stone, 2007). Food literacy could elucidate certain topics within the curriculum, such as poverty and equity (Barndt, 2012). Not only does food literacy impact students, it also creates positive relationships with community organizations, a step toward the Ontario Ministry of Education's goal of linking educators and communities. Such linkages can keep local food networks functioning and inspire ecological citizenship in individuals (Seyfang, 2006). Winne (2008 p. 189) believes that, while food education should be present in the school and home, a strong presence in the community, through community gardens or kitchens, can provide building blocks for community development or a place to train individuals in food knowledge.

Teacher candidates' understanding of food literacy (FL) is currently underexplored. This is concerning because teachers are one of many role models for student food choice (Mita et al., 2015) and as an understanding of food is developed and explored in the classroom, a student's information, access, and understanding of food can be impacted. Typically, food is approached in the Ontario education system through the lens of eating and preparation, with a strong emphasis on breakfast programs and healthy lunch initiatives (Sustain Ontario, 2013; Ontario Student Nutrition Program, 2016). While these are important aspects of food literacy, it is, as stated above, a limited scope. For example, food is connected to a variety of issues, not only the

global food trade system, but as a representation of history, political frameworks and policies, decolonization, effects on human health, and social justice of workers within the food system (Barndt, 2011). Yet dominance of health as a focus for food literacy with schools (healthy eating etc.) may point to the difficulty pre-service teachers have viewing sustainability and environment as part of it. I propose that it is important to elucidate the connection between food and EE, and their interdisciplinary relationship, to address this problem. Understanding the role of food in EE, and its connection to several issues (aside from just health) will enrich EE. Using food, a familiar concept already prevalent in schools, as a window to EE issues (Barndt, 2012) may provide an opportunity to integrate EE.

For this dissertation, I seek a more inclusive and extended definition of FL. Placing food literacy in education calls for a situated definition, within an environmental context, with cross-relationships to socio-cultural factors, food security, food skills and health (Cullen, Hatch, Martin, Higgins, & Sheppard, 2015). This conception is helpful for food literacy in an education context since it illustrates the necessity and practice of including food in a wider, integrated system of knowledge. I believe this wider scope helps to make connections for teachers in an integrated curriculum. I find Sumner's (2013) work the most resonating. When I teach food literacy to my students, I have always summed it up with her concept of learning to 'read the world through eating'. She depicts food as a pedagogical act that encompasses social and environmental aspects. She considers what can be learned from food starting from growth, to processing, to consumption but also includes what we learn from the act of eating (Sumner, 2013). It places a personal connection to one's own eating habits, their own education and learning process, as well as expands this idea of learning about, in and through what we eat on a daily basis.



Food literacy is most often studied from the standpoint of what skills and knowledge students acquire, not from a teacher or teacher candidate standpoint. Much like EE, FL is championed for including experiential, hands-on learning that is relevant to students' lives. For example, an intervention program that teaches food skills and food literacy, utilizing cooking workshops, curriculum and teachings by a dietician, was found to improve cooking skills and increase knowledge of agricultural and environmental practices in at-risk youth (Thomas & Irwin, 2011). This type of interventionist approach was found to be worthwhile for increasing knowledge and awareness of environmental and food issues (Thomas & Irwin, 2011) and could be similarly used for FL in pre-service programs.

One of the challenges of implementing FL is a teacher's willingness to explore food related topics, such as agriculture. For example, Knobloch (2008) found that teachers would explore food through the areas of agriculture and sustainability if they could see the value, and the fit, in their curriculum. If a topic was not considered an integral part of the curriculum, teachers would adopt it only if their own beliefs and attitudes motivated them to do so.

In Canada there have been no large-scale studies to investigate food literacy in pre-service education (Elsden-Clifton & Futter-Puati, 2015). Drawing upon the interest of schools as sites for food education, Elsdén-Clifton and Futter-Puati (2015) considered 126 pre-service teachers and their understanding of food in relation to defined *spaces* (health, sustainability, and a possible 'third space' that brought together health and sustainability in food education). The case study used pre-service curriculum documents and teacher reflections as data. One of the foci of their study was whether teacher candidates (TCs) were prepared to educate students on food in the areas of health and sustainability. They found that personal relationships with food informed teacher perceptions, and that while many were interested in this topic they required more

information to feel competent. Likewise, the inclusion of materials and lessons on agriculture, food and natural resources, often viewed as nonessential to the curriculum, took place only if teachers had personal experiences or beliefs about the topics (Knobloch, 2008). Despite making the connection between food and sustainability clear in the health curriculum, pre-service teachers continued to focus on health-only aspects of food, such as obesity, and rhetoric of good and bad food choices (p. 93) and struggled to expand their reflections to the link between sustainable practices and well-being (recycling, cleaner air) and cultural practices of food within families (Elsden-Clifton & Futter-Puati, 2015). Ultimately, it was proposed that more research needs to be done to change how food studies is taught to new teachers, particularly to challenge the discourses of obesity, health, and good and bad food (Elsden-Clifton & Futter-Puati, 2015).

## **Activism**

An activist is often described as someone who is a part of a group with a formal organizing principle; the group collectively tries to fix a problem through a series of actions (Piven & Cloward, 1978; Benford & Snow, 2000; Starr, 2010). For this study, I use this definition because the relationship between environmental issues and action is often a key component of environmental education (UNESCO, 1997; Stapp, et al., 1969). Traditionally, activism is defined by organization and collectivity, and if extensive enough, networks of organizations and activists can comprise a social movement. In relating FL and activism, it is important to address the tension regarding what counts as action on food issues. There is also a debate about the existence of a local food movement and its' relationship, if any, to social movements (Starr, 2010; Wekerle, 2004). Starr (2010) considers the parameters that would make food a social movement, and wonders what kinds of activities and actions count for making social change? This question arises because often food activism is viewed narrowly through a

consumptive lens. The relevance of consumptive practices, such as purchasing certain food to support change, is related to lifestyle movements. Lifestyle movements have been recognized as activism (Cherry, 2015; Haenfler, Johnson, & Jones, 2012; Queniart, 2008), although there is criticism of their focus on a consumerist perspective rather than environmental citizenship (Johnston, 2008).

Ontario government documents explain why activism and environmental justice should be part of today's classrooms to help create active citizens (Niblett, 2017). A critical dimension is to consider teachers as both subjects and agents of change, with their theories, values and assumptions about education finding their way into the classroom (Stevenson, 2007b). Being both an educator and activist may foster community connections that enrich student education; it also addresses one of the goals of policy documents, to create partnerships between the school and the local community. Hart and Nolan previously examined, "the myths that underpin our thought and practice in school systems", including teachers' beliefs and understanding (Hart & Nolan, p. 42). In other words, an understanding of TCs' experiences are especially important when designing new curriculum or thinking about ways teachers can integrate EE into their classroom.

**Activism and Teacher Identity.** For this study, teacher identity helps interpret how TCs think of themselves and their understanding of EE and FL. An identity is defined by how they see themselves and self-legitimate to others. Identities are defined by the traits, memberships (either social or personal), relationships and characteristics of a person; an identity orients in a certain time or space (based on present, or past; work, leisure) and signifies a meaningful lens to tell others what defines them (Oyserman, Elmore, & Smith, 2012). Even before the professional designation of 'teacher' is given, a teacher is thinking, reflecting and growing into that identity.

Part of this is critical reflection, looking inward and thinking about personal values and comparing these with other views (Blatt, 2015). Teachers define who they are by acquiring knowledge of self and their role as an educator, a process socially legitimated by others (Coldron & Smith, 1999 pp.712). A teachers' professional identity concerns itself with personal experiences and beliefs, and how these, in turn, reflect a "certain kind of teacher" (Luehmann, 2007 pp. 827).

This study utilizes teacher identity as a framework to consider how identifying, or refraining from identifying, as an activist affects some teachers' approaches to education. In a study of Quebec pre-service teachers, only a tentative description of teacher identity was articulated by graduating teachers and further research was called for (Beauchamp & Thomas, 2009; Thomas & Beauchamp, 2007). There is research on the notion of an ecological or environmental identity (Kempton & Holland, 2003; Thomashow, 1995), "all the different ways people construe themselves in relationship to the earth as manifested in personality, values, actions, and sense of self" says Thomashow (1995, p.3). Kempton and Holland (2003) interviewed environmental activists and proposed three stages in the development of an ecological identity: increased awareness of environmental issues, empowerment to act, and increasing community interaction. The framework of an environmental identity was applied to education, in a study by Blatt (2015). Secondary students and one teacher, involved in a science course, were interviewed regarding their ecological identities. Like the study by Kempton and Holland (2003), Blatt (2015) found that there was a desire to have a critical awareness of environmental issues, and that this awareness must be coupled with a belief that students can make a change (Blatt, 2015, p. 720). Environmental studies impacted student identity by eliciting behavioural change and increasing emotional response to environmental issues (Blatt, 2015, p.

723). Most studies focus on the impact of environmental learning from the perspective of students. This is relevant to my study, since at the time of inquiry, participants are in a transition. They are students, learning to be teachers. They are attending courses that will have an impact on their identity as environmental learners, as well as acting as a teacher in practicum. Their identity is developing via a number of factors including personal experiences, education courses, and work, i.e. their practicum experiences, while being a TC. Their work as a TC is where they encounter discourses of education, including EE, and how a good teacher acts.

**Difficulties of Activist Identity.** In this section the difficulties of being an activist and a teacher are explored. Sachs (2001) argues that dominant discourses in education have created two identities for teachers (activist and educator), and they are not always free to present both. However, it is possible for both identities to emerge within a democratic discourse, a topic addressed later. The experience of activism cannot be removed once teachers step into the classroom; and unfortunately, may lead to a teachers' environmental passion being viewed as problematic, extreme, or against proper education discourse (Robertson & Krugly-Smolka, 1997; Ellsworth, 2003; Barrett, 2006; Barrett, 2007). Teachers often refrain from language or action that may identify them as an activist. In a study of pre-service teachers passionate about the environment, it was found that they often feel isolated, and fear that expressing their activism may paint them in an unprofessional or unflattering light (Pedretti et. al., 2012). This disconnect, can be troubling for some teachers since these two identities are often hard to separate. The difficulty also affects how teachers approach environmental education. For this study, the relationship between identity as an activist and approach to environmental education is key. When 84 Ontario pre-service teachers, were surveyed (Gwekwerere, 2014, p. 206), they felt that knowledge of the environment came from their own actions and activism, not school. Teachers

especially in pre-service, often feel they do not have the authority or ability to exercise independent judgment when it comes to the mandated provincial curriculum (Klaus & Jaritz, 1996). This may explain why Ontario pre-service teachers in the study by Gwekwerere (2014) expressed only an average desire to act on environmental issues. Perhaps, they already recognized the institutional constraints of being an environmental educator.

These results suggest that developing an identity as an environmental educator through the pre-service program is a challenge. Teacher candidates require skills and knowledge, but they also need support to develop their identity. Reconciling their teacher and activist identities becomes even more difficult when considering the fear associated with them. Teachers have long expressed concern about being viewed as a maverick (Jickling, 2003). Addressing the value of being an activist teacher at the pre-service level may provide new teachers an opportunity to express their real selves and challenge the 'norm' in education (Luehman, 2007). Education, and EE, is not value free or apolitical. There is debate, disagreement, and discussion on how to address environmental problems, couched in politics (Hursha, Henderson, & Greenwood, 2015). Values cannot be avoided in teaching, and instead of making claims that educators can withhold their values, they should be prepared to address them (Sutrop, 2015). Looking at how personal experiences and values impact educators is one approach to redefining the link between activism and education. One Canadian university instituted a program called Global Communities, a teacher education program focusing broadly on environmental and social awareness, modelling these approaches during practicum and providing a variety of field work and activities (Alsop, Diplo, Zandvliet, 2007). One student suggested the study helped him make connections between his own environmental passion and how he/she would connect this passion to teaching:

[My time] with the Global Communities enriched my life. Not only was I able to focus on the environment, but also learn how to best teach my students. Being able to foster an environmental ethic in my students is important to me because if we do not realize the Earth's balance, then what type of world will our students be living on in 75 years? I have always felt passionate about the environment. Global Communities was a focus point, where I learned how to best enrich the lives of my students through nature - Reflections of a student teacher enrolled in the module (Alsop, Dippo, & Zandvliet, 2007, p. 214).

This experience was revealing for the students but also for the instructors as it inspired new questions and new ways of thinking; the instructors were hopeful that this experience would allow new teachers to further develop their identity as educators and to have an impact where they teach (Alsop, Dippo, & Zandvliet, 2007).

**Conditions that support activism.** Beane and Apple (1995) have suggested that a democratic approach to education, where teachers are involved in curriculum and policy creation, can help empower teachers to identify comfortably as both activists and teachers; this could also be applied early on to pre-service teachers (Beane & Apple, 1995). These conditions may help pre-service teachers create a community of like-minded peers and supporters, thus facilitating respect and collaboration (Sachs, 2001), meaning and identity formation, and impact the way they teach (Melville, Bartley, & Weinburgh, 2012). Additionally, reconceiving the approach to teacher education to include a social and environmental context may help pre-service teachers feel supported to express their activist identities.

For an activist identity to be accepted, Sachs (2001) posits that a school must be democratic. The conditions of a democratic school, according to Beane and Apple (1995), are

the following: 1) The open flow of ideas, regardless of their popularity, that enables people to be as fully informed as possible; 2) Faith in the individual and collective capacity of people to create possibilities for resolving problems; 3) The use of critical reflection and analysis to evaluate ideas, problems and policies; 4) Concern for the welfare of others and ‘the common good’; 5) Concern for the dignity and rights of individuals and minorities; 6) An understanding that democracy is not so much an ‘ideal’ to be pursued as an ‘idealized’ set of values that we must live and that must guide our life as people; and 7) The organization of social institutions to promote and extend the democratic way of life. Democratic conditions also create the opportunity for communities of practice, where teachers can express their activist identity and debate the policies, inequities, and definitions of justice and pedagogy (Sachs, 2001; Sachs, 2000). Communities of practice arise out of the ability to share personal narratives in public; this sharing allows the connection with other professionals and the constant engagement/ re-engagement with issues important to that community. Communities of practice facilitate values of respect, reciprocity, and collaboration and maintain the context and conditions for teacher activists (Sachs, 2001).

A community of practice, or common culture, recognizes that while educators are working towards similar goals, there are differences in knowledge and skill level (Sachs, 2001). Creation of what Stevenson (2007b) calls a knowledge/discourse/learning community would enhance teacher knowledge or a community groups’ willingness to let students control their own explorations. A recent study analyzed the importance of communities of practice amongst pre-service teachers in an EE curriculum – they found that focused creation and reflection of EE content within the pre-service curriculum, via a community of practice helped increase efficacy and beliefs of environmental content (Richardson, Byrne & Liang, 2018). For this study, this



access includes the creation of a learning community where the activist/teachers reflect on where they came from, and where they are going, and how the relationships of activist and teacher shape the way they engage in EE practice.

### **Relating Environmental Education, Food Literacy and Activism**

Food literacy is a part of EE – many topics that are food related intertwine with frameworks of EE. Food literacy can also be viewed as an approach to EE, as it is often identified as a window into it. Sumner (2008) provides many examples of how food, environment and education are related. Food is a vehicle for environmental awareness, can develop ecological literacy, elicit questions about sustainability, and involves teaching, celebration, and social learning (Sumner, 2008). Although linked, for this study, they are treated as separate concepts for a few reasons. Firstly, FL is relatively new and there is no agreed upon definition within the literature. At school (primary and secondary) EE and FL can be presented as distinct components of the curriculum. I am careful in the study not to impose notions of FL on TCs. To satisfy the research questions, I wanted to discover how TCs not only defined these terms, but also how they understood a relationship (if any) between them. FL can be used as a vehicle for teaching EE because food is familiar to everyone on some level.

Activism relates to EE and FL because these subjects may be the focus of an activist's passion and work. Their goal may be to learn more about it, provide education and information to others, and engage in some activity that makes a positive difference. Within education, the relationship between activism and EE/FL becomes more complex. Education is a large component of being an activist – spreading awareness and knowledge of a topic – but this education typically occurs in an informal venue. As previously stated, pre-service teachers and

teachers struggle with identifying as an activist due to fear of being viewed as a maverick teacher and wanting to maintain an apolitical image (Ellsworth, 2003; Barrett, Ford, & James, 2010).

This study aims to address the relationship between activist and teacher identity and seeks ways to make these identities more comfortable in the classroom.

### **Inspiration for the study from personal experience**

By providing the relevant literature I give context to the study. It is also important to explain the relevance of the research to my firsthand experiences. This study was inspired by reflections on my own B.Ed. experience as an intermediate/senior TC from 2006-2007 at Queen's University. My teachable subjects were Biology and English Literature. In a study utilizing a social constructivist lens I consider setting aside my own meaning-making, and experiences aside to focus on the participants. This is important because I share many experiences, both personal and professional, that may relate to those going through a B.Ed program. I will provide that reflection here. To set aside my experiences, I considered the following questions: what does it mean to be an environmental educator? What is the relationship between my own experience and professional identity and how I approach environmental education?

My interest in the relationship between food literacy, environmental education, and the beliefs and attitudes of teacher candidates comes from a few sources. The first is my identity as a teacher. I consider 'teacher' to be an ever-evolving term and I identify one aspect of my job, identity and personal life as a 'teacher'. I have a bachelor's degree in education that defines me in the traditional sense as a teacher. I also do my small part in educating university students by working as a teaching assistant, offering constructive feedback on assignments, and mentoring

students as they move through the university system. I have also acted as a course director of an environmental education course and currently a pre-service science education course. When thinking about the definition of a teacher, my professional training comes to mind.

Looking back on my B.Ed. experience, I am surprised and dismayed at the lack of exposure to, and discussion of, the environment. To be accepted into the program, I was expected to have a variety of experiences - volunteer work, activism, and teaching - but no one seemed to value these experiences once I began my teacher education. The absence of environmental education in my courses inspired me to look at how things might have changed in the current pre-service education system.

My experience as an environmental educator, however, does not solely come from professional training. During university, I worked for several years as an outdoor educator at Ojibway Nature Centre. I worked behind the scenes creating hands-on curricula and public awareness campaigns. I trekked through the forest, the pond and the prairie with visiting students and campers. I am not what most people would consider an 'outdoors' person, and despite the bug bites (chiggers are especially painful) and having to catch and tag snakes, it was by far my most beloved job. Being outdoors, exploring unfamiliar territory with children who mainly play video games, was a defining experience. My work with food activists, creating workshops and delving deeply into their personal narratives of food meaning, was similarly powerful. Consistent across these experiences is the notion that environmental issues – endangered species, stewardship, nature, food, poverty – are issues that bond people. As a mother, my interest in environmental education and food literacy has only intensified. Experiencing the world 'for the first time' through my sons' eyes has been instrumental in how I think about environment. We spend most our time outside, watering our herb garden, playing at the park, on walking trails, and

snail hunting after or during a rainfall. I am confronted with choices that bring a new responsibility, particularly about food. Not only does it matter what we eat as a family, it matters how we prepare it. I make a concerted effort to involve my children in our food choices. They help me cut and clean herbs, mix, stir and pour. My oldest chooses food at the market and asks questions about where food grows and why carrots come in so many colours. Thinking about how to inform, educate and inspire an interest in someone so young is a responsibility I take seriously, but also thoroughly enjoy. These experiences inform how I approach education, how I formulate my own philosophies about sustainability issues, and why this research is of interest.

These experiences, and my understanding of environment as an interdisciplinary subject related to social justice, food and learning, helped me identify the large gaps in my own understanding. I also identify missed opportunities to foster community connections and to share ideas around FL/EE with fellow teachers. This account is meant to frame my thoughts and impressions prior to beginning my study. Not only is it an important part of the methodological process, it provides another layer of personal experience. Despite my interests and developing experiences, it took me a very long time to make important connections between my formal education and my personal work. This identity is still developing as an academic educator and mother. A closer look at the current state of TCs in Ontario will help inform my research questions, of what it means to be an environmental activist and teacher in a school system wanting to integrate EE. 1) How do TCs define and understand the terms and concepts of EE, FL, and activism? 2) To what extent does being an activist help TCs understand and integrate environmental education? 3) How does being an activist and a teacher impact the development of a professional identity? 4) What potential does FL have as an integrative tool in the curriculum (Barndt, 2012; Sumner, 2013). 5) What do TCs understand about FL? To what extent do they

learn about this concept in the pre-service education program? How can the pre-service program utilize FL as an integrative tool in the curriculum? 6) In what ways can the experience of activist TCs inform changes in the pre-service education curriculum to better address the goal of integrating EE? And lastly, 7) Are TCs prepared to be environmental educators? If so, where does this preparation come from? and where can gaps be addressed in the pre-service curriculum?

In the next Chapter the research methodology will be provided, including an outline of the theoretical approach, study design, and participant information.

## **Chapter 3**

### **Methodology**

In this chapter the philosophical basis for my methodology and approach to data analysis will be provided. A description of the research site, i.e. where the participants study and interact with one another, is also included. A brief discussion of specific considerations is provided such as the inclusion criteria for the study and an explanation of unforeseen events that occurred during the study.

#### **Theoretical Framework for Methodology**

A Teacher identity framework can help explain how teachers relate to their students and teach their subject area. This research explores the relationship between identity and how it impacts TCs definition of environmental education (EE), food literacy (FL), and activism, and in turn how these concepts shape their identity as developing teachers. Often teachers whose identity includes environmentalist or activist component fear being thought of as unprofessional in the workplace (Barrett, 2017; Jickling, 2003; Robertson & Krugly - Smolska, 1997).

This is a qualitative study, grounded in the experiences of participants (13 TCs) who are seeking to reconcile their personal and professional identities as educators, environmental educators, and an activist. This methodology posits that the researcher cannot be entirely detached from presuppositions about the research and should not pretend otherwise – I am an educator, this is a personal issue of exploration for me and I have my own experiences with being a teacher candidate, caring about environmental issues, and share experiences of participants. I therefore sought to create space for participants' experiences by reflecting on my own experiences and setting them aside. I can't pretend those experiences didn't happen, so this

methodology allows for space and acknowledgment of this fact. It also allows me to bracket and set aside those experiences to seek new understandings, based on the experiences of others, in a different time and place, experience the same phenomena.

My epistemology – my theory of knowledge – is that we derive meaning from our everyday experiences, our lived experiences, and that these experiences shape our identity and how we view the world, which is in line with constructivism. To begin with this philosophical basis, a researcher selects a phenomenon or common event to examine, reflects on major themes, writes an account using the voices of the participants, and examines that account (Creswell, 2007). To uphold a constructivist approach, the researcher pays special attention to their close connection to the subject of study, and develops subjective meanings of experiences, knowing that these meanings are varied and multiple. My meaning and experiences, even though they are related to participants, are separate. My position as an environmental educator interested in food literacy has me constantly looking for meaning in food and the environment, both academically and personally.

Additionally, the views of participants are honoured as complex and authentic, informed by places and experiences of past and present (Creswell, 2013; Denzin & Lincoln, 2011). To employ a social constructivist framework, a researcher does not set out to find support for a specific theoretical framework per se but develops an understanding of the datum from a participant's point of view (Crotty, 1998). When interviewing participants, the questions should be open-ended and broad so that the meanings of situations are constructed by the participants themselves, not forced or guided by the researcher. Overall, this guiding framework is meant to make meaning or make sense of meanings others have about situations (Creswell, 2013;

Moustakas, 1994). In this study, as indicated I have reflected upon, and set aside my own experiences so the voices of the participant can be privileged above my own.

Creswell (2013) offers a way to understand how the theory of social constructivism relates to a researcher's own philosophical assumptions and beliefs; there is no single reality, but many realities that are constructed through lived experiences and interactions with others and these experiences, while perceptions, are real and valid. TCs in this study entered the education program with existing beliefs, experiences and ideas about EE. These experiences have arisen through passion, interest, volunteerism or activism. Each day in the education program, they construct meaning based on their past experiences, their beliefs, and their interactions with their peers, professors, mentor teachers and students. In terms of philosophical beliefs, a social constructivist approach acknowledges epistemological beliefs as reality co-constructed between the researcher and the participant, shaped by individual experiences. The role of values (axiological) is honoured and negotiated among individuals. In terms of method, the data is presented in a literary style, using inductive methods of emergent ideas. Data is collected through a variety of methods, but can typically include interviewing, observing, or analysis of text (Creswell, 2013). For this study, participants were interviewed. During the interview, I took notes and questions and returned to those at the end of the interview. After transcription, the interviews were given to participants for review to check for accuracy in details of their statements and to add any impressions or details that had arisen since we interviewed. No new notations were added by participants but a few details, such as names of places were clarified.

### **Research Site**

The research was conducted on site at an Ontario University campus, referred to in this study as 'the University' or by the pseudonym Banting University. Interviews were scheduled



when students were on campus in classes, rather than when they were in practicum blocks at host schools. Interviews were conducted in private rooms booked by the researcher.

### **Description of the University's Education Program**

The University offers a bachelor's degree in education via two routes: one is a concurrent option and the second is consecutive. Students in the concurrent option have enrolled either at the beginning or early phase of their undergraduate degree; students are already accepted in the Bachelor of Education program in addition to their chosen undergraduate degree. Consecutive students must complete an undergraduate degree first, and then be accepted into the Bachelor of Education program.

At the time when this research was conducted, both options required an extended year of training, during which students take education courses and weeks of practicum at their host schools. A practicum is a placement in a school or schools where a TC is supervised in the practical application of learning. It is often called 'practice' teaching. During a practicum, TCs are often mentored by a teacher in the community within their teachable subject. The supervision is often carried out by a classroom teacher; the degree of responsibility during a practicum placement varies but may include observation, exposure to various teaching methodologies, and the creation and teaching of their own lessons. It can involve 2-3 placements for a few days a week each. These placements can occur at various schools. There are also intensive practicum blocks during the year. The concurrent student completes practicum experience and education-related courses throughout their undergraduate degree.

**Ontario teacher candidates.** The study of teacher education proposes sociocultural practices shape identity and, in turn, affects teacher practice and pedagogy, professional

development and curriculum; this development is multifaceted and not always rational (Menard-Warwick, 2008, 2011; Morgan, 2004; Tsui, 2007; Varghese et al., 2005). A review of over 40 case studies involving teacher candidates concluded that TCs are in a developmental stage of their teaching where they aim to accomplish three tasks: 1) to acquire knowledge of their pupils; 2) to utilize that knowledge to modify and reconstruct their personal identity of ‘teacher’; and 3) to develop routines and classroom management strategies (Kagan, 1992). The second area is the most interesting to me since it includes how teacher candidates define themselves as educators and what impact their activist experience has on this definition. In this developmental phase, reflection is a valuable tool used to change and reconsider teacher identity (Kagan, 1992) and what it means to be an environmental educator. Teacher identity forms in relation to sociocultural conditions and discourse that exist in their daily practices and in turn, their own emotional responses to these discourses (Varghese, Morgan, Johnston, & Johnson, 2005). In this study, TCs were given the opportunity to think, reflect and reconsider how their firsthand experiences impact their development as a teacher. They were able to respond to the rhetoric and discourses of environmental education and what it means to be an activist/teacher. They recounted the language, emotion and responses they had to expressing this identity. In this way, this study may have an impact on how TCs reconstruct their identity and further incorporate EE into their teaching.

## **Recruitment**

Upon ethics approval from the University, recruitment of participants began. While a larger participant pool would be required for statistical significance, a qualitative paradigm typically includes 5-25 participants (Polkinghorne, 1989). The participants were a random convenience sample, recruited via email list serves, social media outlets and speaking in person

with three classes. Eventually, when interest tapered off, I employed a snowball technique. I contacted participants and asked that they pass along my contact information to other students. Once I reached saturation in my data my committee and I decided I could conclude recruitment at 13 participants and those 13 participants fulfilled the study.

**Justification of recruitment and inclusion criteria.** When I recruited individuals, I asked that they be in a Faculty of Education undertaking a concurrent or consecutive education degree and have a background, passion, or interest in environmental issues. I aimed to include participants active in environmentally-focused projects within the past six months. I had originally planned on excluding those that did not self-identify as an activist. I had done previous studies that explored the definition of activism in community organizing and self-identification was the marker to qualify as an activist. In my study, however, it became apparent that the terms activism and education had an interesting, intertwined relationship that was worth exploring. I chose to expand my participants to include those passionate about the environment and who sought changes via a wide range of actions in volunteer work, activism, or education. Ultimately, I included participants who do not identify as activist. This allowed me to explore the reasons why they shied away from that term and helped develop the research question “how would you define an activist?” In the recruitment phase, I simply asked if people were enrolled in the education department at the university (i.e., a TC) and if they were active, passionate, or interested in environmental issues. I did not focus on food issues because I purposefully did not want to limit participation to those already deeply committed to food system change. I anticipated that students who work on environmental issues will, at a minimum, touch on food issues through community work, poverty issues, women’s and children’s rights, or urban planning. They may not, however, say “I am a food activist”. After some discussion with my

supervisors, this was deemed an appropriate approach. Each participant was asked about their understanding and relationship with activism and food issues, so any connection would be illustrated during the interview. This approach was successful, as there were many connections made either explicitly by the participants themselves or through my own analysis. Since the goal of the Ontario Ministry of Education is integration across the curriculum, a wide range of food work by participants in any teaching subject or level would only help with investigating food as an avenue to curriculum integration.

**Recruitment process.** Recruitment took place over the course of three months, via three main routes: i) email, ii) class visits, and iii) social media. Upon ethics approval (November 17<sup>th</sup> 2014) a first round of recruitment emails was sent to the Faculty of Education email list (Appendix A, Email for in-class and Listserve Recruitment, Email 1). This email reached all undergraduates in education including concurrent and consecutive students. I spoke, in person, with education classes. Individual students, who indicated they were interested in learning more about the study, were contacted (Appendix A, Email 2). An email was also sent via the student Facebook page (Appendix A, Email 1). Once school resumed for the Winter semester, the same recruitment email was resent to the Faculty of Education mailing list (January 2, 2015). Upon permission of my supervisor, I also utilized personal contacts to recruit participants from a list of students I taught in a previous semester using the same recruitment documents. I reiterated that participation in the study had no bearing on past or future relationships between myself and students, including evaluations received during my time as course director. It is important to note that at the time of the email, marks had already been submitted and approved. They could not be changed unless the student underwent a review process. Two of my students became participants

via this process. Recruitment occurred simultaneously with data collection and concluded once data saturation was achieved.

### **Description of participants**

Table 1 provides the participants' candidate stream. There were equal numbers of TCs in primary/junior and intermediate/senior. In total, 7 TCs were in the concurrent stream and 6 were in the consecutive stream. Table 2 provides details of their demographic information including their teachable subject (if applicable – only junior intermediate and intermediate senior candidates have subject specific criteria). TCs were also asked to identify if they were an activist, and if so, in what area would their activist activities situate. A total of 7 TCs identified as an environmental activist. There were 2 TCs that identified as a food activist. These results, while illustrated by numbers in Tables 1 and 2 serve an organizational purpose. The details, as well as a discussion of why/why not TCs identify and how their teachable subject or demographic information affects their experience, will be discussed in the results and discussion sections. For the purpose of the level of certification, I will provide a brief explanation. Within Ontario, the Primary/Junior grades are considered Junior Kindergarten to grade 6. A junior/intermediate teacher would be certified to teach grades 4 to 6, and grades 7-10 in a single subject. Lastly, an intermediate senior teacher is qualified in two subject areas, in grades 7-12.

**Table 1***Teacher Candidates Stream and Level of Certification*

Stream	Level of certification			Total
	Primary/ Junior	Junior/ Intermediate	Intermediate/ Senior	
Concurrent	2	1	4	7
Consecutive	4	0	2	6

**Table 2***Participant Demographic Information, Education and Activism Details*

Participant ID	Age	Sex	Level of Certification	Stream	Activist Identification		Teachable Subject
					Environment	Food	
Alex	19	F	I/S	Concurrent	Y	N	History
Thea	19	F	P/J	Concurrent	N	N	n/a
Casey	28	F	P/J	Consecutive	Y	Y	n/a
Diana	20	F	J/I	Concurrent	Y	N	English
Ella	20	F	I/S	Concurrent	Y	N	Environment/French
Finn	28	F	I/S	Consecutive	N	N	Geography/ Environmental
Grace	27	F	I/S	Consecutive	N	Y	French/German
Holly	43	F	P/J	Concurrent	N	N	n/a
Isabelle	23	F	P/J	Consecutive	N	N	n/a
Sam	X <sup>1</sup>	F	P/J	Consecutive	Y	N	n/a
Smith	24	M	I/S	Concurrent	Y	N	Drama/History
Kim	1	F	I/S	Concurrent	Y	N	Geography/English
Beth	0	F	P/J	Consecutive	N	N	n/a

Footnote<sup>1</sup>Participant did not provide age

Transcripts were anonymized using participant codes (P1, P2 etc.); to make analysis more readable, participants were assigned a pseudonym. Teacher candidates were involved in a range of activist, volunteer, education, and passion work. While many of these endeavours are discussed in the analysis of the data, a list is provided here for background information. Details that may reveal specific locations and impact anonymity have been removed. The description of participants' involvement in the community includes:

- Volunteer for Local Centre for Conservation
- Member of Cycle City
- Worked to develop initiative to change food policy for school lunch
- Outdoor educator
- Educator at Public library
- Volunteer at Food organization
- Volunteer and advocate for Women' shelter
- Takes part in gardening initiatives
- Developed questionnaire to link health resources with new immigrants
- Developed curriculum outdoor education
- Work at a Co-op (Sustainable Café)
- Member of Katimavik
- Co-chair of Roots and Shoots, Jane Goodall Foundation
- Delivered Environmental Education presentations in class
- Member of Jamie Oliver's food campaign
- Attended marches against Monsanto
- Educated public on conservation and women's rights



- Volunteer for public information, including presenting documentaries on food issues
- Worked to support those against Line 9
- Worked at YMCA
- Member of EcoClub (an EcoSchool initiative)
- Organizer of foodbank in community
- Teacher of ESL (English as a second language) support at international school
- Early childhood educator

### **Interview Procedure**

The method for this inquiry were to interview, at two different points in the program, as well as provide the transcripts to participants for ongoing discussion and reflection. There was some discussion of relevant course work (e.g. I was shown a presentation, as well as discussed assignments). I did not observe the participants during their practicum. The reason for excluding observation as a method of inquiry was due to the fact that there was little EE that took place within the classroom. The experiences that were being shared, in terms of activism and EE/FL were past events and extracurricular endeavours that informed the current experiences of being a TC. Therefore, interviews and reflection were deemed to be the best fit to explore the phenomenon. The first interviews took place between November 2014 and February 2015. The follow-up interviews took place in March and April, 2015. Once I was contacted by interested participants, I arranged a time to meet and booked a private room at the university campus to conduct the interview. Upon meeting, each participant was given a consent form (Appendix B) and a demographic questionnaire, followed by an interview (Appendix C: Activist Background and Defining Key Terms). I went over the consent form with them and allowed them time to seek clarification. I also reiterated the need to schedule a follow up interview. I explained that a

follow-up interview (Appendix D) gave students time to have significant experience ‘being a teacher candidate’ both within the university and within their respective host schools.

Additionally, faculties of education often have a staggered schedule (with university classroom time and host classroom time) spread out over the two semesters. Thus, waiting until the ‘end’ of their teacher education would maximize their experience from which to draw reflections. I encouraged students to email me if they had reflections or insights to share on these new experiences in advance of the follow-up interview, though no participant did so.

**Interview one.** All first interviews were conducted face-to-face on campus, though the option to conduct them via Skype was offered. This method was chosen because I believed it would provide rich, in-depth information on my research questions. Holstein & Gubrium (1995) suggest that active interviews provide “an occasion for purposefully animated participants to construct versions of reality interactionally rather than merely purvey data” (p. 14). Given my own experiences as a Faculty of Education alumnus and an environmental educator within the community, I felt that the active interview would be particularly well-suited to the project. Knowledge would be co-constructed by an equal partnership between the interviewer (me) and respondent. The initial interviews lasted from 30 to over 60 minutes. I followed the lead of the participant, allowing them to speak freely. I intentionally allowed pauses before my next comment or question. This allowed participants to elaborate, without being interrupted by me or influenced by my next questions. I intentionally talked less and listened more. If I felt I needed clarification, I simply took a brief note (mostly a key word) to remind myself to ask once the conversation had ended.

**Follow-up interview.** Due to unforeseen circumstances (I don’t elaborate on them to protect the anonymity of the institution), follow up interviews were shorter than expected. The

follow up interviews (Appendix D) were conducted in three ways: i) face-to-face on campus, ii) on the phone, or iii) via email. At each step of the interview process, participants were reminded of their right to decline a line of questioning or their right to withdraw at any time from the study without consequence. Because of these institutional circumstances, not all participants completed a follow-up interview. The participants who completed the follow-up interview included: Thea, Casey, Diana, Finn, Holly, Kim and Sam (Table 2). These were conducted either face-to-face (Thea), by phone (Casey, Holly and Finn) or in writing (Kim, Diana and Sam). Although I made repeated attempts to get in touch with Ella, Grace, Isabelle, Smith and Beth, they ultimately did not complete a follow-up interview. The follow-up interview was always meant to allow TCs to gain more time and experience in the program, and in turn, be able to elaborate on the process in their interview. Given that the strike did not allow TCs to gain much more time in the program or practicum, I do not see this as detrimental to my data.

### **Ethical Considerations**

While I believe this study presented negligible risk to participants, anonymity is always important. Participants were asked to think deeply and critically about firsthand experiences. They were also asked to comment on current academic situations/classroom experiences. All data was anonymized in print and audio, using a participant code such as P1, P2 etc. After analysis, I included pseudonyms to make the text more readable. Identifying information was left out of the transcript. No names were used during interviews and all interviews were done in a private location.

### **Approach to Data Analysis**

The researcher began the study with a full description of their own experience, and sets it, to put the focus on the participant's experience and meanings. The interviews focus on

answering two main questions: 1) What have you experienced via the phenomenon? 2) What contexts or situation have typically influenced your experiences of the phenomenon (Moustakas, 1994; Creswell, 2013). Next, a list of significant statements is developed; these statements from the transcripts are viewed as equal in significance and elaborate how individuals experience the world in their given situation. They are non-repetitive and non-overlapping (Holstein & Gubrium, 1995). I found Creswell's (2007, 2017) qualitative approach to analysis applicable to education research. Creswell (2017) offers the following steps:

1. describes my own personal experiences with the experience and set it aside
2. develop a list of significant statements,
3. group the significant statements into themes,
4. write a narrative description of what participants experienced including quotes
5. place these descriptions in context of how they happened,
6. and write a composite description of the phenomenon including both textural and structural descriptions (the essence of the experience – the what and how).

Using Creswell's (2007) approach, themes based on significant statements were formed by grouping; these themes are common among all participants. This allowed relationships and patterns to emerge. The researcher considered each theme individually and writes a description of what the participants have experienced; this includes verbatim examples from the transcripts. Keeping in mind validity, a rich, descriptive narrative of what and how the participant experiences the event/situation was provided. Creswell (2007) also provides a template that I

used for coding the datum. These themes will provide a backbone for a description that presents the essence of the participants' experiences.

I transcribed each audio file verbatim. I also compiled a chart that anonymizes and organizes demographic information for possible comparison purposes or to include in participant profiles where relevant. I used NVivo, a qualitative analysis software, to code my data. NVivo (version 10) was helpful because it organized the data using tags or codes. I could search within my data efficiently. As analysis progressed the organization of NVivo made it possible to fine tune my themes for greater specificity. The codes and their frequency are provided in Appendix E, "NVivo Transcript Codes."

### **Establishing Validity**

In any research, it is imperative to determine validity of data and resulting interpretations. Validity is the accuracy of the account. For qualitative study that upholds a constructivist ideology, the participants' reality, and the meaning they make of social phenomena needs to be credible, and valid, to them (Schwandt, 1997). For this study, I interviewed 13 different TCs (most at 2 different points) about a single type of experience. Creswell and Miller (2000) suggest that qualitative researchers use many lenses, that unlike quantitative research it is not based on standard measures or scores but is determined by the research and those who participate in or review the study. Therefore, I used member checking as a way to ensure accuracy and validity (Neuman, 2006). Like social constructivism, the qualitative research outcome assumes that reality "is what participants perceive it to be" (Creswell & Miller, 2000). To use the lens of the participants, I provided them with the verbatim transcript as well as my notes taken upon reading the transcripts several times. This allowed participants to not only verify the text but also to clarify any meaning of their experience. Participants indicated that their experiences were

captured accurately, with only a few participants clarifying some minor details of their transcripts (such as spelling and timeline details of their past experiences).

One way to determine validity, used by constructivist theorists, is to use the lens of the researcher to disconfirm evidence. Disconfirming evidence is like triangulation; it is when researchers search for disconfirming or negative evidence (Miles & Huberman, 1994). First, I established the preliminary themes or categories from my own data (interviews), then searched through the data for confirming or disconfirming themes. Disconfirming data should normally not outweigh confirming, but when using a experiences of participants this is an indication of the complexity of the situation and conforms to the theory that there are multiple realities and ways of knowing (Creswell & Miller, 2000). Disconfirming evidence also helps to create more nuanced interpretations. While there was not a lot of disconfirming evidence present in the results, there were a few narratives that did identify as an activist and teacher. This is atypical according to the literature for most teachers. While most participants did not comfortably identify with this term and struggled to find a relationship in their identity as a teacher and activist, a few participants did identify as an activist and teacher.

After data collection, analysis and establishment of validity the writing process began. In this study the experiences, perceptions and stories of the participants are the focus. What follows are the experiences of the TCs in this study, and their personal views on environmental education, food literacy and how these definitions and tensions are related to their own activist experiences. There are of course limitations to interpretivism; Shi (2011) explored some of the limitations to doing a phenomenological study in education. What is relevant to this study would be the difficulty in accurately representing the voices of the participants. While the entire interview is coded for themes, the researcher is ultimately making the decision of how to analyse

the themes (i.e. name them) and which quotes to emphasis in the written description. While a careful, thorough analysis of participants' words was conducted, the onus is still on the researcher. To prevent any bias, the transcripts were given to participants during the process, as well as the higher-level codes. Lastly, as Shi (2011) suggests there is some debate about the influence of the researcher's own personal experience on those of the participants.

## Chapter 4

### Teacher Candidates' Stories: How Definitions and Experiences Connect to Teaching Identities

#### Introduction

Relaying the experience and understanding of 13 teacher candidates (TCs) is a large undertaking. This study aims to make sense of each experience as “what participants perceive it to be” (Creswell & Miller, 2000). I have written about the views of TCs in relation to their lived experiences. By allowing them to tell their stories, and by giving them an opportunity to reflect and correct any of my interpretations, I stayed true to their voices. To do this, I considered the different sites that impacted their development as educators. I knew that as a B.Ed. student myself, I went into the program with my own set of experiences and beliefs, which were also impacted by the site of the university and my placements. At each of these sites, I had meaningful encounters with others and those encounters shaped the way I understood and perceived things. For the discussion and analysis of the data in all the chapters TCs experiences will be considered in three areas:

- i) Their ‘personal history’ (i.e. the activist experience, and personal definitions of terms)
- ii) Their placement experience (either in the community or in the school practicum)
- iii) Their experience at the University (i.e. as students in the education program)

The narrative of the analysis is grouped by these themes. There is no separation from the first interview and the follow up interviews for several reasons. The first reason is that the follow-up interviews were always intended to serve as a form of clarification for participants and to allow them time to develop more experiences and relay those experiences to the researcher.



The questions in the follow-up interviews were the same as the first, although some were reworded given the context.

Teaching is a reflexive exercise and learning to teach relies on multiple experiences that, in turn, shape how teachers think and act. In a case study of Canadian teachers, it was found that reflection and discussion occur between university education professors, teacher candidates and placement mentor teachers (MTs) and this was vital to support new teachers and impact teacher education (Mueller & Skamp, 2003). Ultimately, the meanings derived from these experiences, and the interactions between them, may help identify what supports are needed for TCs to be effective environmental educators. Themes that emerged from the data, and therefore, the experience of participants, are related to broader areas of teaching, activism, barriers to environmental education (EE), and EE definitions.

### **Summary of identification**

Overall, I found that more concurrent students in secondary stream identified as activists. The definition of activist varied for each and I purposefully did not put constraints on how these parameters were met. This allowed the reasons for this identification to remain authentic to TCs. Of the four concurrent secondary TCs, all identified as an activist – environment or food. There was one concurrent Junior and intermediate stream (J/I) TC in the study, and she also identified as an environmental activist. When looking at the Primary (P/J) stream, there were two concurrent primary TCs in the study and neither of them identified as an environmental or food activist.

The I/S consecutive stream had two participants; neither identified as an environmental activist but one did identify specifically as a food activist. Of the four P/J consecutive TCs, one

identified as an environmental activist, and another identified as both a food /environmental activist.

Keeping in mind that primary stream does not have a teachable subject, there were six participants in the study with a specific teachable area. There were two participants who had “environment” as one of their teachable subjects. Only one of these participants identified as being an activist (in the secondary concurrent stream) with the teachable subjects of Environment and French. The other participant had Environment /Geography as her teachable subject but did not identify as an activist. Based on this information and the small sample size, I cannot identify patterns regarding how teachable subject affects activist identification. For example, just because someone chose ‘environment’ as their subject teachable, one cannot say that they are likely to be an environmental activist based on this study. There have been studies suggesting a correlation between environmental action and commitment to teaching EE, but such patterns were not indicated in my study. One study of over 700 pre-service teachers in Israel found a high correlation between environmental activism and environmental behaviour; they also determined that a high level of environmental commitment meant that pre-service teachers had a wide range of experiences, actions, awareness and skills (Pe’er, Goldman & Yavetz, 2007). A high level of commitment, they hypothesized, is needed to overcome structural, conceptual and logistical barriers. Similarly, beliefs and values are impacted by life events; a study of 232 environmental educators found that environmental life experiences impacted the commitment to overcome barriers to teaching EE (Palmer, 1993). The connection between life events and environmental attitudes in the research is the reason for choosing a constructivist ideology. This approach values the experiences of participants and considers what is occurring in their present

and past, in this case environmental activism and teaching experiences, and seeks to make sense of those experiences together.

Ultimately, I found that in my TC sample, there was no common definition of activism, or being an activist. Participants were asked the question “Do you identify as an activist?” on both the demographic survey and within the interview. TCs offered a variety of terms and conditions that were necessary to define activism, which will be discussed later in detail. Reasons for not identifying as an activist are also discussed. TCs often did not believe integrating their activist work or passion for environmental issues in their teaching was actually activism.

In total, 7 participants identified as an activist (Alex, Casey, Diana, Ella, Smith, Sam and Kim). Only 2 TCs (Casey and Grace) believed their work and passion focused enough on food to use the term “food activist”.

### **How Teacher Candidates Frame the Relationship Between Activism and Teaching**

TCs were asked how they define activism and if they identify with that term. I considered if the stream of education (primary, junior, intermediate, senior) had an impact on identification or understanding of certain terms. In this section, the main themes that emerged when defining the relationship between activism and teaching are as follows:

- 1) Measurable Action
- 2) Caring for the environment
- 3) Awareness
- 4) Activism as a negative term

**1) Measurable action.** TCs described activists as action-oriented, usually in a formal way, such as working for an organization. This is a typical interpretation in the literature where

social movements, and their members, are often defined as groups with a formal organizing principal, who define a problem and aim to fix it through action (Benford & Snow, 2000; Piven & Cloward, 1977; Starr, 2010). TCs also were of the view that the actions had to be extreme or large in scale. Activists did more than have passion for a topic, they acted upon it. Grace believed that “as an activist you are supporting the advancement of that organization.” Grace also believed an activist took measures in a tangible way, such as “writing to their MP/MPP. Or attending rallies.” She explained that, while people could be interested in a variety of things, such as “boycotting GMO foods” or being “a vegan”, an activist “is someone who takes it a step further.”

The relationship between environmental issues and action is often a key component of environmental education (UNESCO, 1997; Stapp, et al., 1969). Diana suggests that being an activist means acting to change an environmental issue. The idea of going a step further was reiterated by Diana who explained, “I would say an activist is someone who does something for a cause, like they live for that cause.” Casey saw the value of personal actions as activism. She told me that an activist “takes actions on issues that matter to oneself and um I guess where there would be a range ... I take action daily on the choices that I make.”

What is accepted or not as activism is a common theme in the literature. Lifestyle movements, or choices based on consumptive practices, have also been recognized as activism (Cherry, 2015; Haenfler, Johnson, & Jones, 2012; Quéniart, 2008), often revolving around environmentally conscious choices like eating vegan/vegetarian or local. Both Casey and Diana seem to agree that an active choice is important (“taking it one step farther” – Diana; “action on a daily basis on the choices I make” - Casey), not just an interest in the subject.

While TCs already define activism as action and experience, it seems that some of the curriculum documents fail to make a strong connection to the role that a teachers' experience and activism plays in their pedagogy. A review of "Acting Today, Shaping Tomorrow" indicates that the role of a teacher is to guide students to environmental literacy. While the document does not use activist terminology, it does encourage teachers to use "field – based pedagogical skills" and to "develop knowledge and perspectives about environmental issues" (pp.11). It fails to mention the importance of teachers' own experiences in activist endeavours and the experience they have working for a cause; it also does not explain how teachers may use these experiences and community connections to enrich their teaching. I believe these daily choices and experiences of teachers could be used to enhance teaching and learning on environmental issues, and thus could meet the goals of the curriculum. The document encourages students to get involved and calls for partnership between schools and communities. These initiatives are important yet fail to recognize the role of the teacher. There is acknowledgement that "student engagement and leadership are central to environmental education" (Taking Action, p. 25), yet there is no mention of a teachers' environmental activism prior to entering the classroom. Teachers could enrich this engagement process, by not only exposing students to new experiences, but by sharing their own passion and activist endeavours in the classroom, serving as motivating examples.

**2) Importance of caring about the environment.** Participants used familiar adages such as "wanting to make a difference" (Alex) and "making the world a better place to be in" (Sam). Alex explained that some people just did not understand the relevance of past issues on the environment today. She explained, "I find a lot of people are like, 'who cares? It is in the past. But it does matter and...it still spills into modern day. Especially with the environment, it

has such a big effect.” Alex saw the importance of caring about environmental issues and realizing these issues are constantly developing and impacting the world.

Smith emphasized the importance of care, stating “for myself I would define it [activism] as an interest in the environment and trying to pursue the care of and conservation of it.” An activist demonstrated desire to make a change by being involved; Alex stated that “being involved and wanting to make a difference” was the goal of an activist. Being an avenue for change was echoed by Sam. She described her role as an activist, teacher and mother in this way:

I would say that when being an activist it is about advocacy. In other words, making the world a better place to be in. Not being self centered and looking for the ways you can improve. I would like to quote Ghandi, “be the change that you want to see the world to be” or something like that. Be the change. I kind of believe that thinking and it resonates very closely with my own philosophy. So, with that said, I would say, I am an activist. I would consider myself to be an activist. If I am a teacher and I am talking to my students on an everyday basis, even for only a few minutes a day ... on a scale of one to ten I would put myself an eight.

From Sam’s perspective, the role of an activist centres around an ethic of care and selflessness towards making a positive change. This desire for change comes from caring and her own positive philosophy.

**3) Awareness.** Some TCs believed an activist made a difference by raising awareness and educating the public. Isabelle explained that an activists’ role “would be defending or trying to make people aware of a certain topic, like you could be an activist for anything. So, that you

are trying to spread awareness or make a change in certain areas.” An activist, per Ella, made it a goal to be “involved in issues and informing yourself on issues” that were important.

TCs shared how they raised awareness of issues they were passionate about. Finn told me she does “try to share with people who will listen, what I think and what I have learned” though she was unsure of the impact, wondering “if they take anything from it? I am not sure.” Writing is also a form of educating on environmental issues. Isabelle discussed a march she attended against Monsanto; she said, “I also posted about that on my blog which is also a part of activism as well.” There was an understanding that an activist was knowledgeable on an issue they were passionate about and acted on this knowledge. This notion helped shape the identification for some TCs as ‘activist TCs’. Ella believed being an activist could involve many aspects, such as public education, and lifestyle changes:

I think it means getting involved in issues, informing yourself on issues, and trying to take steps to improve those issues...you know being involved. Like going to events where there is sustainable film viewing or ... making food choices or making lifestyle choices that are being environmentally conscious.

Casey believed there were “levels of activism.” She explained, that “I definitely would consider myself an activist but perhaps on a 2 or 3 level scale out of four. Like 2.5.” When I first asked Casey how she defines activism, she assumed I only wanted to hear about her “larger scale” and “formal” involvement with organizations such as Cycle City and the David Suzuki Foundation. This was indicative of how some TCs identified with the term activism and the tendency to define an activist as someone who does grand or extreme gestures. It was an interesting revelation to her, that I would be interested in the lifestyle choices and changes she

has made to help the environment. The same process unfolded with Diana. As our conversation progressed, she reflected on her lifestyle choices, things like always picking up garbage and never littering, stating “I guess I wouldn’t consider that activism, but it is.” She seemed more confident as she spoke that “choosing to eat healthy and not litter and being conscious of your decisions” counted as activism.

Finn considered activism to be tied to lifestyle choices, as well as more formal endeavours. She told me “there are things that I don’t like to eat or foods that I don’t like to buy, or products, based on where they come from or the company that owns the product or the product line.” It is through these choices and lifestyle decisions that she can express her ideals and values, in addition to other work.

In this way, TCs define activism as a set of choices made in daily life. Recently, studies in social movements have begun to accept that movements focusing on acts of consumption and every day practices can be expressions of ideals and values. These ‘lifestyle movements’ focus less on mobilizing the public to make changes, and rather, focus on the changes in an individuals’ everyday lifestyle (Haenfler et al., 2012; Quéniart, 2008; Shah, Friedland, Wells, Kim, & Rojas, 2012). Choosing certain products, or avoiding products intentionally as an expression of values, as does Finn, or not littering like Diana, fall into this category. These actions can be considered small and can be informal; however, they may be tied to environmental work through education or community organizations, exemplified in Casey and Ella’s involvement in Cycle City and the Jane Goodall foundation. Purchasing as an expression of one’s activist and environmental ideals is described as the citizen-consumer hybrid. There is some criticism in the literature, however, that activism can reflect a consumerist perspective rather than keeping the focus on making a difference as an environmental citizen (Johnston,



2008). This focus on individual action, through a consumeristic lens, is not surprising. There are several authors who note the tie between neoliberalism and the focus on the individual's role and responsibility in the environmental movement (Jacques, 2015). One example given is the organic food movement, some parts of which focus on individual actions such as purchasing specific food items, going to a farmers' market or boycotting certain foods (Werkheiser & Noll, 2014). The danger of adhering to a neoliberal model, is that it reinforces alienation and commodification, privileges individualism and makes community building difficult (Gorelowski & Porfilio, 2012; Ujam & El-Fiki, 2006).

**4) Activist as a negative term: relationship between teaching and activism.** Two main findings emerged related to the theme of activism. The first was that, despite their actions aligning with how they defined activism, most did not use the term to describe themselves. This was due, in part, to their belief that society paints activists as extreme or radical. For example, Smith believed others defined activists as “the people ...who are chaining themselves to trees, and making sure they are not eating any animals, or not wearing any fur, or almost environmental extremism.” He found that identifying as someone interested in the environment “scares people.”

Some TCs spoke at length about the dangers of sharing their passion for the environment or food in the classroom for fear of being political or inappropriate. Kim addressed this in her discussion of being an activist and teacher and why she chooses to identify as one:

Just because for me to take action can mean the smallest thing. It doesn't have to be picketing or going out there and campaigning in a public way. I think that is one kind of activism, but I think the way you live your life, your values and how

you live congruently with those, and how you share them with others, is also a form of activism. I look at my studies here [at university] and my own teaching of EE as forms of activism. Yea, I think there is that sort of stereotype of being an activist. And I think that is why I see activism as that way. In all fairness, I said that as a qualifier. Um, because even within environmental studies we have a certain image of what that means and what sort of follow-up or action that can come from that. I think there is a risk of identifying as an activist. For people who want to be formal educators in classrooms, those identities can be problematic to bring into the space where your principal and superintendents can view it.

Kim's explanation is directly tied to the belief that activism is viewed in our culture as extreme, and teachers are meant to be upstanding, rule-following citizens (Robertson & Krugly-Smolka, 1997). The education systems, and the teachers within it, are often thought to be politically and socially neutral (McPhail & Kaur, 2007). This is especially true if they want to be viewed as 'doing their job' properly (Jickling, 2003).

Ella was very passionate about her work. She made several lifestyle changes including adopting a vegan diet to protest factory farming and harm to animals. She advocated for many policy changes on campus and spearheaded several campus education initiatives to further her causes. She shied away from identifying as an activist, however, because of the negativity she believed surrounding that term. When asked if she identified as an activist, she smirked at me, then laughed. She explained, "I think I would identify with lifestyle or work, but I will tell you that 'activist' is not as bad as eco-activist or eco-terrorists." She explained that activism is often aligned with eco-terrorist but was a more politically correct way of saying it. She indicated that

those terms often get a rise out of people, and that she did not feel comfortable being aligned with these terms. Holly agreed that there is a negative association with the term ‘activist’:

I think activism has gotten this negative connotation to it. It is interesting because there is research that says if you get really militant about things people will actually do less. They pull back more. It gets too scary, too big, I can’t do it. I think that is maybe a little bit of it.

Smith experienced defensiveness if he used the term activist because of the association with extreme actions. He believed he is often viewed as a hypocrite. His friends will “say things like ‘but you are eating meat or you have a car that uses gas’ or something ridiculous like that.” This comment implies that a true activist would boycott to the extreme, whereas Smith believes that “it is not being extreme but still wanting to look after [the planet].” TCs often downplayed their involvement and the potential impact that they could make within their work. Finn, interestingly, was sure to temper her involvement in environmental issues. This speaks to the fear of being associated with an extreme term. Finn explained that she does many things to help her cause:

...But I don’t go out into the picket line and hold a sign and chain myself to trees. When I hear activist that is kind of what goes through my head that is what I picture um but I guess you could almost be a silent activist and I think that is more of what I am.

Likewise, Beth tended to downplay her involvement saying:

I know a lot of people that are involved in things, and they talk to me about it all the time. I am aware of things, but other than just remaining aware and helping them if they ask, I haven’t done much.

Not only are TCs skeptical of the acceptance of the term activist, they also did not view education as being a form of activism. This observation was contrary to their belief that information sharing and educating the community were part of the role of an activist. It was difficult for some TCs to accept being a teacher and environmental advocate concurrently; this is consistent with the belief that teachers who advocate for the environment are part of the marginalized minority and present an ‘unflattering portrait’ of the profession (Pedretti et. al., 2012). This struggle came up again in our discussions of being an environmental educator, and the difficulty they faced being viewed as a maverick teacher; this response is consistent with literature on the difficulty teachers’ face being advocates for environmental issues (Ellsworth, 1997).

Some TCs did give examples of how they make connections in their teaching to environment and their activism; this is discussed at length in subsequent sections. Kim, for example, explained that food is something “really tangible that you can use” and that “You can talk about the food on your plate and it gives them a chance to make those real-life connections. You can bring them outside and do a gardening project.” Beth also explained that she used a lesson on how to summarize stories and events as a chance to explore the environment. She said, she “just wanted students to be more aware of environmental issues so I used some literature that focused on the importance...of having access to food....in that particular book it was about women having access to food gave them more security.” Despite being able to make these connections and utilizing what they have learned from their activists’ experiences in their teaching, the act of teaching itself was not considered activism.

TCs agreed that to create change people needed to be aware and educated on an environmental issue, and that this was a definitive role of an activist; however, many TCs

dismissed their own role as activist/educators. Diana did not feel that teaching was doing enough to be considered an activist. “That is a tough one” she told me, “I take an interest in this stuff but I don’t feel I have done anything proactive that would make me an activist.” Lastly, the idea of formal involvement was also a limiting factor to identifying as an activist for another participant. Holly noted that activist is not a title she used stating:

I have never used that label about myself. And it is certainly not the way I think about myself. So, when you think of an activist, you think of them physically doing something or mentally doing something to change or support or to educate in a more formalized way.

Holly’s comment struck me as contradictory, since school is a formal way to educate and certainly takes mental effort to accomplish. Holly identifies attributes that both a teacher and an activist need to have, and despite both roles being similar, she still does not consider herself an activist.

This disconnect may be attributed to the identity constructs of the education system. While there is often a call to reform teacher training and break down the hierarchical view of academics, practitioners and community members (Zeichner, 2010), following the dominant rules is what is ultimately valued. To prepare teachers to make connections to their activism and include this experience in their teaching, it is thought that pre-service teachers must believe in their own power to effect change (Kugelmass, 2000). In this study, some TCs dismissed their actions as small or unimportant and did not recognize the power to make change through their teaching. To resist the “dominant ideologies” of the school system, pre-service teachers need to make connections to their past experiences, what Kugelmass (2000) calls spiritual preparation. If

pre-service teachers are indoctrinated into the skills and methodologies of the dominant school culture, they lose this connection (Kugelmass, 2000). To foster a connection to activism and its' impact on teaching, Sachs (2001) believes a school needs to be democratic. Teachers need to be given freedom to share ideas without fear of being viewed as radical; the school becomes a place where change can be possible through critical reflection of ideas and policies (Beane and Apple, 1995). The organization of the school must allow for these debates and critical opinions, rather than believing teachers should adhere to the status quo. In a democratic school, activist teachers can create bonds with colleagues, called communities of practice, where continuous engagement with personal experiences can be brought forth in pedagogy (Sachs, 2000; 2001).

Thea explained that as an activist, you have “your own opinions and things you do, to try and express your message.” She viewed this aspect of activism as problematic for a teacher because you could be seen as political or radical. As an activist, one often has to tackle and explain politically charged issues. Smith broached this issue by stating, “I know we are not supposed to be political as teachers,” but environmental issues are political and “they do have to do with political parties.” This observation, while narrow in focus since environmental issues to exist outside of political parties, was a concern for Smith. Authors such as Jickling (2003) address educators' reluctance to engage with environmental curriculum, urging teachers to integrate their activist experiences into the classroom, warning that limiting these ideas may imply that environmental issues are unimportant, further feeding into the idea that environmentalism is radical and should be avoided by students. TCs like Smith see the value in integrating their experience, but ultimately, Smith believes it is not acceptable by the standards set out in educational institutions. If new teachers are going to have an impact on political issues,

teacher training should be an “empowering transformative process” not one that accepts the reality of the system as it stands (Yogev & Michaeli, 2011, p. 313).

Beth believed it was difficult to keep politics or controversy out of environmental teaching, but something you “can get away with”, depending on the grade level. Beth explained that she worried about being viewed as an activist “a little bit” but said that some topics may be alright to discuss. Beth stated

I guess you have to decide. And it depends on the grade level too. Line 9 is in the news so in grade 5/6 we are expecting students to read newspapers and take information from that. I think it is appropriate and you can get away with it. Maybe in grade 1, if you brought up that there is a pipeline that is polluting water [...] I don’t know if you would get in trouble for it. It may not relate enough to the curriculum, and what’s appropriate for the age.

Maintaining the accuracy of the environmental information and being age appropriate seems like a reasonable struggle for TCs or teachers. This same issue arose when discussing environmental education, naturally, since the issues that are important to TCs are tied to their education and activist work. Grace, while she “loved that activism, the word, has been such a buzz word here”, said she believes there ‘needs to be a balance’ between awareness of issues - “having it in the back of your mind” - and what a teacher presents to the class. In her statement, she indicates that it is possible to be an activist and teacher, but finding a balance is important.

Grace and Casey were two TCs that seemed the most comfortable with the coexistence of teacher and activist, but only if activism was viewed passively within the teaching role. In the beginning, Grace embraced the term activist (one of the few TCs who did) yet once we began a

more concrete conversation about teaching and activism, she seemed to modify her perception of a teacher/activist. She told me, “I am a passive activist but the idea is still there.” I asked her to clarify what being a passive activist meant as a teacher. She explained that an activist “implies that you are actively doing something” and as a teacher she was “just embedding it into everything we do” in the classroom. This hesitation seems to come from the tendency to downplay the role of education as active. “Just embedding” environment into the curriculum is still making a conscious choice to educate and motivate about environmental issues, but TCs seemed to view this as simply part of their job. The act of integrating or embedding EE into the curriculum was not viewed as an action. Casey also hinted at this relationship of passive/active activism when she described “different levels” of activism. Activism is downplayed and viewed as something subversively inserted into the curriculum, even though it is an active choice for TCs to make links to EE and their activist work. This may relate to how teacher identity is constructed as neutral and non-political (McPhail & Kaur, 2007) or the fear they are acting in isolation and appearing in an unflattering professional light (Pedretti et al., 2012).

Grace’s activist philosophy was a part of her, always in the back of her mind, but the act of embedding it into the curriculum to raise student awareness was not viewed as: i) active and/or ii) activism. Holly used the same terminology, explaining that even though she makes it a point to link her environmental ideals and work into the classroom, it is not activism. “What I am doing is embedded in curriculum across the board. It is subtler than that I think. I have never thought of myself in that way. Not as an activist.”

Another participant, Diana seemed very dismissive when talking about her method of incorporating into the classroom environmental ideas that came from her community work, wondering “if it even counts.” I pointed out that, by her own definition, an activist is actively



making a difference and making a choice to educate others on an environmental issue. This seemed to conflict with her dismissal of connecting curriculum to environmental issues. I asked, “But maybe if EE is something you are trying to put into your classroom that could be considered action?” She thought for a moment and then said “yes, yes.” It seemed that, even though many TCs were actively trying to bring what they had learned through their activism into the classroom, they did not consider that an active endeavour. It appeared that it was just viewed as being part of their job and had little impact on the classroom. This could be related to the tendency to define activism as grand or extreme gestures as well as believing teachers can not be political. Recalling Table 2, which indicated several TCs identified as an activist (in environment and food), it is evident that this identification is not as straightforward as yes/no. As seen from this discussion, when asked for an explanation or given time to further reflect on the relationship between teaching and activism, TCs have difficulty attaching to this term. Only one TC, Sam, seemed to embrace the idea of being a teacher and an activist. She explained that when she thinks of her own teaching philosophy she does believe she is “an activist.” She told me,

I would consider myself to be an activist. If I am a teacher and I am talking to my students on an everyday basis, even for only a few minutes a day I see that I am relating this [environmental issue] ...on a scale of one to ten I would put myself an eight.

Here, Sam emphasizes how her dialogue and daily actions as a teacher are impacted by her activist ideals. This stands in contrast to how other TCs impart a non-activist teaching style on students. Sam does have a lot of life experience dealing with hunger in the community, with new immigrants. Through her work with food banks, she noticed a disparity between providing food, and educating and empowering new immigrants regarding where to get food. She felt that “as a community member I was obliged to help people get information” and in this way her

experience with this issue seems to have made her more aware and proactive about linking education and activism. She believes the school can act as a liaison between parents, students and teachers. She explained, “in schools we can start at a very small level. Children can learn the idea in school and bring the idea home to the parents”. Therefore, she sees the importance of bringing her activist experience into the classroom.

## **Summary**

Reviewing the statements by TCs reveals their restrictions on the activist/teacher identity. It was acceptable to be an activist/teacher if one’s actions supported the cause in a moderate, non-extreme way. It was not, however, acceptable to use the term activism or activist with students for fear of being viewed negatively. Teachers could have passion for issues and express them to students if there was a balance between what was important personally and what was consistent with the presentation of the curriculum. This balance was achieved by embedding activist themes into the curriculum and keeping discussions age appropriate. The notion of embedding it into the curriculum, mentioned directly by Holly, Grace, Beth and Casey and implied by others, seems to be another way of ‘hiding’ environmental lessons. This appears to be one strategy to avoid being viewed as political or activist.

## **How Teacher Candidates Define and Understand Environmental Education**

There have been numerous studies that explore how pre-service teachers and teachers define the environment (Evans, Whitehouse, & Hickey, 2012; Fien, 2004; Kagan, 1992; Pedretti et al., 2012; Robottom, 1987). Recent studies indicate that teacher candidates believe EE is important, but EE is severely lacking in Canadian faculties of education, leaving much to be explored (Inwood & Jagger, 2014). As a result, this study has explored many aspects of EE,

including how TCs define it, how they believe it is defined and approached in schools and the community, and lastly how their education in the B.Ed. program supports them as environmental educators. TCs in this study defined EE using the following themes:

- 1) Making a difference
- 2) Interconnectedness and role of humans
- 3) Interdisciplinary
- 4) Rhetoric of science, facts and fear

Recall that the Ministry of Education document, “Taking Action, Shaping Tomorrow”, provides a framework for an integrated Ontario EE curriculum (p. 4) that “reflects, promotes, and guides the implementation of environmental education” as it:

- Is locally relevant;
- Is culturally appropriate;
- Enhances understanding that local issues often have provincial, national, and global consequences;
- Builds capacity for community-based decision making and environmental stewardship;
- Supports lifelong learning;
- Supports the definition of environmental education provided in “Shaping Our Schools, Shaping Our Future.”

TCs in this study were asked, “How do you define environmental education?” Some TCs found EE hard to define because of its “many aspects” and “broadness” (Grace, Isabelle, and Thea). Reflecting on the difficulty of being an EE teacher, Thea, noted “it would be hard to say it [EE] is something you know about, since there are so many aspects to it.” This is consistent with the multiple, varied definitions found in the literature (Disinger & Roth, 1992; Haugen, 2010;

Orr, 1992; Sauve, 2005; UNESCO, 1997). A variety of themes about the purpose of EE were uncovered from the experiences of TCs: making a difference, interconnectivity between humans and nature, interdisciplinary, and rhetoric of science and fear.

**1) Making a difference.** In general, TCs believed the purpose of EE was to inspire students to make a difference, and to foster care for the environment. Educators promote an awareness of environmental issues and problems, the skills to solve those problems, and a willingness to make effective action-oriented decisions (NAAEE, 2004). David Orr claims that all education is environmental education, and that the goal of education is the mastery of oneself and one's knowledge to make a difference in the world (Orr, 2004, p. 12). Consistent with some of the literature (Disinger & Roth, 1992), environmental education involved inspiring an ethic of care. Grace explained "...generically it [Environmental Education] is about how to support that concern for the environment...That idea I said about being a global citizen is the most important part of it."

Ella believed it was important to show her students that she had passion for the environment,

I want to share that kind of passion I have in my own life to make change and make a difference...and teaching them about the environmental issues people talk about today and how they can get involved. So, I feel like, it is not just about taking kids out to do an experiment in the ravine. It is...teaching them what the whole field is about.

By sharing her passion to care for the environment, Ella hoped that students would be inspired to make changes. This contradicts TC hesitation about identifying as activists. While Ella, Alex and Smith wanted to share knowledge and interest in the environment to inspire

students to care, they and other TCs, expressed concern about being identified as an activist. EE is often defined as the ability to care for the environment, once one has the knowledge to do so (Gruenewald, 2003). The reason for doing environmental education in the classroom was to show “that you care about the environment” (Alex) and to demonstrate that “it is important to care.” Smith explained that if you are “teaching something about how to maintain or look after the environment or your place in it, I think you have EE.” Smith believes that EE shows students how to care for the physical environment. It is not surprising that this participant had a focus on the physical maintenance and conservation of the environment since he was heavily involved in outdoor stewardship and mentored students on camping and wilderness management.

Raising awareness was viewed to help students connect to issues, understand the importance of these issues and ultimately, change students’ views. Most TCs believed that awareness was one of the main goals and potential outcomes of EE in schools. Beth believed “just making students aware is the important thing.” Finn explained that the goal of EE was “just teaching students to be more aware of what is going on around them...because we are stuck in this little bubble.”

The awareness that EE brings to the classroom enables students to care and potentially make changes. Alex believed that “we are educating the future. And if these kids, if they don’t know about an issue, it is not going to pertain to them. It is not going to matter.” Environmental education was also seen to make a difference in the world, and in the lives of students. It has long been suggested that making EE relevant to the lives of students is an effective way to teach about the environment; an historical perspective suggests that the goal of teachers is to make EE immediate and real (Agne & Nash, 1976). Isabelle explained that she “wanted to make a

difference with the environment and food” and she felt that through educating young people she could accomplish this:

I think one of the best ways is reaching out to children because they are the ones who are going to be in charge in the future and you can’t really change...it is hard to change an older person’s mind. It is hard to go to a group of adults to tell them something and get them to believe it... and that is also why I wanted to do a speciality in outdoor education instead of becoming a regular classroom teacher.

TCs, for the most part, assume that sharing environmental knowledge with students will inspire action. There is a debate about the validity of this statement. Some authors suggest that prior to acting on environmental issues one must have knowledge and awareness; this knowledge is what entices an action on an issue (Pata & Metsalu, 2008; Wittman, Desmarais, & Wiebe, 2011). Environmental education, some argue, can promote positive attitudes and teaches students about their role in damaging the earth, thereby making them more responsible citizens. It is widely recognized that environmental education can help to create positive attitudes and awareness about environmental issues and the negative role of human actions; for some students, it can promote environmentally responsible behaviors (Bradley, Waliczek, & Zajicek, 1999; Moody & Hartel, 2007). Some stress the importance of awareness and knowledge as the initial steps to inspiring change but believe that the results are limited to the personal, and not practices or policies, due to the heavy influence of dominant hegemony (Boyes & Stanisstreet, 2012; Negev, Sagy, Garb, Salzberg, & Tal, 2008). This, in part, explains the citizen-consumer hybrid debate mentioned earlier in Chapter 3.

**2) Interconnectivity and the role of humans in environmental education.** Some TCs understood the broadness of EE to be an invitation to link numerous environmental topics. “Interconnectedness” was put forth as an attribute of EE, with many TCs suggesting a link between humans and the environment. Related to an ethic of care, some participants included the notion of respect for, or connection to, the environment and each other. Diana defined EE as a process for developing “a deeper sense of the earth.” Kim, whose program of study is environmental studies, where relationships between systems, human and non-human, are part of the pedagogy, told me that “the core of EE is developing meaningful ecological relationships.”

The interconnectivity between environment and its’ inhabitants was viewed as reciprocal. Smith defined EE as learning about “an overall picture of the environment” and not using the outdoors as a tool to “learn about ourselves” but instead to learn about the relationship between the two. Diana spoke to the reciprocity between food, humans and the environment, about “the way food affects you and you affect food” and “...the effect we have on it [the environment] and the effect it has on us.”

Kim felt EE could be a vehicle to “recognizing yourself as part of the system and giving autonomy to nature or wilderness however you want to define it.” Consistent with this, some authors define EE as nurturing a positive relationship between human and non-human life, while working to make a difference for social and environmental justice (Fawcett, Bell, & Russell, 2002).

Lastly, Thea reflected on what she has learned as an environmental studies student:

A big thing that we learn...is interconnectivity in life. I think if you were to introduce [EE] to someone, you would say how interconnected everything is, just how to look at your everyday life and ...how it affected the environment.

These statements emphasize the inseparable bonds and relationships in environmental issues. There is a conscious effort to illustrate to students that their actions matter, not only to themselves, but to everything around them. On the one hand, the interconnectivity of humans and the environment is put forth as a key component to EE, yet some TCs seemed to use language that is more human-centered, or anthropocentric, for example Smith focusing on “consequences” to humans based on “their [student] actions.” Another example was Alex, stating damage to the “environment...is something that has a direct effect on us and it is something we all need to know.” For these teacher candidates, EE often focused on human impact on the environment and, in turn, the effects environmental problems had on humans. This is a widespread problem of EE language and curriculum development. For example, the term Education for Sustainable Development (ESD) is criticized for using anthropocentric language and being narrowly social in scope, valuing economic progress over sustainability (Brundtland, 1987; Stables, 2001). On one level, these TCs acknowledged the negative effects that human action had on the environment. Smith, for example, stated the importance of students being aware that their actions had “consequences” on “their future.” Where TCs like Smith, Kim and Thea made the reciprocal relationship clear, others such as Alex, Finn, Isabelle and Diana tended to focus on the impacts and consequences humans would endure from harmful practices. Finn, highlighted the effects of behaviour on “other people” in addition to the environment. Diana seemed unaware of her use of anthropocentric language. Although she gave a definition of EE that explicitly denoted the reciprocity and equality between human/non-human/food systems,



there was a tendency to reframe impacts of negative actions on humans. For example, she explained that “where you eat, what you do, where you go [...] the earth right? Everyone is living on it and it affects you in a big way.” In this statement, she begins to describe connectivity between systems, but ends with a statement that privileges the impact on humans.

The propensity to use anthropocentric language does not necessarily, though, come from valuing human impact and experience over nature. I think two things are occurring: i) anthropocentric language is commonplace, and TCs are not being critical of the language or phrases they use, a distressing thought for people in education; and, ii) anthropocentric language is used because TCs are reproducing cultural norms they encounter. As noted in the history section, the environment is often viewed as something to dominate and control for human use (i.e. resources needed to survive). Lastly, iii) it may be a poor attempt at making the environment relatable to students via reinforcing that people are also animals. Using anthropomorphic language would make the environment relatable because it reiterates that we are all animals/non-human animals unlike anthropocentric language, which places humans above, separate and dominant over, animals. I make this interpretation based on the statements TCs provided about the importance of making EE relevant to the lives of students, making environmental issues about humans and the impact it has on their lives. This was considered an effective avenue for inspiring students to care about the environment. For example, Beth feels she can “influence students” if “it affects them more when they grow up...if it is connected to them.”

Alex indicated that EE should help students “be aware of the things you do and the consequences [these actions] have on their future.” For Alex, the goal of EE is to make students more aware and it appears his tactic is to make it relevant for them. In this way, he consciously frames EE in anthropocentric terms. Likewise, Isabelle uses EE to inspire students to make

changes to “sustain ourselves.” Isabelle shared that “the main thing I like to focus on is how can we take care of our environment and make sure that it is healthy and functioning properly, so we can sustain ourselves for a long time.” These two TCs define EE as reducing the consequences of human actions on the environment, but with the goal to sustain human life. Finn mirrored the belief that sustainability was important saying that her students need to learn “what you are doing, and how that affects the environment long and short term, and other people.”

Isabelle stated that “the way that we do things now is like...a lot of things put money first and doesn’t think about the environment.” Understanding the relationship between systems, however, did not stop her from using a human centred narrative; it seemed very difficult to mention care, or the environment, without relating it to the effects on humans.

**3) Interdisciplinary.** The tendency to define environmental education as general or broad leant itself to an understanding of EE as interdisciplinary (Stevenson, Wals, & Dillon, 2013). Without being aware of the Ontario Ministry of Education’s (2009) curriculum integration goal, many TCs used similar language (integration) to describe EE. TCs were generally unaware of the policies in place to integrate EE into the classroom. Beth had some exposure to the idea explaining, “our other teacher, the one I said has been very encouraging, she has been going through the document [can’t recall the name] about implementing EE at different grade levels and gives examples of how to do it.” Despite most not being aware, it was generally understood that EE could be taught in the classroom regardless of the subject. It is promising that TCs could see the integrative properties of EE without knowledge of the documents.

One TC believed that EE could be ‘combined’ with a variety of school subjects. Sam believed that a classroom teacher could do EE if using “a holistic approach, not a didactical one,

where I am the one that knows it and teaches it to them. Active learning.” Here Sam provides two pedagogical approaches, holistic and active, though she conflates the two. Sam wants students to be active participants in their learning, by doing hands-on lessons and activities. She discusses this at length as part of her role in the EcoTeam at her placement. Hands-on learning is an approach to teaching EE and often uses language such as “getting outside” and “getting your hands dirty.” By using the term holistic, Sam implies that EE can be a more interconnected subject that includes social, environment and other issues; in this way, an EE teacher should provide more open-ended discussion rather than using a traditional banking model of education.

Some TCs were already reflecting on how to apply EE as an interdisciplinary subject within their placement. Grace pointed out that the language curricula are already interdisciplinary:

Culture has to be in there, and with cultural issues comes language issues, and with that comes social justice and issues of difference. The unit they just did [in placement] was water. So, for myself, even though they were taught separately, I could absolutely see the materials I used to give information like 1 in every 7 people does not have access to clean water sources.

Grace was beginning to see where an environmental issue could act as a connector between curricula of social/cultural and language.

While TCs framed EE as an interdisciplinary subject, Kim noted that it is not always accepted as one in schools, where subjects are segmented. It has been found that some secondary schools do very little EE due to the gap between the theory of interdisciplinarity and segmented curricula (Oulton & Scott, 1995). Kim shared her experience having an MT who did not want to mix subjects and wanted to stick to curriculum boxes. This is indicative of the challenges

teachers face when trying to fit EE, and interdisciplinary subjects, into a classroom narrowly structured (Johnston, 2009). She stated:

When I propose something, more like [what I have seen in another faculty], for instance, I wanted to talk about indigenous rights or indigenous forms of education as environmental education, I get ‘well ok I see that as social justice, but not environmental studies.’

Kim makes the connection between environmental studies, indigenous ways of knowing and social justice quite clearly. This comes from degree that focuses on interdisciplinarity. When TCs suggest going outside the curriculum boxes, MTs often tell them to stay within the curriculum guidelines.

**4) Rhetoric of science, facts, and fear.** While some TCs did define EE in terms of interconnection and interdisciplinarity, others tended to use a reductionist lens and frame EE via facts. Two TCs explained how facts were an important part of environmental education. Ella defined EE as “a variety of things, because there is factual kind of data, like just teaching about how earth works, how ecosystems work and climate.” When EE is framed as information, it is hard to reconcile the recreational or hands-on aspect of it, with outdoor education. Smith explained that at the YMCA, they struggled to maintain an understanding by those in power of outdoor education as “educational”. Since what they were doing outdoors was deemed recreation, some believed it was automatically just for fun, rather than learning. This was due to the physicality and experiential nature of the approach, as opposed to facts and figures.

On the surface, EE as “facts” and “environment” was closely linked to science and technology. This viewpoint is often criticized as technocratic (Robottom, 1987) and can

potentially ignore the relationships between social issues, environment, and science. Holly explained that you could not separate science and technology from environment in the classroom. She expressed that environment:

...is part of the science and the STEM. Right? I don't think you can separate them. If you have an interest in science, you can't help but have an interest in the impacts of technology and science and where we are at right now. They are just embedded.

The embeddedness of science and technology with environment coincides with the way the curriculum for STEM [Science, Technology, Engineering and Math] is framed. This TC is focused on this stream, so it is understandable that she would find it difficult to separate environment from this framework.

Educators are often criticized for using facts and figures to scare students into action, presenting environmental issues with a 'doom and gloom' narrative (Orr, 2004). A few TCs seemed to be aware of this, and criticized this pedagogical technique. Alex explained that if a teacher focuses on the negative and "just stands there and says, 'you can't do this, it is bad, you can't do that it is bad' the students are not going to take it to heart." Focusing on the negative would not inspire change, contradicting a goal of EE. This connects to the fear often instilled in younger students about the catastrophic nature of environmental issues, called ecophobia (Sobel, 2007).

Ultimately, Alex saw the need to connect with students, so they understood environmental issues, through techniques other than lectures. During a practicum placement, Casey shared an anecdote about her young students understanding of environmental issues. She explained:

I was marking something, and they wrote “oil is bad, it will lead to death and destruction” or “invasive species will eventually take over, killing all native species, eventually leading to extinction and we will all die.” In a way, there is some truth to that idea, but I don’t want it to be all doom and gloom.

### **How Teacher Candidates define Food Literacy, its’ relationship to EE and, its’ Role in the Curriculum**

Food literacy can be defined as “the degree to which people are able to obtain, process and understand basic information about food” and an entry point into broader issues of poverty, access and equity (Wiser Earth, 2007; Yamashita, 2008). The concept has arisen from the growing interest in the connection between food and sustainability, health, and political problems (Sumner, 2013). Although some authors focus on food preparation as a benchmark for being food literate (Caraher et. al., 1999), others emphasize understanding food within a ‘larger social and cultural context’ with real world connections, at multiple scales (Koc et. al., 2012). In this view, food skills are about “more than just practical, technical ability” and depend on the individual and the factors affecting the individual, a more multifaceted approach (Short, 2003, p. 17). Food can help illuminate connections within and across a variety of environmental issues (Levkoe, 2006; Barndt, 2012).

Integrating food into the curriculum, and making relevant links between EE, food justice and sustainability, usually happens if initiated by the teacher (Breuing, 2013). One Canadian study suggests that teaching about food should have two components. The first is the introduction of food literacy at the primary level, since the authors believe that young adults in secondary school are more fixed in their food practices. The second is that food literacy should

be part of the school culture rather than simply a component rolled into an EE curriculum (Jones, 2012).

I asked TCs if they had heard of food literacy and if so, could they define it. Although all the TCs interviewed could provide a definition of environmental education, food literacy, perhaps because of the ‘newness’ of the term, was less familiar. TCs were able to offer some consensus on what FL included such as:

- 1) Origin of food
- 2) Food as social
- 3) Food is interdisciplinary

Three of the TCs, Finn, Isabelle and Beth, had not heard of the term. The rest had a general understanding and believed it mainly focused on the types of foods people eat, and the nutritional value of such foods. Smith had heard of the term but was hesitant at first to define it. He did say food literacy has “been thrown around.” He had heard it from “his physical education teacher...he talks about food literacy as understanding what you are eating, what it is made of, what it is doing to your body...I don’t know the official definition.” This interpretation was held by other TCs and is often how it is understood in the literature (Anderson, 2007; Yamashita, 2008). Grace, like Smith, was initially hesitant to define it. She told me “I am not aware of the details.” After some thought she offered that she was “not sure if it means nutrition wise? Essentially reading a label, like how many carbs are in here, how many fats.” Casey believed food literacy was about what foods “we need, what is good for us.” Diana mentioned that food literacy is about “reading food labels” and Ella noted that being food literate meant you knew “what healthy choices you have.”

There was no obvious pattern regarding who could or could not define FL. Finn, with a teachable in geography and environment, was unable to provide one. Her teachable areas could have provided multiple opportunities to learn about food, yet she had not been exposed to the term at all. One of Finn's goals during her teaching was to do "some community gardens and get kids into growing their own vegetables" and she has an interest in food and water issues.

Based on the analysis of their interview transcripts, Table 3 shows how TCs defined food literacy. The headings come from the ideas put forth by the TCs and from the literature on food literacy.



**Table 3.**

*Evidence of how teacher candidates define and understand the term Food Literacy*

Participant Name	Evidence of interdisciplinary connection					
	Field to table	Environment	Social/Cultural	Equity/Social justice	Health/nutrition	Unable to define
<b>Alex, Isabelle, Finn, Beth</b>						Could not define
<b>Thea</b>		“I think the food you eat and the choices that you make have an impact on things in the environment”	Food is “a time were we all share things and talk...it is important because people spend a lot of time eating dinner and they converse during that time and conversations can be useful”			
<b>Casey</b>	“...being able to talk about food in a multi-faceted way... have the language and a bit of an understanding that food just doesn’t appear”	Food waste as environmental issue: “we were able to go through the garbage and see ok how much of this, like most of it was food waste...then we created compost bins”			FL is “the food we need, what is good for us”	

<b>Diana</b>	“where it comes from, where it is going, how it is made, and who made it”				FL involves “reading food labels”	
<b>Ella</b>	“being able to understand and be aware of where your food is coming from”	“food issues and environmental issues go hand in hand” Relates to “different food issues like GMOs and factory farming”			“what healthy choices you have”	
<b>Sam</b>			Retold experience of helping new immigrants access food and poverty associated with immigration	FL, immigration and food access “it is about thinking about more...a bigger issue”	Observed that emergency food is often the food people don't want, and is not healthy. “I often feel it is a form of exploitation and I feel guilty about it”	

<b>Grace</b>		<p>“If we can create these (fake meat) why in the world are we using so much CO2? or losing out on so much space; we could be making crops for other areas that have no access good soil for producing agriculture”</p>	<p>“food is wrapped up in it, because as I said, culture has so much to do with the daily life and with daily life comes food practices”</p>	<p>“we can bring in these great issues that are facing every aspect of people”</p>	<p>“Essentially reading a label, like how many carbs are in here, how many fats”</p>	
<b>Holly</b>			<p>school poverty... “prompted us to do a culturally aware food bank”</p>	<p>“Food equity is critically important to me...So that question or conversation of food issues food equity and global issues”</p>	<p>Introduced to it in PhysEd/Health</p>	
<b>Smith</b>					<p>“understanding food, what you are eating, what it is made of, what it is doing to your body”</p>	

<b>Kim</b>		"I got a chance to explore it and what it might look like and feel like to do gorilla gardening...I am also interested in sustainable food and global food system."		Has researched "food justice" Understands the link between "indigenous rights or Indigenous forms of education as environmental education" and "social justice"		
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**1) Origin of food.** Diana, Casey and Ella defined FL as understanding food from field to table; this is a common terminology for many community food organizations, such as FoodShare, Toronto. Casey believed it was important to be able to “talk about the many aspects of food and eating” in a “multi-faceted way” and have “the language” of food to understand that it doesn’t “just appear” in the grocery store. Ella defined food literacy as “being able to understand and be aware of where your food is coming from.” This is an important conception of food literacy since ignorance of the distance our food travels, and the notion that food is cheap, and convenient is a problem (Kneen, 2003, p. 39). Perhaps due to her environment teachable, Ella was also able to expand her definition to include environmental impacts. Further, Diana explained that being food literate meant that you know “where it comes from, where it is going, how it is made, and who made it.” Understanding the journey of food from field-to-table is one important aspect of food literacy but is limited since it leaves out the social, cultural and environmental aspects.

**2) Food is social.** Thea believed food literacy included communication and sharing. She believed being food literate made someone “just enjoy eating as it is” and meals “a time where we all share things and talk about stuff.” Food is often viewed as a strong part of community making, pleasure and family relationships (Fischler, 1988). The social aspect is also important to education, since as Thea noted “it is part of our lifestyle.” Food as an everyday, social component of life (McMichael, 2000) may make it a relatable and enjoyable subject for students.

**3) Food is interdisciplinary.** Per Barndt (2012), food is the “quintessential interdisciplinary subject” and an “entry point” into other disciplines. Food is often viewed as having the potential to make connections in environmental education. Knowledge of the interdisciplinary nature of food, and its’ relationship to environment is a useful tool for TCs if

they are going to be successful environmental educators. Some TCs demonstrated an understanding of this concept by linking food to justice, poverty, system issues, agriculture, animal rights, GMOs, and social supports.

Ella displayed a fuller understanding than other TCs of food literacy. To her, it meant knowing:

Where can you get healthy food and the different food issues that are going on, like GMO and factory farming. Like farming run off and other food issues and environmental issues going hand in hand. So being food literate would mean informing yourself on those choices and actively participating on those better choices.

In this way, understanding food and sustainability helps people make the connection to their own health, and that of the environment (Jones, 2012).

Sam, while framing her explanation of food literacy in terms of nutrition, demonstrated that she had a deeper understanding of its connection to other issues, such as equity and poverty, consistent with the idea that EE can connect environmental and social issues, with food as its lubricant (Breuing, 2013; Koc, et. al., 2012). She began with “nutritional information”, but as the discussion progressed, she provided a more nuanced understanding of food literacy, choice and equity. Her work with new immigrants and their need for emergency food was referenced. She explained that sometimes we eat the wrong food:

If you knowingly eat it, then there is no issue, it is a personal choice. People go to fast food, who can stop them? Knowingly is something different. I often feel it is a form of exploitation and I feel guilty about it.

The exploitation Sam references is the low-quality food provided for new immigrants at the food bank. She details the problem of food insecurity; the food that is provided is usually not nutritious and the people accessing the food may not have the knowledge to make an informed choice. Additionally, their food insecure position does not allow them to have a choice (Pinstrup-Andersen, 2009). She offered, “When it comes to hunger...I know it is difficult. You need to eat.” She felt guilt for offering these types of food to people in desperate situations, though she understands they need something.

Holly explained that “food equity is critically important” to her. She recounted a trip to the grocery store where she noticed food prices were down, in her opinion, due to the low cost of fuel. Her partner wondered if the airlines will get the message and drop their prices. She responded to her partner, saying “‘I hope they don’t.’ I said I hope that they keep it in the food prices.” She noted her family discussed the relationship between the high-cost of healthy food and the equity issues that arise from those prohibitive costs. Holly explained that while it is “part of the conversation in [her] family” she also makes a point to discuss it when she is teaching and she “pulls all that in” the conversation. Holly not only demonstrates the interconnection between food, food equity, and security and global issues, but she attempts to teach it. Currently, TCs feel they are not given support in the education program to make these connections. These data suggest that TCs have their own understandings based on their experiences and believe food is a something that brings people together with its social aspects but can also separate people due to its lack of affordability. The nutritional aspect of food is also important, but with promotion of eating healthy comes questions of equity and access. Filling the gap for students who do not have food, such as through breakfast programs, is applauded but some TCs felt that more education is needed to make these programs robust and not just band aid fixes.

## **Chapter 5**

### **How University Education Programs and Practical Experiences Impact the Understanding of Food Literacy and Environmental Education**

#### **Food Literacy in Practicum Placements**

TCs were asked if their practicum placements addressed food issues and, if so, how food literacy was defined. Food was not something that concurrent students encountered in their placements. For consecutive students with classroom practicums, food issues were encountered mainly in the form of snack or breakfast programs. Much like the definition TCs provided for food literacy, food issues in schools focused on health and hunger.

Beth had no exposure to food literacy, or food in general, within her placement. She said that neither “of them [her placements] had a snack program” and when asked if they did any sort of gardening or cooking, she answered “no.” Aside from her experience with composting the food waste, Casey did not have any other experience with food issues in her placement.

Smith, on the other hand, explained he learned something new from his students about food. He recounted that while “we don’t talk about food other than healthy food”, he had a debate with students about organic versus non-organic. He said,

I learned something from the studies the students were bringing up. I have always been a huge pusher of organic but there was this study that one of the kids found on not-organic but still not processed. It was very interesting.

In practicum, food was viewed primarily as a hunger issue. TCs saw a need for breakfast or snack programs, but some realized that providing food was their only focus. A report by Sustain Ontario noted that students consume one third of their calories at school; thus, schools



should provide not only the opportunity to access healthy food but help students to develop knowledge and skills to learn about food in various capacities (Sustain Ontario, 2013). Holly again reiterated the lack of discussion regarding poverty and hunger. She believed:

There is no conversation. The school that I am in now we have a women's shelter attached to the property. We have a lot of kids who are struggling but we don't even have a snack program. Which should be at the school, but it is not there.

She was quite upset that some kids had snacks "taken away" if they were "not considered healthy." This practice seemed to ignore the equity issues of poverty and hunger, since oftentimes unhealthy food is cheaper. Isabelle commented on the process of developing a snack program. She explained that,

My MT was telling me about the rating scale they have for TDSB schools and it is out of 500 schools and if you are 1 it is the lowest. The school I am at right now is 56. So, they are at the low end. So, that is why they get a lot of extra programs [breakfast club and funding for food]. Another food related one is blessings in a bag. They have backpacks and families can sign up and you can get a bunch of food items in a bag. Each family gets a new one a week. I think it is so different from school to school, and school board to school board.

The program provided adequate food but again, there was limited discussion about the need for such programs. Not only is it important for students to get adequate nutrition, it is important for them to understand the reasons behind the lack of access, the complexity of food from field to table, and the knowledge they need to make informed decisions about food (Jones, 2012). Isabelle explained that she had "personally only seen [these programs] happening and not

talked about... They might have had an introduction about it, or newsletter, but I am not sure how much the children understand about what is going on.”

Another experience with a snack program was recounted by Diana. She explained that she “didn’t agree with” the way the program was run. The snack program was hierarchical. Only students who paid for it got food; extra snacks were offered to members first and “then if no one in the program wants it, then the extra goes to the people who didn’t pay.” This was a problem because in “grade seven they are always going to want the food. They are always hungry, and it is something different than wanting to do work. Kids who need it usually don’t get it.”

Further research on the Ontario Student Nutrition Program (OSNP) indicates that this is not the way snack programs are meant to be run. OSNP provides funding for breakfast, lunch and snack programs in Ontario schools. The program delivers snacks in a variety of ways, including a full school program that delivers snacks to each classroom for primary students. Older students have access to a tuck shop-style program, where students can purchase snacks at low cost. All snacks are at least one serving of fruits or vegetables (Ontario Student Nutrition Program, 2016). The approach described by Diana seems to be a problem of execution at this individual school/classroom.

Food literacy could have an enriching effect on the breakfast, snack and backpack programs. Student nutrition programs and food literacy, including food access programs and school gardens, have resulted in healthier eating, increasing knowledge of harvesting and preparing food, making positive lifestyle changes and having better attitudes towards food (Anupama, Misako Azuma, & Feenstra, 2008; Wittman, Desmarais, & Wiebe, 2011). Diana believed that food access in schools was limited to “just distributing” the food and learning

opportunities were lost by failing to discuss the need for it. As shown above, these programs can have an impact, but merely distributing food to students is not realizing the full potential of these initiatives.

TCs were not only critical of the way food issues were handled in schools, they provided some thoughts on how to improve these programs. Many focused on making explicit connections between existing curriculum and food issues. Finn and Smith discussed their personal desire to do food-related projects such as gardening. Smith and Grace saw the possibility to connect food, geography, culture and social justice in their teachable areas. Smith thought that “the easiest thing would be to do it in geography...there are whole sections in there about how we treat the environment and local resources and food and water.” Grace made connections between food and culture that could be part of her French classes. She explained to me that “food is wrapped up in it, because as I said, culture has so much to do with the daily life and with daily life comes food practices.”

Grace also made connections to social justice. She explained:

If we are talking about social justice which we would do in an upper year class with French, then we can bring in these great issues that are facing every aspect of people. There doesn't have to be a limit when it comes to food. Everyone has to eat. How they eat, what they eat when they eat, all of these questions are fascinating and people take it for granted [the differences].

Creating a conversation about food issues between students, teachers, and professors was viewed as a productive way to incorporate food into pedagogy. Drawing from an environmental

science course, Thea thought a debate format would be useful. She explained that her class debated GMO foods:

...Where each person was designated a role, so one person was Monsanto, one was farmers, some were the community. So, that was something that definitely brought my attention to food literacy, to see how it affected different parties and how different stakeholders are interested in the issues.

This conversation introduced the class to a variety of stakeholders and their concerns and possible actions.

Another way to incorporate food literacy was to increase exposure to situations and conversations involving food, rather than just engaging with food related projects. Holly believed teachers should see students at lunch time to facilitate discussion of healthy and appropriate food. Holly believed that because teachers do not see their primary students at lunch, “there is less of a conversation about what they are eating and the impacts.” She also believed that, while having a food drive was positive, her school was missing an opportunity to discuss other aspects. She explained,

Most schools do a food drive, you bring in whatever you want and it goes to a food bank. So, we turned that around and talked about the community and how they need food and what their culture is in that area. So, we wanted to bring in specifics that they need.

Holly sought to meet the needs of the community and also use it as a learning opportunity to make connections between why people needed these items and not just which ones.

Food practices in schools, such as in the cafeteria, could be an opportunity for learning according to some TCs. Grace believes food can be an “extracurricular” through “funding their

own kitchen or nutrition class.” This way, students could learn about food, work in the cafeteria, and impact the health of their school community. She told me that “it just seems silly in this day and age, when we have that term...food literacy, why aren’t we literate in our own high schools? Where great minds are starting to develop?” It seems that TCs (such as Holly and Grace) were able to articulate the relationship between food and other environmental/social issues the more they expressed concrete ideas about addressing the problem in schools.

Sam believes that introducing young children to food literacy could help educate their parents, especially if they are new immigrants, on healthy food choices. She told me that “children can learn the idea in school and bring the idea home to the parents.” This comment assumes that new immigrants do not have their own food literacy. Sam, through her work with community health and new immigrant policies, saw the need for the school to be a resource for newcomers. Children were responsible for teaching their parents information in English, and she felt that where to locate and how to cook healthy Canadian food would be useful. In her explanation, I believe she is confusing food literacy with being literate about how the food system works in Canada. Newcomers to Canada have their own food literacy, based of course on their experience in their home country. When they arrive in Canada they must navigate a new system. She does raise a good point that schools should serve as a resource for the community and help support the learning of a different food system.

Lastly, some TCs highlighted how play provided an opportunity for primary students to learn about health. Isabelle witnessed her MT discussing health with her students. She noted,

When they were playing with the food items in the kitchen centre one of the kids...she was like 'oh I am only going to eat the healthy one's what should I eat? [the teacher] makes it a teachable moment any time.

### **Food Literacy in University Education Degree Programs**

Only two TCs mentioned any exposure to FL during their program and that focused on water issues. Ella explained that "education has not covered food at all." When asked why, she felt that it was just not a priority and Finn agreed.

When students were given free rein to choose a topic, two TCs chose food and water. One TC, Finn, was unable to define food literacy. Choosing to focus on waste and clean access to drinking water demonstrates that she has an interest in these types of issues but lacks experience or support to make this connection to food literacy. Finn said,

I was able to do a project on water issues and water conservation, so I did the Great Lakes Basin. That was good because I am the only environmental science student and those were geography students...and they seemed to be pretty interested and shocked about how much water we waste. So, that was good, and my teacher was pretty good and lets me do what I want for the environmental science class and choose topics that interest me.

The second TC who chose to do a project on food issues was Grace. This is not surprising since she could define certain aspects of food literacy and food and culture was an interest. She chose to do a group project about environmental education, addressing the ethical question of meat. Her group used an article on the re-creation of the hamburger using stem cells. She debated with the class about the ethics of relying on meat for our diets:

If we can create these (fake meat) why in the world are we using so much CO<sub>2</sub>? or losing out on so much space; we could be making crops for other areas that have no access to good soil for producing agriculture. You can stem off a discussion into so many different things. It is such a cool place 'environment'.

Here, Grace demonstrates her ability to connect a variety of issues in EE and food literacy. While the conclusion her group came to, recreating meat via a technocratic solution such as cell replication, may not be the best approach, it does demonstrate that she can look at different solutions for a food problem. She did include a discussion of ethics and made arguments for vegetarianism. She also made some connection between sustainable agriculture, quality soil, and access to land.

It was encouraging to see that, given the opportunity, TCs felt they could incorporate their interests and activist endeavours into their education. Grace believed that if she had not done the presentation that the other students would have had no exposure to this topic. The problems with her group's analysis demonstrate the need for education professors who can clarify and fill the gaps in understanding. Expanding on their presentation and extending the knowledge of TCs in these areas could provide students with a more nuanced understanding of food literacy.

**Relationship between food literacy and environmental education.** I wanted to understand how TCs viewed the relationship between food and environmental education. I think being able to make the connection between EE and other related areas is essential if a teacher is going to be successful at integrating EE with a variety of subjects. As the literature suggests, there are numerous connections between food and environment and an understanding of such

interconnectivity may provide a way to link curricular areas (Barndt, 2012; Johnston, 2009; Levkoe, 2006; Fawcett, Bell, & Russell, 2002). While some connections were made between FL and EE there was some reluctance to name the two as inter-related (Grace, Isabelle). Two of the TCs who spoke about FL in an interdisciplinary way did not connect it to the concept of EE. Instead they believed that the two areas were separate.

Isabelle believed that,

Food is a part of it [environmental education] but it is not something that I think about all the time..... When I think about it [environment] I don't think of food first. It is kind of more separate in my mind. I definitely see and understand the connection between the two, but it is more something separate that I think about.

Her reluctance to connect the two topics directly was understandable given that she was not familiar with the term food literacy. As our conversation developed she realized she was aware of food issues, just not the term food literacy.

I was curious about Grace's need to keep the terms separated, especially since she gave many examples of the interconnection of food, environment, and culture. I asked, "You are separating environment and food. So, do you see those as two distinct things?" She provided an explanation about the duality and tenuous link between food and environment:

It depends how it is broached. If we are talking about GMO foods or organics or um...you know raw food I would say that is an environmental link. Even the opinion of vegan options in schools, that is an environmental issue for sure, because you are taking a look at the impact of large animals on the environment. You are thinking ethics, you are thinking further. I think they are intrinsically linked, but I just think of them in a broader



spectrum as being separate entities from which you can get to the same point. So, I would say yes, they are different focal points but of course there is a link. But in my experience, they are still separate.

### **How University Education Programs and Practical Experiences Impact Understanding of Environmental Education**

After a discussion about how TCs personally define environmental education, we began talking about their placement experiences. TCs were often critical of how their placement schools approached EE. There were varying opinions on the amount and effectiveness of EE in the classroom.

**Environmental education in placement.** TCs are offered two main avenues of learning and support in their journey to be teachers: the University B.Ed. classroom, where they are students, and practicum, where they teach students. If TCs lack exposure to EE in the B.Ed. curriculum, then their placement or practicum is another possible learning opportunity. The way placements addressed EE was criticized by some TCs and supported by others. As the interviews progressed, TCs would often give a description of how their placements defined EE, often in limited terms. The focus was typically on waste and recycling, the green movement and role of humans, and use of the outdoors. These were small initiatives within the school. Finn was not clear on how much EE was even offered in schools, concerning for her since it was her teachable subject. “Now in other schools, I am not sure what they offer .... I think my curriculum subject teacher did teach environmental studies and it was an academic level. So, they are out there. But not many.” She has little idea what is possible in terms of support to teach her subject.

Holly was the most vocal about how schools lacked in-depth discussion of environmental issues, as it was one of her goals to infuse EE into her lessons. She was very critical of how schools presented environmental ideas to their students, laughing that the only EE the primary students receive is “recycling” and “the lights off thing.”

Kim explained that EE in schools was limited to the rhetoric of the “standard ‘green’ movement” (Strife, 2010). This discussion was “often focused on human interactions with the environment, resources and water.” Holly commented on the limitations of the EE rhetoric as well. She noted, “they are just these little actions in the school. I don’t see an investigation of what is important.” In her experience, students were not given a chance to discuss the impacts of these imposed behaviours, such as recycling initiatives, but merely told they should recycle or eat healthy. Students were presented material on the surface but understanding the impacts and connections “is lacking” according to Holly. When asked why discussion was limited, she felt it was because teachers did not believe students could grasp in-depth concepts. Holly explained:

I think they think primary kids can’t understand it. That is crap. So, they stick these touches on it and there is not a real investigation of what is behind it. And that is a big problem.

Some TCs had a more positive experience with EE in their placements, describing interactive classroom experiences that made them believe EE was possible. Grace explained how her MT used the outdoors to illustrate a math lesson. The teacher,

Got them to measure the circumference of some things. She had them find the perimeter. She had them find pi of everything they touched. And they were just going crazy...That is how she incorporates the environment. It is a very small step but it opens their eyes a

bit. Oh yea, the tree is math. I think these are the greatest things we can give students is to allow them to, you know, analyze the world they live in, in a different way.

There were also placements that illustrated use of the outdoors to incorporate environmental education. Isabelle had a MT that took her classroom out for “2 hours every afternoon” and shared this with parents by posting “articles about how being outdoors is beneficial for kids.” The MT was described as more “open with that and talks to the kids about” the importance of being outside. Casey also had an MT who used the outdoors as her primary classroom and this gave her hope to do the same when she had her own students. Using the outdoors is one approach to EE, but it does run the risk of perpetuating the idea that environment is something ‘out there’ and omitting humans as part of the system (Chapman & Kamala, 2001). Unfortunately, TCs did not indicate that they had learned any concrete ways to overcome barriers to accessing the outdoors, in their placements.

A few of the TCs had a placement in a tourist and education garden. This placement was described as “one of the more green placements” by Ella. Here TCs encounter a variety of local classrooms and conduct the garden curriculum. The program teaches about “migration, habitat, hibernation” and Ella had the opportunity to take students “outside along the gardens so they can look at the shelter walk” and do some “place-based education.”

Environmental education was a way to reinforce good behaviour. Sam noted that environmentally-friendly behaviour was “being talked about every day on the PA system.” Students were reminded to be “mindful of the kinds of food they bring and how they throw it away. These kinds of things are being reinforced over and over.”

**A special note on EcoSchools.** It became apparent through discussions with TCs that those who had any organized exposure to environmental education had it through the EcoSchools initiative. Often, these TCs were recruited for the EcoClub. Casey, Isabelle and Sam were all part of the EcoClub and Holly, Smith, and Kim were at practicums with EcoSchools initiatives but were not part of the EcoClub; Thea attended a high school the previous year that had EcoSchools initiatives and took part in the EcoClub as a student. There were 6 participants in the concurrent stream with less opportunity to be involved in EcoSchools. The fact that there were so many concurrent TCs who were recruited to the EcoClub suggests that this initiative may have an impact on TC beliefs and philosophies.

The EcoSchools mission is to provide environmental education “and a certification program for grades K-12 that helps school communities develop both ecological literacy and environmental practices, to become environmentally responsible citizens and reduce the environmental footprint of schools” (EcoSchools, 2015;2018). Schools enroll in the program and are ranked on different levels of certification. These levels, as seen in Ontario EcoSchools (see Endnote 1), are achieved by instituting a range of projects within the school. According to EcoSchools Ontario, 1900 schools in 58 boards take part in EcoSchools (EcoSchools, 2015; 2018). The EcoSchools initiative focuses on making physical changes in the school, such as waste management, using less electricity/gas and greening the space (EcoSchools, 2015). EcoSchools uses activity-based learning, from simple to technically advanced concepts; the goal of the program is to develop environmental citizens with protective attitudes about the environment (Chapman & Kamala, 2001). As of 2018 EcoSchools has expanded their initiatives to include a more movement focused approach; this includes tenants of growing environmental

leadership (at the school and board level), creating a network of community partnerships and providing support via an online support system (EcoSchools, 2018).

Most TCs understood EcoSchools and how the program worked. Smith explained that in his placement, “they have messages up around the school” explaining the goals of the initiatives. Thea was aware of an EcoClub but was “not sure how active they are.” The EcoClub is an extracurricular activity where a group of students meet and talk about a variety of environmental issues. The EcoSchools program and the EcoClub focus is waste management; this focus was found to be a limited scope by some TCs.

While TCs differed in their support for EcoSchools initiatives, some found that the EcoClub provided a place for them to share with students their interest in environmental issues. TCs could express their personal concerns for the environment with students. Sam was “concerned with conserving resources” and “talked about it a lot in [her] placement as part of the EcoClub.” Kim explained that both of her placements were part of EcoSchools and that the program provided her “opportunities” to do EE, though due to scheduling conflicts she felt that she “never got to do as much as [she] wanted.”

Casey and five students conducted a waste audit as part of the EcoClub. She explained, “we went through the school’s garbage for a day...I think it was a valuable learning experience.” She probed her students, asking “them what they noticed and they said, the first thing was that there was a lot of food waste. Not only that, but there were things that were still in a package.” The EcoClub provided this connection to students and was a platform for brainstorming solutions.

She explained that this exercise,

...Started a conversation, the kids thought they should tell parents that the [daycare children] should have more say in what they are eating, so that they would be more willing to eat their food. And I mentioned a rule that we had at my camp, ‘take what you eat and eat what you take.’ So, trying to think of ways we could reduce food waste.

Maybe weighing the amount of food that is thrown away every day and having a prize for who lowers it... I know that they were getting compost bins when I was leaving. They didn’t have enough for the entire school, but there would be some composting just not necessarily throughout. That was something they were starting.

Waste was a running theme for TCs involved in the EcoClub. Sam explained that her role involved helping teachers run a contest; the winning class would reduce their waste the most and receive a trophy. She recounted that the “entire school is getting involved” and “advocates go around once a week” to keep track of progress. She felt that “a lot is going on” in terms of EE and does not find it as limited in scope as Holly. Thea had experienced the EcoClub as a student in high school the year prior to her concurrent education degree. She explained that most initiatives focused on “the amount of waste from the school” though she did describe that their students acted as advocates and did environmental presentations to elementary schools. Holly’s criticism of the EcoSchool initiative coincided with her overall experience of EE in the classroom, which was negative and lacked support. As presented earlier, Holly was critical of the lack of EE curriculum depth provided to students. She believed teachers underestimated what students could understand, and limited conversation about food initiatives, such as the lack of culturally appropriate food in the food drives. Holly also tended to value grand gestures as part of activism and making change and this may partly account for her dismissive attitude. She did not consider herself an activist for the environment, even though she was seeking opportunities

to make connections for her students in her pedagogy. Casey, alternatively, had more exposure to EE in her placements (in EcoClub, in an outdoor kindergarten, and a MT who allowed her to use alternative approaches to her lessons) and was more positive about the impact of EcoSchools. She also viewed activism as a lifestyle, made up of everyday actions and choices. Being more accepting of smaller actions and initiatives may account for her positive attitude towards EcoSchools.

The biggest criticism of the EcoSchools initiatives was the limited definition of EE and often a focus on making changes to the *building*, rather than the *attitudes and values* of administrators, teachers and students. Those that saw potential in the EcoSchools program – like Sam who was enthusiastic about the competition on waste reduction her school was running – believed the program changed the culture of the school, not just ran programs. Sam valued the awareness it raised via the PA and the involvement of the entire school, whereas Holly felt the teachers did not value it enough in that they kept the exposure at surface level.

This critique was echoed in a study concluding that EcoSchools had no effect on students' environmental behaviors. Students showed “lower utilization values,” but without impact on preservation values (responsible for changing environmental behaviors) (Boeve-de Pauw & Van Petegem, 2013). The experience of TCs was comparable; the focus of the EcoClub was mainly on utilization, such as better use of resources and waste, and not on preservation.

The outcomes of EcoSchools seemed to be: new physical structures, such as new recycling and compost bins, new outdoor spaces, and waste reduction. There did not seem to be a resulting change to the culture of the school in terms of acceptance of EE. These initiatives seemed to be taking place in a vacuum, and the lack of discussion and change in school culture

resulted in students and teachers underutilizing the initiatives. While the EcoClub served as a way for Casey to share her knowledge and passion with students, she felt these conversations “did not go beyond the doors of the EcoClub.” There was implementation of compost bins, so the club members were having an impact on the school in a physical sense, but she felt the reason these changes were important did not interest those outside the club. Likewise, Holly noted that the EcoSchools program did not delve into issues effectively. The emphasis seemed to be on waste management and energy efficiency. She explained that “even with the schools that are gold certified or platinum level, it is only about the school. There may be touches of ‘why do we recycle?’ but not much else.”

Kim recounted that a significant change was made at her school, with the creation of an outdoor classroom, but it was not utilized by teachers. While the goal of the space was to encourage EE, and use the outdoors, the culture of the school did not change to encourage it. She explained,

The school I am at now, a high school, and they do have an EcoSchools program tied in...In the middle of the school there is a quad. So, it is an open area that is used often for lunch. From my understanding, it was sort of designated as an outdoor education space as part of the EcoSchools certification process. So, I feel in a lot of ways it is something on paper.

During the interview, I wondered aloud why a school would make, a presumably costly change, and not use it. Kim believed it was because “school politics” prevented her and others from using the space, making it feel restricted. She stated,



The unfortunate thing is that I have never seen a teacher use it. And despite my own interest, I have never had the opportunity to go out because of school politics of using the space and actually being able to integrate it into the class.

By school politics, Kim means the way teachers are expected to act. If a teacher uses the space, they are viewed by other teachers as wasting time outside, instead of learning inside. She clarified this saying:

So, it is something that ‘oh yeah it is great that we actually have it’ but no one will actually go out and use it. When I proposed, ‘Hey let’s actually use it’, it is hard to convince people that it is a worthwhile thing including my geography department.

There was an underlying message to teachers that using the space would not be a “worthwhile thing”. Discourses on what it means to be a ‘good teacher’ can put limits on teaching environmental education. Even her MT, supportive of EE, felt the need to justify using the space. Due to these attitudes, the space was used mainly for eating lunch. To work against this may require one to be a ‘maverick’ teacher (Ellsworth, 2003). For education, discourses are meaningful because they are a framework of identity; if one deviates from the framework of ‘what being a teacher’ means there is often a fear of being perceived as irresponsible or doing a poor job (Barrett, 2006, p. 505).

Using an alternative method of teaching is risky, and not something teachers often willingly undertake when the dominant culture looks down upon it. A waste audit is a good first step to reducing school waste and having an environmental impact, but the next steps are lacking, a discussion with the entire school and policy creation. An outdoor classroom could help support EE learning but not if teachers are afraid to use it.

While the EcoClub does set out to support EE in the classroom, it appears from the experiences of TCs that there are limitations. On the one hand, exposure to EE through EcoSchools gave TCs an idea of what projects are initiated which is important given the lack of exposure to EE in the B.Ed. program. On the other hand, the narrow focus of these programs may also be problematic. For many, these initiatives did not demonstrate the possibilities of EE, but rather the limitations and lack of support.

**Environmental education in University education programs.** Overall, TCs felt that they were given very little exposure to environmental education in their program. Smith stated he had “never had that [focus on environment] from a professor.” Smith wondered, “maybe I have been in the wrong classrooms? But I haven’t heard much about the environment from faculty professors.” Again, Beth said that “nothing specific” was discussed about the environment, although she does indicate that there is opportunity for discussion, stating “the one teacher encourages us to talk about things we have done in our placements and people have talked about social justice issues and is very encouraging.”

Thea, reflecting on her exposure to EE in the B.Ed. program said, “I haven’t seen anything that is specifically related to the environment.” Alex and Thea also indicated that they had not talked about the environment in their education courses. Alex had an “anthropology course I took that touched upon environment, but other than that other classes and definitely not my education courses, we have not talked about the environment at all.” As mentioned earlier, Grace and Finn had some opportunity to present on environmental topics but that was student driven, not a part of the core curriculum.

In the few instances where EE did come up, the curriculum seemed to provide a scientific perspective. Historically, this is a common conflation, and using this limited frame compromises the larger and interrelated aspects of EE (Wigston, 1977; O'Sullivan, 1986). Finn, who has environmental studies as a teachable, told me her experience was limited to a discussion “about soil. We talked about pesticides and the whole DDT issue and how that affected the environment. That was about it.” Holly, although a science teacher, felt that her science courses lacked environmental content, stating “my 18 hours of science class, there was one hour about climate change. That is it.”

In the primary courses, EE was a broad frame for inquiry. Casey, indicated that there were a few classes, “two or three” where she felt that she could:

really bring up issues about outdoor learning and environmental inquiry as umbrella subjects. I wouldn't say it is a huge focus and I think for a lot of people, um they just don't see it as being realistic.

Two TCs had the opportunity to share their own approaches to EE through presentations. Finn told me that she “did have to do an environmental studies lesson plan” in her geography curriculum class but “that was it really.” During the interview, Grace showed me a group presentation she completed for her B.Ed. curriculum class. When curriculum teachers made connections with environmental topics, or allowed students to incorporate their own interests, there was some opportunity to integrate EE into learning. Sam explained that there was room in the curriculum to explore and define EE, despite not being presented with this opportunity. She reflected on her experience saying,

At the University, I have learned a lot of those things, to look through different lenses, which I was not doing when I first came in, you understand? It makes a difference. Your windows they open.

The subsequent sections will discuss what possibilities and supports are needed for TCs to be environmental educators.

## Chapter 6

### Key Findings: Identifying Barriers to Teaching EE

I asked what barriers TCs had encountered doing EE within their classrooms as pre-service teachers. I asked if they felt prepared to teach EE, and what additional supports were needed to address these barriers. This is an important question since insufficient training has been identified as a major cause of curriculum failure and one of the most important issues facing environmental education (Cutter & Smith, 2001; Knapp, 2000; Pe'er, Goldman & Yavetz, 2007; UNESCO, 1997). The barriers identified by TCs are as follows:

- 1) Need for knowledge and pedagogy
- 2) Curriculum lacks room and space for EE
- 3) A lack of time
- 4) A lack of awareness of the goal to integrate EE
- 5) Lack of opportunity to integrate EE in practicum
- 6) Need for resources
- 7) Need for outdoor space
- 8) Lack of appreciation and support for EE
- 9) Placement and university education program

#### **1) Need for knowledge and pedagogy**

There is a high need for awareness, knowledge and preparedness of new teachers in environmental issues and providing this is often limited in the education curriculum (Ashmann & Franzen, 2017). Some studies have found that low levels of environmental knowledge negatively impacted the ability to promote environmental issues in the classroom (Tuncer, et al., 2009). Having knowledge was what TCs felt they needed to be effective educators, yet the education program is lacking in this regard. The B.Ed. program is also not capitalizing on the interest of

TCs in environmental areas or providing many opportunities for TCs to share the knowledge they have. Recognizing the knowledge from their activist experiences may give them more confidence.

Most of the TCs discussed the need to have extensive knowledge to be a successful environmental educator. Alex felt knowledge is the determining factor to feeling prepared to teach EE. She told me that her “knowledge isn’t extensive. So, I couldn’t, I couldn’t be a teacher of a course on just that (EE). I would definitely need to do more work, and background... But I am definitely interested in taking more courses in the environmental area.” The desire to have more knowledge was especially concerning given the B.Ed. program deficiencies in this area. Diana said “I definitely feel unprepared. I would love to integrate it into my English class if they taught me, I would for sure do it, because I think it is very important.” There were, however, no formal initiatives she experienced that could fill this void. This stands in contrast to the goals of the policy document “Acting Today, Shaping Tomorrow” (OME, 2009) that encourages faculties of education in Ontario to address the subject of EE in the pre-service curricula.

Although Holly felt she could be an EE teacher, this capacity did not come from the B.Ed. curriculum, and therefore, balked at the idea that TCs could effectively do EE in their classrooms. She stated,

Come on. So, unless you are naturally inclined to it, which I am the only one of everyone I have met here. It doesn’t get done. It is sad. It [the education curriculum] is too compressed. There is not enough time.

Teachers were viewed by some TCs as having an area of ‘expertise.’ While Smith saw the benefit of “learning from” other teachers’ “ideas”, he believed that each “has their area of

expertise.” Going outside of where they have formal training and knowledge would make EE, “hard for them to teach.” This belief that teachers require formal training and knowledge is found in the literature (Rogan, 1999; Tuncer, et. al., 2009). Finn, like Smith, has extensive background both academically and through activism, and believed her background was an essential component to teaching EE. During her placement, she taught a geography course that focused on environmental issues. When I asked how she felt about teaching that class she told me, “I guess with my background it seemed pretty straightforward and pretty easy but for someone else, maybe who doesn’t have a background, it would be interesting to see how they thought the course was.” Despite believing passion is more important than knowledge when preparing to teach EE in the classroom, Isabelle felt that to be an outdoor educator, one needed expertise. She told me, “I need to learn it first, so getting a Masters in that area will help” since she did not have “formal education in that area [outdoor education]. Alex wondered how TCs were supposed to teach EE if they did not have adequate knowledge prior to entering the B.Ed. program, noting “If we don’t have a big background on it, how would we know what to teach and how to deliver this topic?”

## **2) Curriculum does not leave room or space for EE**

If the curriculum, both in the B.Ed. program and schools, allows TCs to learn in new ways, then it has the potential to support learning on environmental issues. This could be through presentations on environmental topics, as Grace experienced, or through pedagogy that explicitly makes links between social justice and environmental issues. Providing space for TCs to guide their own learning seems to be an effective way for EE to become part of the curriculum. One large scale Canadian study began to consider what curriculum changes were needed for teachers to successfully teach EE; however, they discovered that community partnerships and teachers’

ability to create their own support networks was the key to success, not solely providing curriculum documents to teachers (Astbury, Huddart, & Theoret, 2009). It was found that regardless of the barriers, if a teacher wanted to do EE, they would. This notion was framed as “innovation on the margins” (Astbury, Huddart, & Theoret, 2009, p.167). That is not to say that the curriculum documents that existed were not helpful and necessary to teachers. The study found teachers utilized and appreciated these documents and information. It was the realization that more curriculum is not the best strategy. Quality documents, even if it meant fewer documents, and policies were sufficient. In conjunction with quality curriculum, administrative support and the space to innovate and work with peers was found to be a better scenario.

As the experience of TCs suggest, there is evidence to support this idea. The first is that EE does not necessarily fit into a curriculum box and TCs discussed the pressure to follow set curriculum guidelines (Johnston, 2009). This made it hard to find space to explore environmental issues and, more importantly, to believe they had agency to create their own space. Teachers often feel that there is already too much material to cover and teaching across disciplines, an effective way to teach EE, is difficult given these constraints (Thompson, 2004; Barrett, 2007; Barrett, 2013). Teachers often feel they do not have the authority or ability to exercise independent judgment when it comes to the curriculum, especially as a pre-service teacher (Klaus & Jaritz, 1996). Even though teaching EE in her classroom was a goal for Sam, she believed that her main priority would be to “go with the curriculum.” She did mention that if it was something her students wanted she would “definitely be a part of it and encourage it...and if I can incorporate something, why not?” While it is widely accepted that EE should be approached through the lens of interdisciplinarity, little is known about how teachers and learners do this in practice (Feng, 2012). Some TCs spoke about curriculum changes, especially



in Geography and French, and how they felt it gave teachers the space and the tools to integrate subjects like EE. Grace explained that the old French curriculum had “a lot of points that had to be covered. Grammar points, literacy points, listening.” She was “hopeful that with the new [French] curriculum a lot of those barriers will dissipate.” Geography is often where links between food and EE are made, albeit briefly (Breuing, et. al, 2014) and TCs, like Finn and Ella expressed hope that the new geography curriculum (see Endnote 2) would provide space to create linkages with environmental concepts.

### **3) Lack of time**

TCs felt that the curriculum did not provide enough time to include EE in the elementary and secondary school day. Holly explained that EE was “a really big conversation” that could not just be inserted into an already full curriculum. There were “structural limitations” (similar to those articulated by Stevenson, 2007) that made having enough time to discuss EE nearly impossible; Holly worried that she couldn’t just “poke at it and walk away” if she wanted to adequately teach EE. Sam mirrored this worry, and although her goal was to “incorporate it [EE] into my curriculum ...there are specific expectations and you don’t have much time to do it.” Grace addressed the lack of time by suggesting a certain period of the year be devoted to the environment. She stated, “Even if they don’t have time to...I can see that being helpful”.

Casey mentioned the lack of time spent on EE in the B.Ed. curriculum. Upon learning about the initiative to integrate EE, she commented “if this is supposed to be a part of curriculum then we need more time devoted to it I would say”. The lack of time to discuss EE perpetuated the belief that TCs “don’t see it as being realistic. They are sort of like dreams, that even if they see the value of it [TCs] don’t think they could incorporate it into their classrooms.” Whether in

elementary, secondary or postsecondary, EE was viewed as something needing time to address. The lack of time, however, does not have to restrict teaching EE entirely; many teachers have been combating lack of time and implementing successful EE pedagogies (Smith, et al., 1998; Rogan, 1999). The key point to reinforce is that, in the absence of any structural changes and administrative support, it is up to individuals to make their own changes. This puts too much stress on the individual teacher. It also makes incorporating EE seem like an impossible goal.

#### **4) Lack of awareness of goal to integrate EE**

TCs also identified a lack of teaching resources as barriers, including curriculum documents, literature, or materials (consistent with Barrett, 2007). The lack of curriculum documents was a major issue blocking integration. This impacted the ability to see how EE was related to other subjects.

In the context section, it was explained that one of the main reasons behind this study was to see how prepared TCs were to be environmental educators. As previously stated, there is an ongoing initiative at the provincial and school board level for teachers to integrate EE into their classroom. Given this context, I asked if TCs had heard of this initiative or if they had seen these documents designed to support teachers in integrating environmental education. Of the 13 TCs, only Finn, Grace, Smith, Beth had heard of the idea of integrating EE into the Ontario curriculum. Finn had environmental science as her teachable, so her curriculum teacher had mentioned it. Finn had a general understanding of where to find the documents “on the Government of Ontario website” and that it was “not just for environmental science teachers but any teacher.” Beth told me:

I did, I have heard of it. The prof said they expect teachers to integrate environmental stuff and there is a document. She just sort of mentioned it. I don't think there was too much around it...She didn't talk about it extensively that I can remember.

Most TCs were very surprised when I mentioned this was a curriculum goal and wondered why they had not heard about it. Alex told me that the first, and only time, she heard about integration of environmental concepts was when “you came to talk to us” to recruit participants. Diana had not heard of the goal but was not surprised given that she saw “a lot of gaps in the program. She appeared quite frustrated, lamenting “of course the Ministry wants us to integrate it, it is hard enough to do it in English but in every subject? And they don't tell us how to do it at all.” Grace echoed the lack of awareness. She told me:

Yea we don't know. We honestly don't know. If I didn't do this [group presentation on EE] I would not have known. I saw a lot of really big eyes when I did this presentation. We don't talk about it. We all have our own teachable areas.

The lack of awareness, per Grace could be tied to the structure of the education program. Students stick to their own teachable subjects, and there is little “across the curriculum” discussion. Casey was the most surprised of the TCs. She prided herself on taking a keen interest in environmental issues and focused her teaching on it. She looked at me, perplexed and said

No. I am like...as you are saying this I am thinking, if that is one of the goals of the province then why don't we have a class? We have a language class we have a math class...why is there...if this is supposed to be a part of curriculum then we need more time devoted to it I would say. And I am very interested in this. I didn't know that 2009 that this was a thing.

Her last statement stood out to me. She is a TC who would have researched these documents and made connections on her own time. Even knowledge of the concept would have impacted her teaching and perhaps, helped her form more practical ways to do EE in her classroom. Likewise, Thea told me that:

So far, I don't see it yet in my courses. But if the teacher candidates know about this, and they know that the curriculum is changing this way to get an advantage or to be more knowledge of something they may potentially have to teach to their students they would be interested in taking courses about it.

Both Thea and Casey mentioned that the TC population is interested and that a course would be beneficial. Most TCs were supportive of the goal to integrate EE throughout the curriculum. The belief that integrating EE is beneficial is consistent with literature that suggests pre-service teachers need to be prepared to infuse EE, and that it is an essential component to the curriculum and must align with the activities of teachers and students, in order to counteract the normative rhetoric of schools (Powers, 2004; Cutter-Mackenzie, 2010). Alex believed that “making people aware” of environmental issues through integration is “a good thing.” She felt that as:

Students I mean, they are so young and they are impressionable, so this information that we give them is going to stick with them and if it resonates with them, they might go out and want to pursue this if it matters to them. So, I think it is something they [policy/curriculum] should be doing.

Spreading awareness connects to how TCs defined activism. Many TCs believed that it was via this ‘awareness raising’ that change could take place.

While Casey supported the idea, she was less hopeful about it coming to fruition in the curriculum. She said,

I don't know. I think that it shouldn't be some tangential idea that maybe someone will practice or not. I think if it is important and they want us to do it there needs to be a more concrete approach for it to be a reality.

Likewise, Holly explained the difficulty of this plan. She explained that teaching is “a very hard job” and that integrating EE would “be difficult, but it should be there...it will just be tricky. Look at the health policy we have been discussing for years and years.” Another TC, Ella believed that like any change in the curriculum integrating EE was going to take time and support. She brought up the Bondar report on environmental education and explained that:

...it is not only teachers that have to do it but administrative. Everyone has to work in the school community to make this possible...and it seemed that the Government or Education Ministry said “that is a great idea, let's do it” but nothing was really done afterwards...I think there needs to be a step by step process... because with no deadline it goes to the bottom of the priority list.

Ella believed that holding teachers accountable and giving them clear guidelines and deadlines was one approach to integrating EE.

There was only one TC, Smith, who was not supportive of the goal to integrate environmental education throughout the curriculum. He explained, “I have heard of this initiative. I think it is a bit of a riot.” Smith, of all participants, has spent several years doing outdoor education and conservation education. He was very passionate about the environment. This was evident, not only in his experiences, but in the way he talked about the environment

and critiqued a number of approaches to EE. While he can see space for EE in some subjects like literacy, he fears that integrating it will diminish EE to a brief data point for those teachers who do not have knowledge of EE and passion. He explained,

It feels like one of these band aid fixes that happens with the environment all the time.

Like teach the environment in math! Unless you have a good knowledge of the environment you are not going to be able to transfer that into a math lesson or skill.

Most TCs were positive about integration, and like Smith, were critical about the practicality of this approach. Smith, however, seemed to be more comfortable with the idea that teachers had an area of expertise and that curriculum could remain divided into subjects. He told me,

Everyone teaches differently, and everyone has their passion and if we all were there for environmental care then the students wouldn't come out well rounded. But I find teaching, say EE as part of my curriculum in grade 6 and then someone is very passionate about sports and gym in grade 7 it creates a more rounded student.

This was a point that no one else brought forth. The idea that each teacher has unique perspectives is something that I believe most would agree with. Smith seemed to put value in authenticity, which is something other TCs did not mention. While Smith and Finn believed strongly in the need for knowledge to be a successful EE teacher, Smith really focused on genuine passion for the topic. This emphasis on the individual may be due to the lack of systemic support Smith felt in the program. His passion for the environment was also a source of pride, thereby focusing on that factor as the way to successfully teach EE.

### **5) Lack of opportunities to integrate environmental education in practicum**

Despite not being aware of the initiative to integrate EE into the curriculum, TCs spontaneously suggested integration could occur. This is important, because TCs identified opportunities or gaps in the curriculum that offered ways to fill these spaces with EE, with little to no formal preparation.

Grace was hesitant to provide a plan for how she would integrate it; she felt “still being in Teachers’ college I don’t have as much leniency, but I will, and I will try to incorporate it. But how is that big question. I don’t want to get lost.” Other TCs offered a variety of ideas, over a variety of subjects, including science courses, language and literacy, on how they would integrate it into different subjects. It appeared that most of the TCs focused on the notion of environmental education as *about* the environment. In this case, curriculum would integrate ideas about environmental topics, like ecosystems, or an environmental issue in the newspaper. The environment was used as a tool to learn about the concepts in the dominant subject matter, for example concepts of literacy on an environmental topic. There was some mention by Ella and Casey about integration occurring outside and using a more hands-on approach, learning through the environment, via gardening or observation.

Alex saw the opportunity to integrate it in “9 and 10 general Science” and “just to bring that awareness and to make students know about it and show it as something they could potentially go and study about in the future, because if you don’t have any courses like that, who would know to go into environmental studies or science”. The potential exposure, or awareness as Alex put it, was an avenue to future studies for students, not just awareness of environmental issues. Similarly, Beth saw the opportunity in science curriculum. She told me “I think most are

related, food and water, students can understand those and they are part of the science curriculum. I think they do relate and I think they can be integrated into it”

Thea wondered, “So, maybe something like examining a newspaper article about an environmental issue in language arts instead of reading a book that is 100 years old?”

Holly found her inspiration for integration of EE in language arts as well:

Last week I was introducing non-fiction texts. So, I pulled out a science magazine that had a picture of two rhinos. One had had its horn viciously removed. I showed them the picture and we were talking about the non-fiction aspect of it, one kid picks up on it. And asks, ‘what happened?’ And of course, we talk about what happened. And another one goes those people are horrible how they could do that to the rhino? And I go ‘well the person that actually did that to the rhino is actually probably extremely poor.’ So, then we go into the global implications of that, ‘why are poor people being paid to do this?’ I integrate it into whatever we are dealing with. It is not like we are talking about a specific environmental education today. It is just part of our everyday conversation.

Wesch (2008, p.6) has noted the importance of students having a role in their own education thus realizing the impact they may have in society. In the example above, Holly takes note of what students are interested in and values their questions. She addresses the importance of EE and also makes students an important part of their own education.

Ella felt that integration, even in a subject like French could be accomplished. Much like Grace, Ella saw the use of culture and food as a connector between environment and language. Grace believed that integration in French was possible because there “are so many avenues in language, it is such an open-ended concept.” Ella explained, that



you can implement all sorts of environmental concepts into French. For example, you can take a French story that is about the environment. Or there is a nice little restaurant that is called La Papillion and maybe there is a butterfly garden in the back, something fun like that. Where they can learn French but in an environmental setting.

Grace was hopeful that the new French curriculum could provide opportunities, like the one's Ella described. She told me,

It is very detailed it has a lot of open doors for how to get that information. With literature for instance. There is no resource provided for it but there are ideas and that integration would be possible.

Although Smith was firmly against the idea of integration for all teachers, he did offer ways he would do it in his literacy class. He shared he would love to do a lesson where “we have all these tracks and tell me how you went about identifying them, what animal this would be. You could do that as a literacy lesson and still be teaching environmental education.” In his initial response, Smith joked that math would not work with environmental lessons, yet he explained a lesson where he would do environment and math together, when talking about his goal to integrate EE into his own lessons.

In grade 7, learning how to design a greenhouse is building with your angles, does this reflect this? Can I take this evenly? You can do all sorts of things with it. So yes, I want it to be a large part of my classroom and I feel like because it is a knowledge base and something I am passionate about it is something that the students will get from me.

Nearly all TCs were in support of integration given the right supports, and already incorporate or plan to integrate EE into their teaching. Greater exposure to the idea of integration

and increased opportunities to learn about environmental education may provide more teachers with additional tools to use these ideas in every day classroom conversations. The TCs who are already invested in integrating EE into their teaching may benefit from sharing their knowledge and passion and make deeper connections with these ideas and resources.

## **6) The need for resources**

Finding resources to teach EE was a challenge. Smith expressed the common experience of struggling to find resources that both supported the curriculum goals for the classroom and were about environmental issues:

When you start finding resources, it is the hardest thing to do for anyone. Even the class I am in now, finding short stories for a short stories unit, it is hard to do. Ones that students are interested in.

He believed, that as teachers or student teachers, it would be helpful to be provided with resources and documents, “even something general a teacher could adapt. A list of ten issues and choose three that you think your students would be interested in.” Again, there are resources available, but TCs are generally not aware of them. In “Acting Today, Shaping Tomorrow”, faculties of education are encouraged to share and access resources such as the Ontario Educational Resources Bank and e-Community Ontario that provide many EE resources (OME, 2009). Thea believed that if the school was “informing them” about how to get materials, even “something really simple, like a lesson on how the environment or food chains” then integrating and teaching EE could be an attainable goal. Diana shared this enthusiasm but had some requirements. Environmental ideas are something she felt “we should know about” and felt “it is

a good idea to integrate if possible, if the teachers know how and if we set up a mandatory program for it.”

TCs felt that with adequate resources they could be successful when teaching EE, and Grace felt there had to be a “standard” within each school and “resources available” so that teachers could work together and improve upon EE in the classroom.

Being a teacher who focuses on environmental issues is what Casey “aspire(s) to be” and she felt prepared “to a certain degree...I know about resources I can use and I do use those. But so much of it is practice and I think I will just get better and better over time.”

Those with access to resources felt more prepared to teach EE. Beth explained she felt a ‘bit better’ about teaching EE “just as I am seeing how many resources there are available.” Her placement provided her with insight about accessing community programs with environmental aspects. Finn told me, “I do feel that I know where to find resources and reliable resources as well instead of fluff. And where to find something legitimate. I am sure there is more out there that I don’t know about” and that this knowledge made her feel “ok” about teaching EE. This knowledge of how to find valuable resources came from past education, not from the B.Ed. program. She told me,

I haven’t really explored things at [the university]. And I have all my resources from my undergrad courses. So, a couple of my projects, I will go back through my old notes and um the resources they have given me from environmental science (undergrad).

This explains the importance of having access to resources and the comfort to access them. The resources she has access to, however, are informational and while they could be used to supplement the content of her teaching, they would not help her with the pedagogy in her

classroom. These TCs felt that the lack of pedagogy support seemed like a wasted opportunity for those who had the desire and interest to incorporate EE into the classroom. As Finn notes “you really have to go out and search for things” since they are not provided within the education curriculum.

Smith explained that he would utilize his personal resources, such as snake and bird nests. He did wonder about the fact that “the teacher down the hall may not” have access to this and that “a school needs to start investing in these resources if we are going to do EE.” Casey noted that she has found resources through school. She named a book entitled *Natural Curiosities*. She explained “I intend to pick it up and I am sure it is going to help me. I think just like finding more and more websites and places in the city I can hopefully go to and carry out some of these ideas.” In her statement, availability of resources has an impact on feeling prepared and the B.Ed. was a potential place to find these resources.

## **7) Need to access outdoor space**

Some TCs felt that the inability to go outside impeded EE. The need to be outdoors is identified as a gap; applying this way of teaching is discordant with the reality of the school system (Robertson & Krugly-Smolka, 1997, p. 313). The TCs in the study recognized that ‘outdoors’ was often a defining aspect of doing EE. Casey explained that EE was about “actually using the outdoors as a teacher [...] I think that is the seed for, you know, environmental compassion.” Thinking back on his own definition of EE, Smith described that he had “always thought of it as being outside.” The lack of outdoors space or the ability to bring students outside was integral to doing environmental education since “it is hard to have EE when you have them

indoors.” Since TCs being outdoors is part of how TCs define EE, it is no surprise that the lack of access to adequate outdoor space is viewed as a barrier.

There were “principal’s rules” that kept Ella and her students indoors at her French volunteer position. The principal was concerned about students “running around on the field” and creating a mess on the outdoor space. To get around this restriction, she keeps the windows open, allows students to move around and stretch and start discussions about the weather. Isabelle was displeased by the lack of outdoor space to do EE, laughing when asked about it. She told me “yea when you tell people that this is a kindergarten area, they say really? It looks like a dog fenced-in area.” She wanted to incorporate the outdoors into her teaching, but felt the space was lacking and uninspiring. Teachers often feel restricted in their efforts to do EE due to the lack of outdoor space (Robertson & Krugly - Smolska, 1997). While this may be true, other authors argue that reframing how teachers think about EE is important. One suggested that instead of being caught up in the difficulties obtaining space for gardens and other EE activities, teachers should reconsider the approach to teaching it. It was revealed that there was too much emphasis on “leaving the classroom” as a necessary component to teaching EE; students in one study explored food justice as a “living example” by creating a locavore meal without having to leave their room (Breuing, 2013, p. 169). TCs would benefit from a reconsideration of the way they understand teaching EE and FL. Innovative approaches could help TCs conceptualize how to integrate EE into their indoor classroom.

### **8) Lack of appreciation and support for EE**

TCs believed that having support, both in attitude and in practice, from professors, MTs, school administration, and parents was essential to overcoming barriers. Having supportive and

perceptive faculty was found in the literature to be a necessary component to integrating EE in the pre-service curriculum (Klaus & Jaritz, 1996) so the lack of exposure and appreciation by faculty and MTs would not be surprising.

The MT relationship, and amount of support they provided, impacted how prepared TCs were to do EE. Isabelle discussed how a supportive MT contributed to her overall positive outlook on EE. She explained that one of her MTs had an overall “really positive” approach to environmental issues and “didn’t really talk about any barriers.” Thea relies on mentorship from her environmental studies high school teacher, stating “she always tells me some of her experience and the things she has learned in university.” Sharing these experiences has given Thea insight into what she needs to teach EE in her classroom. Casey had a supportive MT, who was willing to allow her to explore integrating EE into her classroom. She explained that EE is “talked about” with her MT and that “she was supportive. She definitely sees the value of it but she also feels the pressure to assess.” However, this positive support, from principals, administration and parents was lacking and worrisome for many other TCs.

Finn had a negative experience with an MT, who undervalued environmental issues. She was particularly disheartened because her MT said she “didn’t need environmental studies teachable to teach this course, anyone can teach it.” She felt that was “a blow” to her preparation and interest in environmental studies.

Despite some positive experiences with MTs, putting that support into practice is often a struggle. Holly felt that TCs “don’t always have a choice” and “that is a barrier.” She said the way the system is set up, some “MTs only allow certain concepts, so if you try to go outside that you are going to be sanctioned.”

Isabelle, despite having an MT who supported the idea of using EE in the classroom, had some difficulties implementing her ideas. She explained that she saw an opportunity to integrate EE into a lesson on light and sound, but felt she had to follow what her MT had planned instead. She told me, “I had to focus on what he [the MT] wanted and that is what we tested on it. Not how it impacts us or the environment. It sucks that it happens, but I find [EE] is overlooked.” Casey felt pressure to do things the standard way, especially in terms of assessment and evaluation. When she conducted her environmental lesson, based on observation as a valid measurement, students wanted a more concrete approach such as a test to get a measured outcome. It was too risky to solely use her approach, for fear of being labelled a teacher who does not do her job properly. While her MT supported her in implementing her lesson, she was cautioned against only using her method of evaluation. In the end, Casey provided both her observational method and a less controversial, traditional one. These experiences demonstrate that support should come, not only from having an appreciation for EE, but from a practical standpoint, so TCs can learn how to integrate their ideas into their curriculum.

## **9) Placement and the university education program**

Schools often dismiss environmental knowledge or remain apathetic about integrating it. Environmental education is often viewed as an add-on or “concealed and marginalised in policy and practice” (Sterling, 2001). If students are exposed to environmental education, it is often through environmental science, where availability is “sporadic” at some schools and “negligible” in others (Sterling, 2001). Isabelle was one TC that felt prepared - “definitely in some ways” - despite having no formal EE curriculum in the B.Ed. program. This was due to her belief that “being able to teach about the environment was a “mindset you have to have.” For Isabelle, knowledge of the environment came from “the care or love of wanting to change or do good”

rather than from being “a specialist of taking any extra courses.” Since her feeling of preparedness seems to come from within, it is not surprising that the lack of exposure to EE in the education program did not impact her negatively. Thea commented that the concurrent education program seemed to leave out food literacy and its connection to the environment. She expressed, “within the [continuing Education] program I haven’t really noticed any relation to environment/food literacy which is kind of disappointing because I feel like these topics should be included as well especially with the state that our worldwide environment is in.” TCs saw the potential and importance of food and environment, but it was not being addressed in the education program.

While Smith felt prepared to teach EE due to his own outdoor work, he noted he has not “heard much about the environment from faculty professors” but he did hear about it from an MT. Beth did not recall any mention of environment. She thought for a while then stated, “No, nothing specific. The one teacher encourages us to talk about things we have done in our placements and people have talked about social justice issues and is very encouraging.” Alex felt that her interest in EE was not valued, saying “no it isn’t supported. So, I think if it was, us as teacher candidates, would feel more comfortable with the subject.”

Holly said that environmental studies was “dismissed because it is not something easily assessed...There are not a lot of parents out there saying teach my kid about the environment, make sure they appreciate it.” Isabelle noted that she has viewed “big math and literacy initiatives” but a lack of “big environmental initiatives.” Diana noted the lack of food initiatives believing “schools mostly focus on waste management, because it directly impacts them. Whereas, something like food accessibility is not so readily available to discuss because the school isn’t affected.” While Diana may believe the lack of support for food literacy stems from



the lack of impact at the school level, this is not always an accurate observation. Holly gives a direct example of how food accessibility directly impacts her placement school. In terms of food programs, Holly reiterated her opinion that there is “no discussion regarding food issues...no discussion on what the food is.” While her school has a snack and lunch program she mentioned it was a cooperative store run by a volunteer. The store acted as a delivery system but the school missed a huge opportunity to create food literacy. Located in an “impoverished area attached to a women’s shelter,” food was, for many, “a lifelong issue.” Whether due to a lack of appreciation or understanding, the difference of opinion about the lack of food and environment initiatives impacts the support TCs feel.

Ella has experienced firsthand the obstacles to implementing environmental initiatives (waste reduction program and green roof) and sees administration as a barrier to implementing these projects. She told me how “frustrated and discouraged” she was when meetings with administrators were continuously postponed. This was viewed as a roadblock to her future teaching. She told me “so that is why I am thinking in the future, if I were to start a club and if there was even the slightest bit of an obstacle with administration...it would be difficult.” Ella was similarly frustrated, finding that success hinged on the cooperation and support of administration as well as support from parents. She explained,

You can’t just do what you want to do already even if you have everything, you have the manpower, you have the vision. For some reason, they won’t let you.

Finn stated that EE “is not important in the school boards, it is not important in the schools, it is kind of looked at easy and silly” and students often “don’t know or don’t care” about environmental education.

Smith and Casey expressed concern about being viewed as a controversial teacher for implementing EE and for not doing the job properly. The “tough work of good education” (Jickling, 2003, p. 25) is to expand our questions, and on environmental topics to include different voices and not shy away from controversy. This course of action, however, is often met with little support. Smith believed he had to be careful not to upset parents by doing something controversial:

How are we going to teach environmental literacy if we are afraid of doing anything? I don't honestly have an answer, but there is so much you can get in trouble for or people get upset about, if a parent sees as controversial you could be threatened and sued and lose your job and go through all these meetings.

In summary, TCs put forth several barriers in teaching EE. These barriers will be further expanded upon in the next chapter with what TCs felt were solutions to these issues. TCs felt that a lack of knowledge and pedagogy limited their exposure to ideas and concepts, thus affecting their overall confidence to tackle EE in their classroom. They believed the curriculum did not leave adequate space or room to explore EE and they felt tied to tasks that needed to be covered. There was a general concern about lack of time to teach EE. TCs had very little knowledge that they were expected to integrate EE in their teaching. The education department and the practicum placement experiences also posed some barriers – there was a lack of opportunity to explore EE due to lack of support from MT's or lack of resources or access to outdoors. Overall, TCs felt that EE was not something that was appreciated and supported. The consensus was that the B.Ed. program and the practicum experiences did little to inform, expose or educate TCs on EE. They felt EE was underappreciated and underrepresented. Most TCs did not mention food literacy directly. Most of the discussion or examples given did not include food

issues. This was due to the lack of engagement with the issues. It received almost no mention in their experience in the B.Ed. program, and in the practicum, was limited to snack programs.

## Chapter 7

### Recommendations

Based on the barriers that TCs encountered I wondered what they would propose as solutions to these barriers? I asked them what supports that they needed, in order to feel prepared to teach EE. For teachers in training, being adequately prepared is essential to design and implement effective environmental education in their classrooms (Pe'er, Goldman & Yavetz, 2007). In summary, TCs felt that the education program did little to prepare them to be effective environmental educators. Feeling prepared depended more on personal activist experiences; MTs or past mentors; the availability of resources; ability to connect to other students; more time; and formal instruction. To address barriers and feel more prepared to teach EE, TCs believed that they needed:

- Experiential learning and integration of activist experiences.
- An integrated EE curriculum in the B.Ed program
- Support and opportunity to connect with peers
- Increase opportunities to learn about EE curriculum. This curriculum would include more time, resources and adequate physical space;
- Increase discussion and exposure to Food Literacy

It has been said that education policy, curriculum and structural changes should be derived from teacher experiences (Robertson & Krugly-Smolska, 1997; Fien & Maclean, 2000; Grace, 2000). The goal of this study was to gain insight into the experiences and understandings of TCs in the education program. By reflecting on their personal experiences, TCs articulate the

origins of being confident and prepared to be an environmental educator. In turn, this information can provide recommendations to improve EE in their practical experiences and in their own training to be educators.

### **Importance of past experiences and experiential learning to environmental education**

The B.Ed. program should enhance opportunities for TCs to engage in experiential learning. TCs found field trips and hands-on experiences impactful and meaningful. How to integrate the materials and resources into their own classroom would be part of the enhancement. This could be done in a variety of ways, including art, written assignments, self-reflection or group discussions. These suggestions provide ways to integrate EE into a variety of school subjects and can be adapted easily to fit various curricula. In terms of past experiences, TCs felt they had interesting and unique experiences that were not being recognized. Not only would recognition increase confidence to incorporate EE, it would also let TCs know that these experiences are valued. TCs felt that if they could share their activism and volunteer experience, other TCs would benefit from being more aware, inspired and able to access resources. It would also allow TCs to form relationships among like-minded TCs, who could support each other in the program through peer support, team teaching or extracurricular activities.

Individual experiences, and the ability to take part in experiential education, had an impact on feeling prepared to teach EE. These experiences ranged from activist work, past employment, firsthand involvement, and familial upbringing. Most were informal experiences that gave some TCs confidence to teach EE. This is important because it speaks to the idea of innovating at the margins or outside the curriculum, where TCs can use personal experiences to make direct connections to EE, and not rely on curriculum or formal support (Kugelmass, 2000;

Astbury, Huddart, & Theoret, 2009). Due to her numerous environmental experiences and volunteer work, Grace believed she was “prepared to be a vessel for it” in her teaching; she felt this experiential learning helped her develop as a teacher. Alex believed her volunteer work has “given me more experience, with students and their parents.” Alex has the desire to take more classes and learn more about EE but they have been unable to satisfy this desire within the B.Ed program. Holly also felt prepared because of her “own interests and research but not through the program. There has been nothing, absolutely nothing throughout the program.” Finn felt prepared “to a point” but again, this feeling of preparation came from her past courses in environmental studies. She wondered if one “would be as thorough or would be as passionate about it as someone who does not have an undergrad in it, or the environmental science teachable.” Sam felt her preparation came from her work in the [name omitted] system of education; “My knowledge has come from there, not from something at [the university]” she stated. Another TC, Smith, felt prepared to teach EE due to his upbringing. He explained that:

I feel prepared because I have the parents I did. I didn’t take EE ever as a course, I have done some self-research on it but growing up I have had two parents who are interested in it and cared about it and who made sure I was outside.

As with many other TCs, the impact of past experiences is significant, so much so in the case of Smith that he does not see the need for formal training. ‘Feeling prepared’ has many dimensions. While Casey felt that school provided her with resources to teach EE, she ultimately believed that it did little to prepare her to be an environmental educator compared to her level of passion and activism. She told me, “I would say most of it comes from my own passion and fund of knowledge. But has school made me prepared? I don’t know. Probably two out of ten.”

An increase in experiential learning, such as community partnerships and field trips, may increase knowledge and interest in EE. This is typically how EE is addressed in Canadian elementary and secondary schools, though it requires time and space to do so (Breuing, 2013). Experiential learning, even from long ago, impacted how TCs felt about being environmental educators. These experiences were often tied to the reason they began doing activist work. While Alex lacked a formal background in EE and “wasn’t really aware of that stuff”, she recounted school field trips growing up.

I remember going in grade nine, for our science class and going to the centre and seeing all the stuff they do, using the renewable resources and stuff that is like...you don’t think is such a big change to make in your life but when a lot of people do it, it just makes such a big difference.

This experience inspired her to volunteer at the site and has “given me insight...one, it is a great volunteer opportunity. It has given me more experience, with students and their parents.”

Similarly, Thea recounted a learning experience where she was taught,

...how to eat environmentally friendly. Like using re-useable bins and stuff. That was really fun, I still remember feeding black capped chickadees from my hand [...] I think that is important to remember these experiences and remember why the earth is important to you.

Another TC, Isabelle also reflected on the relationship between experiential experiences and her ability to teach EE. She recounted:

I went to Lake St. George which is a Toronto region conservation area and we stayed on an overnight trip and went cross country skiing and made a fire and learned about

animals and those experiences, those trips were more, made an impact on me than what my teacher said in the classroom.

### **University education programs should mirror an integrated environmental education curriculum**

Interestingly, some TCs wondered why the program did not mirror the curriculum they were supposed to tackle in their own classrooms. The goal of education is to integrate environmental ideals and it was posited that the education curriculum should do the same. Thea believed that incorporating environmental studies courses into the education program was one way to improve “the structure of the program”. Alex wondered aloud to me “in the education courses we take now, there are different components that are integrated already...As I said we haven’t talked about it [the environment] in the courses.” She mentioned they had talked about “different cultures” and but they “haven’t spoken about the environment.” I asked her what this integration could accomplish, and she said that it would make “teacher candidates feel more comfortable.” TCs understood that EE was an integrative concept, and that teacher training should acknowledge the multiple dimensions of EE (Klaus & Jaritz, 1996). A recent study investigated the ways in which teacher candidates were prepared to teach EE and found that, much like the results of this study, instructors did not often include EE in their teaching or reference social issues in connection to EE (Ashmann & Franzen, 2017). Integration of environmental ideas, however, may help TCs obtain more formal training. The program studied here, similar to a study of several education programs, has an optional EE; students may not choose it, meaning a TC may never be exposed to EE as a subject (Ashmann & Franzen, 2017). Holly said she had no exposure to environment in her courses. She said, “It is more about bringing in investigative techniques...I didn’t get to take the environmental education course,



and there are many reasons for that.” Not being able to take the course, she felt her exposure to environmental subjects was limited. An integrated curriculum for TCs may help alleviate that.

### **Increasing opportunity to connect and share with peers**

Generally, TCs felt like there was a lack of discussion about environment in the program (see How EE is Defined in the B.Ed. program). This lack of discussion is a missed opportunity, not only for TCs to learn about the issues, but for those with an activist background to share with others. Creating collaborations between community organizations and passionate teachers is a way to support teachers who want to do EE (Astbury, Huddart, & Theoret, 2009). Likewise, Casey felt that while she had not done it yet, making the connection between her community work with her cycle organization and the David Suzuki Foundation and her curriculum was possible. Thea felt the courses should make them “more aware of the issues” before they “move on to being teachers.” In practical terms, this means that TCs are missing out on utilizing resources and connections they already have. Maintaining partnerships and supporting collaborations between community groups supports teachers in a variety of ways. It enriches the classroom, with new ideas and new materials, and may help fill the gap where teachers lack confidence. It also reinforces the ideals in EE, where activism for the environment is defined as action and making a difference. The connection and reconnection between past experiences and current pedagogy can occur by engaging in reflective processes – which “enables educators to refine their practice, in response to the contextual circumstances of their work, and supports continuous development of effective pedagogy, processes and policies in schools in response to changing knowledge in the field” (Daniel, Auhl, & Hastings, 2013, p. 159). The responsibility of raising awareness and sharing experiences should not fall solely on the professors in education.

Casey specifically mentioned a way to share ideas with her peers that she believed would be helpful. She told me:

I mean, for sure if there was a group that I could become a member of where all we did was how we could take our learning and transform it into practice, like I would go every week. I definitely would take any opportunity to take help and resources to make my ideals a reality. So, are there opportunities? I feel bad saying it but maybe limited opportunities.

This is something that faculty needs to encourage, so that students feel permission to connect with one another. Making a conscious effort to connect with other professionals and sharing ideas and resources within education is often called creating a community of practice. A group of teachers within the community share feedback regularly, reflect on their experiences and together, examine how concepts are understood in the current system (Han, 1995; Hatton & Smith, 1995). This type of community could create connections between activist TCs, helping them expand their knowledge and resources. This could be encouraged through curriculum courses in the B.Ed. program or through the creation of cohorts of likeminded students. Cohorts offer students interested in specific themes extra focus, learning opportunities and courses to support development in that area. Cohorts are used in a variety of education departments, mostly in graduate education programs such as the Critical Environmental Education cohort at University of Saskatchewan (University of Saskatchewan, 2015), although some undergraduate education programs (e.g., Ottawa) have cohorts focusing on Urban Education (Faculty of Education, University of Ottawa., 2015) and York University has the Indigenous Education specialized program (York University, 2015). Utilization of social media fora could help facilitate face to face or virtual meetings as a club or informal group. One study found that

creation of communities of practice in the B.Ed. program provided helpful and uplifting feedback, and that sharing their experiences made them more aware of its' impact and relevance to teaching (Daniel, Auhl, & Hastings, 2013).

### **Provide learning opportunities for environmental education**

Most of the suggestions by TCs revolve around access. Access and awareness are two major themes that keep reappearing when TCs talk about being prepared to teach. Smith indicated that a professional development [PD] day would:

...not work because most teachers don't care about it. There has to be something created for teachers to even...a resource that says these are big issues, a summary, websites to look it up, a couple of videos and then you can tie media literacy, you can tie in an oral presentation, you can tie in a whole bunch of stuff.

Smith sees opportunity to make connections between EE and different curriculum goals, but believes the resource is better left to those who want to access it, rather than a single day of education for teachers. A more substantial, and permanent document, may provide teachers with the resources they need. Grace indicated that awareness and resources were also necessary to be successful. She felt that teachers needed "a direct link" to the environment with "given times of the year where certain points can be addressed" and that "if it is known by all of the teachers they can choose how to incorporate it by their lessons."

Grace felt that the "bottom" [i.e. teacher candidates] should be more aware of environmental education and that "projects like these [her sustainability education presentation] should be mandatory." Incorporating options for TCs to make links between curriculum goals and environmental issues would provide resources for new teachers, as well as raise awareness

of the goals to integrate EE into the classroom.

Thea described the opportunity that taking a course on the environment provided. She told me that she “found it interesting the number of topics they talk about and how events in a person’s life can teach us about the environment and solve environmental issues, like religion and education and the way they eat.” Making these connections in a focal class setting was useful to these TCs but there are not a lot of opportunities to take these courses. Education students may take courses in other faculties, so this is a possible way to supplement the B.Ed. curriculum with environmental issues. Diana sought out an environmental education course and thought “it could be relevant.” She said she “was the first one to take it” out of the other education students she knows. This course, however, is not advertised to other faculties and has space restrictions.

There is one course within the Faculty of Education that focuses on EE which is very popular and at capacity each year. This course offers information on a multidisciplinary approach to EE and one that I targeted for recruitment. Although I had a few inquiries, ultimately none of these individuals felt they met the criteria for the study. None of the participants who completed my study had taken this course in the past. I specifically asked Diana if she had heard about this course and she had not. It is, of course, the responsibility of TCs to seek out their own courses, but it appears there is a program design problem regarding courses, scheduling conflicts, and choice.

It is important to remember that these observations are based on the experiences of TCs. It may not be realistic to expect TCs to have a solid understanding of how relationships and processes within school boards, Faculties of Education and individual schools operate. This is

especially true for concurrent education students who are mainly participating in their undergraduate courses, not focusing solely on their education degree. While TCs seem to understand that making a change is a complicated process, they lack full knowledge of the many aspects involved.

### **Increase discussion and exposure to food literacy**

TCs did not provide many recommendations to address the lack of food literacy in their program or in the practicum. This was due to lack of exploration of connections between FL and EE. TCs like Holly focused on the need for more discussion to make connections between poverty and food. Holly believed food literacy “needs to be part of mandatory curriculum and part of provincial mandate. TCs are not aware of it...there is a lot of information we don’t get so it is missed.” She believed it is a “simple message that should be embedded” in the curriculum for TCs. She did not, however, provide specific suggestions on how to embed food into the curriculum. Likewise, Grace believed that leaving more opportunities for curriculum to connect with students’ interest may be one way to fill the lack of FL discussion. She chose to do a group project on food literacy, because she was given the choice and it was important to her. This not only allowed her to expand her knowledge, but she could expose her fellow classmates to these ideas. The suggestions for improving food literacy seemed to remain very surface level; TCs focused on exposure and knowledge or discussion of the term. Much like their lack of understanding of FL and its ability to connect to a variety of environmental and social issues, their suggestions lacked specificity.

## Chapter 8

### Conclusion

In this chapter, I provide concluding thoughts based on the results of the study. First, I will address each research question, beginning with how TCs define the terms EE, FL and activism. I will provide conclusions about what can be learned from TCs' experiences, explore how to fill the gaps between activism, EE, and FL, and provide information on EcoSchools and integrating EE within the curriculum. Given the lens of the study, I have included a section entitled "Personal Reflections and Professional Recommendations" as a way to demonstrate how this study has impacted my own practice and recommend changes to the B.Ed. program. Lastly, a section on the limitations of the study and future research areas is provided.

### General Findings

One of the main research questions of this study was to explore how TCs defined and understood certain terms, and what these definitions said about the relationships between personal experiences, school systems, and education. The first research question was:

"Given the Ontario Ministries goal for teachers to integrate environmental education throughout all subject areas, how do TCs define and understand the terms Environmental Education (EE), Food literacy (FL)?

**Environmental education.** The goal of EE, per TCs, was to share their passion for the environment and food with their students to make a difference and inspire them to care. EE was defined by most TCs as interdisciplinary. EE should demonstrate the interconnectedness between systems, humans and the environment. There was the propensity for some TCs to place emphasis on scientific facts and figures when discussing EE, while others noted the danger in relying on

this type of narrative. They believed that limiting EE to facts does not inspire others, but makes environmental issues seem impossible to tackle. Some TCs found defining EE difficult due to the broad and multi-faceted nature of the environment. Integrating EE into the classroom was meant to raise awareness of issues, to inspire a change in behaviour and promote action. How TCs defined EE was impacted not only by their activist experiences, but by the way their school placements, and the EcoSchools initiative framed and approached EE. During their experience in the B.Ed. program, TCs lacked exposure and support to teach EE.

**Food Literacy.** Food literacy was a term that was generally unfamiliar to TCs (see Table 3). Three TCs had no exposure to it. The other 10 TCs had a range of understanding, most of which was limited to nutritional and consumption aspects. A few TCs could make more robust connections between food and environment, as well as social issues. TCs had very little exposure to FL in the B.Ed. program. In their practicum placements, food was explored minimally through food waste in the EcoClub or within snack programs. Some TCs could critique the approaches to food within these areas, noting a lack of critical discussion and missed opportunity to inform students on food, poverty and environmental issues. Some TCs believed it was important to understand food from field to table, though there was a lack of understanding about specific issues that arise in foods' journey from the field to the table.

The research question that expanded on TCs' understanding of FL was: "Food literacy, in the literature, is believed to be an integrative tool in EE (Barndt, 2012; Sumner, 2013). This study asks, can FL be used as an integrative tool for EE and if so what supports are needed for TCs? What is the relationship between EE and FL?"

There seemed to be interest in learning how to utilize food to connect environmental issues, but unfortunately, TCs were generally unable to implement this. It does not appear that many TCs have made this connection themselves (only 3 in the study); those that did recognize the interdisciplinarity of food and its connection to environmental issues via culture, justice, and equity, were able to share this knowledge in their teaching practicums. Ultimately, the placements in elementary and secondary schools only provided a narrow view of food as a charitable venture, with no in-depth discussion about the reasons for food programs.

Traditionally, the school environment is only a minimal source of support for FL and focuses on cooking; this type of information comes from personal endeavours and the family home (Colatruglio & Slater, 2016). EE discourse has been criticized for only focusing on food choice and specifically health, without making links to greater social contexts and privilege (Stapleton, 2015). This is a discourse that TCs should be aware of in order to avoid missteps. FL is complex and includes a variety of skills, behaviours needed to “manage, select, prepare and eat foods to meet needs” and is used to empower communities (Vidgen & Gallegos, 2014, p. 54). It seemed that, as our discussions developed, TCs could reflect on their experiences and make links to food and environmental issues, but apart from a few TCs, they lacked the confidence to expand upon these ideas in their classrooms

**Activism.** The discussion of what defines an activist provided important insight into how ‘activism’ affected professional identity. I asked TCs to expand on their definitions and to explain the relationship between being a teacher and an activist:

What does being an activist and TC mean? and How does being an activist and a teacher impact the development of a professional identity?



TCs believed that activism involved a grand or measurable action. This may or may not include lifestyles or changes to daily behaviour. They believed this action could take a variety of forms, through leadership, information sharing, and lifestyle changes. There was a tendency for TCs to see value in activism while refraining from self-identifying as an activist. TCs were generally reluctant to view themselves as activists for a few reasons. They did not believe their actions qualified as sufficiently grand or impactful to be considered activism. They tended to downplay the importance of their volunteerism or their efforts to include EE and FL in their curriculum. This contradicted the belief that one role of an activist is to educate others on issues. Another reason TCs dismissed their efforts was a belief that society views activists as extreme and radical. Many felt activism could be construed as negative or extreme, thus not fitting into the image of a well-mannered teacher. A TC's activism expressed in the classroom curriculum was only appropriate if balanced, age-appropriate, and approached with caution. But incongruently, even making explicit links to action to inspire change and spread awareness via their teaching and curriculum creation was not viewed as activism. The lack of discussion and support regarding their past experiences seemed to reinforce the idea that being an activist/teacher was not relevant to education.

### **Practical Suggestions**

The goal of this study was to consider what can be learned from the experiences of TCs, who have some knowledge, interest, or passion in the environment and who grapple with the intersecting identities of activist and educator. I considered:

“In what ways can the experience of activist TCs inform changes in the pre-service education curriculum to better address the goal of integrating EE?”

The changes suggested came from discussions of how prepared, or not, TCs felt to teach EE in an integrative way based on their activist experiences and their progress in the B.Ed. program. TCs ultimately felt that the B.Ed. program did not adequately prepare them to be environmental educators. Notably, they felt they needed more explicit knowledge of integration policies and documents. Only a handful of TCs were even aware of initiatives such as “Taking Action, Shaping Tomorrow”, which aimed to integrate EE in curriculum. TCs’ curriculum in the B.Ed. program must be integrated with EE, much like the goal of the Ontario school boards.

**1) Integrating activist identity, environmental education, and food literacy.** Based on the experiences and opinions of TCs, I feel that in the current context, linking their activist experiences to EE can be accomplished, but only with some changes to the B.Ed. curriculum, including more discussion and support by professors. TCs value their experiences and are already reflecting on how these experiences can be incorporated into the classroom. However, they do need to feel more confident that it is *acceptable* to do so. One viable way to combat this would be to change certain aspects of the B.Ed. programs. Specifically, if TCs were asked to explore, connect, and share their previous experiences, they may come to realize that these experiences are valuable and can enhance their teaching overall. Implementing this strategy at the beginning of the program would set the tone for the rest of the year. If, throughout the five years of the concurrent program, TCs were provided with opportunities to re-connect with these lived experiences and to share new and upcoming opportunities for further exploration, they may be better able to recognize the importance and relevance of these instances and be motivated to effectively integrate EE into their teaching. Next, a B.Ed. curriculum that makes direct linkages between activist passions and resources would also help strengthen the belief that these experiences are worthwhile. More exposure to EE-focused placements and critical discussion of

current school EE policies (such as EcoSchools) may also help TCs formulate their own strategies and beliefs about teaching EE.

**2) EcoSchools recommendations.** EcoSchools was an area that provided a place for TCs to explore how EE is approached in schools. It was not an area I had anticipated discussing, but it did provide answers to various research questions, such as how TCs understood EE, and, in some instances, FL.

EcoSchools played a role in exposing TCs to how EE was defined and presented in their practical experiences. As noted, Casey, Isabelle and Sam were all part of the EcoClub and Holly, Smith, and Kim were at practicums with EcoSchools initiatives but were not personally involved. For this study, that accounts for half of the TCs. The TCs that had experiences with EcoSchools were critical of their effectiveness and approach to EE. A positive aspect of EcoSchools was the accessibility for TCs. The TCs were regularly recruited to be part of the EcoSchools program, and they did so enthusiastically. This is a missed opportunity to provide knowledge and resources. On the one hand, EcoSchools focuses on goals that are attainable in a given context, such as recycling and waste management, specifically the school environment itself and the timeframe of the school calendar. On the other hand, more robust discussions about the reasons behind actions and their link to local and global contexts would make these actions more meaningful. For any of the recommendations in the document to be successful, however, participants concluded that the culture of the school needs to change. Ella referenced the Bondar report and the changes a school could implement but noted that “not only the teachers...but administrative” changes needed to occur. She told me, “everyone has to work in the school community to make this possible.” Grace reflected on successful initiatives in her practicum placement were those that were “integrated into the culture of the school.”

**3) Suggestions for integrating EE.** Another research question I considered was, does the activist experience, and understanding of an activist identity, help TCs understand and integrate environmental education into their teaching? An analysis of Ontario education programs indicates that there have been minor changes over 30 years (Beckford, 2008). Pre-service curriculum provides little opportunity to learn school-wide approaches to EE, outside of the traditional approaches to the environment (Pandya, 2006). Yet, it was found that TCs often create or drive EE initiatives at their faculties of education, but the success of these programs hinge upon the funding, space and faculty support (Osterta, Gerofsky & Scott, 2016). Given that the B.Ed. program has expanded to two years, double the time it once was, there may be some opportunity to provide that support.

Providing access and explanation to the most recent policy documents to TCs is a step in the right direction. Developing more explicit goals for TCs to engage in EE learning would be a next step. A closer look at another Canadian model, Sustainability Education in an Environment of Diversity (SEEDS) may provide some insight for Ontario Faculties of Education. SEEDS attempted to create environmental education communities of practice for their pre-service teachers. Their goal was to:

develop a strong sense of community (within their cohort); accept the inherent risks in their new learning; examine (their individual) beliefs about teaching and learning; assume responsibility for their own professional development; become a caring and reflective teacher; develop informed beliefs and educational theory; learn to accommodate and celebrate students' differences; develop effective classroom practices that nurture children; practice ethical, collaborative relationships with colleagues that are

characterized by open and authentic communication; and bring ecological and cultural awareness to their (developing) practice (Ormond, et al., 2014, p. 166).

Pre-service teachers (32 enrolled) entered in January and completed special courses. The program struggled with barriers similar to those discussed by TCs in this study, such as the view of EE as surface level and superficial (waste management, recycling) and the inability to integrate the outdoor opportunities they felt were necessary in their practicum placement. The feeling of success was limited by the way the school practicum approached EE. The model was worthwhile, as a work in progress, with the right mentors for pre-service teachers in their quest to be environmental educators (Ormond, et al., 2014). With the SEEDS case in mind, increased support and encouragement from B.Ed. teachers, MTs and parents was also seen as essential to feeling prepared to teach EE. Lastly, the need for adequate resources was a huge factor in feeling prepared to teach EE.

### **Professional Recommendations**

Ultimately, I imagined that the outcome of this study would be formal suggestions based on TCs experiences to potentially change the curriculum in the B.Ed. program. While the experiences of TCs indicated that most do, in fact, want some curriculum changes, this approach is not the only way to support TCs in their venture to be environmental educators. I see this research informing a balance between new curriculum, or ‘exposure’, and space to extend personal experiences into the curriculum via collaboration with other teachers. This exposure should be coupled with space in the curriculum to encourage TCs to engage in personal reflection, maintaining partnerships with their activist endeavours, creating new partnerships through environmentally-focused community placements, and building a community of

educators within their program and placements. There is still debate about the best way to support teachers in environmental education, and this research focuses on what TCs want and feel they need.

The results of this study suggest changes in **support and curriculum** so that TCs can increase their knowledge of environmental education policies and definitions. Teachers require avenues for professional and curriculum development as well as research on practitioners and what is needed to succeed at EE (Fien & Maclean, 2000). This research is important to the field of environmental education because it may help change the way we approach curriculum and learning of new teachers. Ultimately, TCs supported approaches on both sides of the argument: they wanted more knowledge via formal curriculum, as well as informal opportunities to support collaboration with other teachers, the ability to share their experiences, and the time to reflect upon, and make connections, between their activism and curriculum.

The **pre-service curriculum** has a multiplier effect where a teacher can impact a number of students; likewise, teacher education can influence a number of teachers, in turn changing how those teachers interact with their students (Powers, 2004). One strategy put forth by TCs in the study was to create more environmental courses in the pre-service curriculum, or at least increase access to existing EE courses. Indeed, the idea of creating courses on environmental education, particularly in teacher elementary education has been explored in areas such as outdoor education and middle level pre-service teachers (Ernst, 2014; Maurice, 1996; Stants, 2015). While this idea was found to fill gaps in knowledge and was a very practical approach, these courses are often criticized for being ‘watered down’ and therefore serve as a starting point (Khalid, 2001). Likewise, infusing EE into curriculum without making changes to the way B.Ed. curriculum is conducted is thought to be less than successful (Puk & Behm, 2003, p. 226). This

study does not discount the importance of exposure and support of environmental education within the B.Ed. curriculum, but it does suggest that simply adding ‘new curriculum’ is not the only way to support new teachers. A way to supplement a distinct environmental course would be to support teachers in sharing their experiences within courses as well as valuing those experiences as they impact teaching. Engaging pre-service teachers to communicate about environmental projects or activism – to each other and to their students – can help them become more confident in their ability to do so in the classroom and may inspire them to search out additional resources (Staniforth, 2006a).

Some TCs suggested a curriculum in the B.Ed. program that mirrored the integrated curriculum of Ontario secondary and elementary schools, rather than a separate course approach, would be beneficial. An integrated curriculum for pre-service teachers moves away from education strategies confined to subjects, helps new teachers enrich their teaching philosophy, and prevents the ‘tack it on approach’ that environmental issues are saddled with in the curriculum; EE can then be rooted in local places with long term goals (Powers, 2004). One study found that the topic of sustainability in the B.Ed. program was mainly contained to science and social science teachable areas and was ‘sporadic’ and ‘incidental’ in other courses (Buchanan, 2012, p. 114). This seems to be the case in the study program as well. There is some support for an integrated curriculum to teach EE; the benefits include authentic learning, applicable ‘real world’ links between the curriculum and students’ lives, promotion of community and collaboration and improved relationships between teachers and students, and increased success in subject areas such as math and literacy (Lieberman & Hoody, 1998; Bozzelli, 1999).

I believe most TCs mentioned more curriculum because, in the field of education “curriculum” is often viewed as a standard fix to an education problem. This stems from the limited experience of TCs regarding how curriculum is designed as well as the institutional constraints on creating new curriculum. Procedural and practical changes can take years to implement and are not an easy fix. While curriculum does, of course, have a place in addressing issues in schools, I think a look at alternatives is a viable option as well. As TCs indicated, they have a decent grasp on some environmental terms and concepts, with some TCs even being able to draw relationships between food and environmental issues. There are always teachers who want to teach EE, they just need to feel they have permission within the discourse of education (Barrett, 2007; Jickling, 2003) and connections with engaged teachers and community. This relates to teacher identity, and the acceptance of an activist component. If teachers are allowed to comfortably explore the facets of their teaching, including environmental passions, it may help foster a community and discussion of environmental issues. Opening spaces, to allow these connections to be made, can help foster what is already there, creating a community among teachers to innovate at the margins (Astbury, Huddart, & Theoret, 2009). Leaving space in the curriculum allows teachers to collaborate with each other, share ideas and resources and explore environmental topics, without being bogged down by meeting extensive curriculum goals. This relies on a ‘less is more’ approach and could celebrate the passion and experiences teachers bring to the classroom, rather than having them focus on a list of goals to check off. This support can begin with TCs in the B.Ed. program by leaving space for retreats, reflections and discussions on what TCs value, how they define environmental education and related terms, and what their personal experiences mean to their teaching. Memories and experiences pertaining to the environment was found to make a lasting impression on teachers, which in turn impacted



teachers' desire to share these experiences with others (Jorgenson, 2013). Recognition and discussion of previous experiences were something TCs wanted within their placements with MTs and with their education professors.

What TCs wanted was the ability to open spaces to create relationships rather than filling gaps with curriculum (Astbury, Huddart, & Theoret, 2009). These spaces, and creation of a community of practice, could provide an avenue for TCs to talk about personal experiences, share resources and evaluate policies within the classroom to get better acquainted with policies and develop strategies to address them (Daniel, Auhl, & Hastings, 2013). As some TCs noted, being given the authority and choice to focus on environmental topics for presentations was a small step; other studies have also found this to be a successful strategy, especially when pre-service teachers were given resources applicable to their subject matter (Buchanan, 2012). Spaces to explore EE could also be extracurricular, though one study found this approach to have a low level of participation among Ontario pre-service teachers at one site. This was due to the connection between 'average' environmental knowledge and 'average' desire to actively participate in environmental initiatives (Gwekwerere, 2014). To make an active community of pre-service teachers, it seems that increased exposure to EE is one place to start. An important component to learning more about EE, and thus increasing the 'average' knowledge and desire to participate, is to focus on action (Gwekwerere, 2014) that empowers both students and teachers. This may prove difficult due to the lack of enthusiasm and discussion around the already existing action of pre-service teachers as was found in this study. To leverage the desire, passion and activism of pre-service teachers, to inspire action and learning of their own students, B.Ed. programs need to start valuing pre-service teacher experiences.

## Personal Reflections

When I was a B.Ed. student, I had a biology curriculum teacher that implored us to begin our lessons with “what students know,” instead of assuming students know nothing about a subject. What students bring to the lesson, their prior exposure, and their conceptions and misconceptions, provided a foundation for the lesson to develop. The teacher could then focus on clarifying and extending the lesson to include what students were passionate about. Much like the experience of TCs in the study, no one asked me what I knew about terms and what my experiences taught me, what resources I had access to, or how to make networks of likeminded teachers, even though I was encouraged to do so with my own students. When I began this research and decided to use the voice of participants to uphold the meaning of the experience, I knew I had to set aside my own experiences. I had hoped that one of the outcomes of this study would be for TCs to reflect upon the relationship between their own experiences and definitions and use this newfound understanding to change the way they approach teaching EE. I have no ability to measure if this would be an outcome of the study, but in the spirit of this endeavour, I undertook this task personally. The process of lengthy discussions and analyses of the data helped me reflect on what TCs wanted to get out of education courses. I used this information and made changes to my own university course focusing on environmental education for sustainable development. This study impacted the way I discussed environmental education, focusing on how students defined terms and made connections within EE. I integrated food literacy whenever I saw an opportunity and made explicit links to food issues and environment. For every topic within the course, I took time to consider how food connected to this issue. I also increased the number of field trips and experiential learning opportunities to provide interested students with connections to community organizations. I particularly focused on community

organizations that engaged with food literacy. We went to a local not-for-profit organization because they address food justice and food insecurity on a variety of levels. Prior to this trip, the students could learn about relevant terms, such as food insecurity and food sovereignty. I did this through local examples in the news, TED Talks pertaining to the issue, as well as through their local community. Students were encouraged to share their own experiences in these areas. During our experiential education opportunity, students were introduced to food markets focusing on meeting the needs of low-income communities and food deserts, as well as a food delivery program. The students were also exposed to the same curriculum that elementary students would encounter on a field trip. Lastly, I allowed students to research and present on an original topic of interest, rather than using the syllabus to present on pre-determined topics.

Currently, I am instructing a pre-service science education course. This research has impacted how I approach teaching immensely. As a group, we have focused on environmental inquiry, starting from personal experiences and making explicit connections to community groups and useful resources. I have focused on expanding the perception of environment and environmental education, from a scientific, fact based, technocratic subject to include social justice issues. Perhaps, most importantly, we have unpacked preconceived ideas of environmental activism and explored ways to do so with primary/junior and intermediate students. In this way, I have taken TCs suggestions and put them into practice, following a more integrative approach.

### **Limitations of the Study**

For a qualitative study, focused on the perceptions of participants as they experience an event, a small sample size is not a limitation. Some may consider the fact that the data is self-reported to be an issue, but this theoretical approach acknowledges that what participants see,

hear, and feel to be true is in fact an accurate representation of the phenomenon. A sample size of 13 is appropriate for a qualitative study but restricts the claims that can be made due to the limited number of voices. It is not the purpose of this study to make specific claims about every education program and how they deal with environmental education and food literacy. Instead, I seek to describe and critically examine the experiences of TCs in this study, and through a comparison with their experiences and the literature, illuminate themes, ideas and potential changes by making general suggestions for improvements. While TCs in this study came from a variety of backgrounds and experiences, this research demonstrates that there are common areas of concern.

While these data were verified to be true between the researcher and the participants, and therefore authentic to their experiences, it is still self-reported. I had to assume that their descriptions of their experiences were authentic and true. It is worth mentioning, because each person experiences things differently and draws conclusions based on a variety of factors, and this could impact how they feel about certain aspects of the education program. An example is the perceived access and popularity of the sustainability education course in the B.Ed. program. While none of the participants took this course, and some had not heard of it, it does not mean the course is unpopular and inaccessible.

Lastly, I limited my data to include teacher candidates. I did not include B.Ed. professors or Mentor Teachers. Inclusion of these voices may have provided insight and instances where they do address EE and students did not remember or appreciate these instances (see Karrow et al., 2016). Ultimately, I wanted to gather an in-depth experience of TCs background and their perceptions regarding the B.Ed. experience. While the inclusion of other voices would have provided another 'side' to the story, it would not have changed the way TCs felt in terms of

support and resources they needed. Inclusion of other voices was also beyond the scope of this study.

### **Recommendations for Future Research**

This study provides the basis for evaluating the experiences of teachers and how their experiences affect their practice of environmental education. It also gave a safe space for TCs to discuss what supports they felt were needed to be successful environmental educators. While the number of participants, was sufficient for a qualitative study, it would be advantageous for other studies to replicate the study at distinct locations, and with more students to provide a comparison across experiences and school programs. To “deepen” the conversation with teachers and to address EE in schools, it is imperative to continue the conversation with new voices and experiences (Hart, 2003, p. 98). For future studies, an evaluation of the effectiveness and impact of courses that focus on EE at the pre-service level should be conducted building upon perceptions and attitudes of pre-service teachers in this study and adding to assessment of programs from studies such as Buchanan’s (2012). A large-scale study would need to maintain the voices and beliefs of TCs, teachers, professors in education through a qualitative lens.

In terms of facilitating new ways for TCs to build a community with teachers and share their experiences, I believe research using technology, especially social media, could help innovation at the margins (Astbury, Huddart, & Theoret, 2009). Utilizing the suggestions for support made by TCs in this study, a variety of avenues can be explored and evaluated for their effectiveness in terms of creating a community of practice for pre-service environmental educators (Daniel, Auhl, & Hastings, 2013). A studied consideration of how to integrate the knowledge sharing and support that occurs around EE within technological platforms such as forums, blogs, and academic journals/education platforms into pre-service education would be

beneficial. These platforms need to be connected to TCs, so they can innovate, connect, and fill in the gaps of support they need to be educators for the environment.

The findings of this study provide some hopeful insights into how TCs can better understand and, in turn, be prepared to teach EE. It considers ways to utilize activist experiences and personal passions for the environment as a platform to build knowledge, interest, and capacity to teach EE. I was glad to discover that, in fact, there were many TCs who had a strong desire to learn more about EE despite the frustration of feeling unsupported in this endeavour. I have put forth some practical solutions based on what pre-service teachers want and need to be successful educators. Despite some of these solutions, I feel that there is a long way to go to change the culture of what it means to be a 'teacher' in light of the environment. In a perfect classroom, the teacher would feel free to share information, passion and their own personal goals to better the environment for all human and non-human animals, and systems. They would have time and space to collaborate with their colleagues. This would help them fill in the gaps between their own knowledge and resources. I chose to focus on the pre-service level because I feel the education program can have an impact in shaping how new teachers formulate their identity. Pre-service teachers are there to learn, gather new information, and benefit from new experiences. They look up to professors and MT's as mentors, but they also look to their peers. In this day of information sharing, Education departments should capitalize on the enthusiasm, connection, and access to information and resources that pre-service teachers want and need to teach EE.

## Endnotes

### 1. Ontario EcoSchools

Ontario EcoSchools is an “environmental education and certification program for grades K-12” (Ontario EcoSchools, 2015) program initially created by the Toronto District School board (TDSB) in 2002. Schools enroll in the program and become; during their certification, schools choose from a variety of sustainability initiatives to achieve a provincial standard of 50 points. When schools are deemed certified, then they receive an EcoSchools plaque and a seal for every year of certification (levels = Bronze (50-65 points), Silver (66-74 points), Gold (75-100 points) and Platinum (Gold certification plus 20 out of the 25 Platinum points section).

EcoSchools stresses six key areas of action, providing tools and resources: energy conservation; waste minimization; school ground greening; curriculum; environmental stewardship. As of 2018, the mission of EcoSchools has expanded to a movement focus – this is meant to create and nurture “environmental leaders, reduce the ecological impact of schools, and build environmentally responsible school communities” (EcoSchools, 2018). The goal is to create action plans via a competent network and support that in a variety of ways, including an online network.

## **2. Ontario Ministry of Education, 2015**

A brief description of the 2015 revised secondary Geography curriculum follows.

Geography falls under the umbrella “Canadian and World Studies” curriculum, along with Economics, History, Law and Politics. The main goal is for students to become informed and critically thoughtful citizens with the ability to solve problems and make decisions about significant issues developing a sense of place. “Environmental Education and Canadian and World Studies” sections reference the policy document “Acting Today, Shaping Tomorrow: A policy framework for Environmental Education in Ontario Schools, 2009 (p.6). The curriculum suggests ways to integrate EE in the geography curriculum such as: investigate environmental issues such as resource management, population growth and urban sprawl, and the impact of human behaviour on the environment. Students are encouraged to make connections between local, national and global issues, and develop ways to improve environmental stewardship (p. 52).



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## **Appendices**

### **Appendix A – Emails for In-Class and Listserve Recruitment**

#### **Email 1: For students who provided contact information via in-class recruitment session**

Hello

Thank you for expressing interest in my study.

As I stated in class, participation is voluntary. I hope you would consider being a part of the project and helping make some changes to how schools approach environmental education.

In order to take part in the study, you must be an education student and have some past/current involvement or interest in environmental issues. This could either be through work, volunteerism, education, media or lifestyle. If you are not sure...ask!

I have spots open the first few weeks of January. In particular, I could meet with a student Jan 5, 7, 12, 14, 19 and 21. If none of these dates work for you please suggest another date and I will make it work. At this meeting you can ask more about the study and/or decide to participate and be interviewed!

I will provide refreshments so it may be a great way to refuel before heading back to class.

Alternatively, I can also interview participants over Skype.

**Email 2: For Recruitment via the University, B.Ed./FES listserve**

Hello,

I am a PhD student at [the university] (in the faculty of environmental studies). I am currently seeking education students (concurrent or consecutive) to take part in my research as participants.

Students need to be: Undergraduate education students Interested in Environmental education or environmental issues Available to interview

Participation is voluntary and participants get snacks!

They can contact me at: (email)

## **Appendix B – Consent Form**



Study title:

On being a food activist and teacher: Perception, attitudes and beliefs of teacher candidates  
regarding the effectiveness of their preparation to be educators

### **STUDY INFORMATION AND CONSENT FORM**

Researcher

**Affiliation:**

1. York University, Faculty of Environmental Studies

Faculty Supervisors (names redacted)

### **Introduction**

You are being invited to take part in a research study. Before you agree to take part, it is important that you read the information below. The information describes the purpose of the study, risks or benefits to yourself and your right to withdraw at any time. You will need to understand this information before signing this form. Make sure all your questions have been answered to your satisfaction.

### **Purpose**

The purpose of the study is to learn about the relationship between being an activist of an environmental issue and a teacher in training. For the purposes of this study you are considered an activist if you self-identify as an activist through your volunteer work, passions, research, education, or beliefs or any other mode. I am also interested in what your perceptions and goals are concerning environmental education related to your personal experience as a teacher candidate and activist.

Should you consent to being a part of this research project, you will be asked to take part in a demographic survey, and two interviews over the course of two semesters. Each interview will be approximately 30-60 minutes in length depending on the length of your answers.

The information you provide will remain anonymous and be used for a PhD dissertation. It may also be written as an academic paper and presented at conferences.

### **Procedures**

This study is an interview study for which you will be assigned a participant ID (ex. P1, P2). Participation involves filling out a demographic questionnaire and taking part in two 30-60 minute interview led by a researcher. These interviews will be held at a location of your convenience (for example the University).

Interviews will be audio recorded and then transcribed. The transcribed interviews will be kept anonymous. They will be analyzed for themes. Data collected may be used in research journals, conferences, or other academic activities. In these cases, your name will not be used and will be replaced with a number and no identifying information will be provided to the audience.



**Treatment and tests**

This study does not involve a medical intervention, medical experiment, or drugs. This study does not use testing.

**Eligibility**

You can take part in this study if:

you are enrolled in the Faculty of Education at the study site

you are in your second year of the program

you consider yourself an activist of an environmental issue by your own definition

you are 18 years of age or older

you can understand and speak English

You cannot take part in this study if:

you do not meet the above criteria

you cannot understand and speak English

**Risks, inconvenience**

There is little, if any risk, to being involved in this study. Everything you say is anonymous; nothing you share will affect your relationship or commitments at your University.

While questions are about your personal experience, they are not intrusive or about sensitive personal topics. You may also skip any question or withdraw from the interview or study at any time.

### **Benefits**

There are no direct personal benefits for participating. This study will help the researcher with her dissertation progress. It may also help the academic community gain a better understanding on what teacher candidates experience in terms of incorporating their own activist experience with formal education. Some participants may find a benefit to the act of reflecting on personal experience and expressing opinions and beliefs on such topics, especially considering the focus on reflexivity in education.

### **Withdrawal**

You have the right to withdraw from this study at any time. Withdrawal from the study will not affect your academic training or relationships at your university.

To exit the study, inform the researcher that you want to withdraw, and the interview will be terminated and all of your data will be destroyed.

**Confidentiality**

All data collected will be kept secure. In all data files, your name and identifying features will be removed and replaced with a participant code in order to preserve your anonymity. Only the researcher involved in this study will have access to the information you provide. The data collected will be destroyed 5 years after completion of the study.

**Compensation**

There is no compensation for this study. The researcher will do her best to accommodate the participant by arranging a convenient time and location for the interview. She may also provide light refreshments to make the interview more comfortable.

**Questions/concerns:**

You are free to ask questions about this research at any time. You can ask questions in person, by telephone or email. By telephone, you can contact researcher (phone/email)

You can also contact: Faculty supervisor at (email)

If you have questions about your rights as a research participant, or about any ethical issues relating to this study, you can contact the Chair of the Research Ethics Board at (416) 597-3422 x3081.

## **Consent**

I understand:

Participation in this study is voluntary

I am free to skip any or all of the questions or activities above without giving a reason.

I am not being monetarily compensated for my participation.

The researcher does not foresee any risks or stresses beyond what one might experience in day-to-day conversation about related issues. If however for any reason any of the question cause significant distress, I will alert the researchers immediately so that the interview may be adjourned or terminated.

All data collected about me will be kept secure. In all data files, my name and identifying features will be removed and replaced with a code in order to preserve my anonymity. Only the researcher involved in this study will have access to the information I provide. The data collected will be destroyed 5 years after completion of the study.

I understand I will be audio recorded. I may request that the recording device be turned off at any time.

Data collected may be used in research journals, conferences, or other scholarly activities. In these cases, my name will not be used and will be replaced with an identifier (e.g., P1) and no identifying information will be provided to the audience.

I am at least 18 years of age.

I will receive a copy of the signed informed consent form for my records.

During this research, I grant permission to be:

☐ Audio recorded

You may use recordings of me for (check one or more):

☐ Transcription

☐ Academic presentations

Participant's printed name:

Participant's signature:

Participant number: \_\_\_\_\_

Research assistant's printed name:

Research assistant's signature:

Date of Consent

Demographic information

Participant ID \_\_\_\_\_

Age: \_\_\_\_\_

Sex: \_\_\_\_\_

In what year do you intend to finish the bachelors of education program? \_\_\_\_\_

Please choose one that best describes your education program:

- 1) Consecutive
- 2) Concurrent

Level of certification (choose one):

\_\_\_ Primary/Junior

\_\_\_ Junior/Intermediate

\_\_\_Intermediate/Senior

\_\_\_Other:\_\_\_\_\_

Teachable Subject(s):\_\_\_\_\_

Undergraduate degree Yes/No

Year graduated\_\_\_\_\_

Subject/Major\_\_\_\_\_

Graduate degree Yes/No

Year graduated:\_\_\_\_\_

Subject/Major:\_\_\_\_\_

Did your previous university offer any environmental studies or environmental science courses? Yes/No

Did you take any environmental studies or environmental science courses in university? Yes/No

If so which ones?\_\_\_\_\_

Activist history

Do you identify as an environmental activist? Yes/No

Do you identify as a food activist? Yes/No

Where have you worked/volunteered/studied food related issues?

Please indicate Name (Year) – Duration and description of responsibilities.

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## **Appendix C– Interview 1: Activist Background and Definition of key terms**

Thank you for agreeing to be a part of this study. I am going to ask you a series of questions, some of which will be repeated at subsequent interviews as your experience as a teacher grows. If you are unable or unwilling to answer a question, please feel free to pass. None of these questions are mandatory. If you choose to pass on a question, it will not impact your ability to be part of the study.

Q 1. The goal of this interview is to understand how participants describe what being an environmental activist and pre-service teacher means to them. In other words, how do you explain, understand and make sense of this experience?

### **Experience and meaning**

Activism:

- Would you describe yourself as an activist?
- What does the term ‘activist’ mean to you?
- Has food or food issues been a part of your activist work?
  - If so how? Has it been a major focus? Do you find yourself coming across food in your environmental work?
  - How important do you think food issues are to your activist work?
- Some individuals I have worked with described what they do as a lifestyle, or as ‘work’?

How would you describe what you do if asked?



- Where is the site of your activism? In other words, what organizations, groups, community sites etc. have you worked with?
- How long have you been involved with \_\_\_\_\_(go through various sites)
- What is your role there?

Do you expect to maintain the relationships you have developed in your food activism work?

Are you meeting a lot of new people (in the program or at your host school)?

Do you keep in contact with your previous sites of activism?

How do you envision collaboration with these groups once you are a teacher? Do you worry that these relationships will suffer once you begin teaching/training?

Food:

- What role does food play in your \_\_\_\_\_ (use word/phrase individuals uses to identify themselves)?
- How did you come to be involved with food/food literacy/food justice etc.?
- What makes food issues so important to you?
- What types of education have you been involved with that relate directly or indirectly to food?
- Have you heard of food literacy? Is that something that is discussed/dealt with in your work? If so why/how/why not?

Education:

- Why do you want to be a teacher?
- Do you think your desire to be a teacher is related, in some way, to your activist work? If so how/ or if not, why not?
- Were you involved in education at \_\_\_\_\_ (site of activism)? In what sense?  
(Example: did you teach young children there, did you engage in community workshops, create public education material etc.)
- Is environmental education important to you?
- How would you define environmental education?
- Do you feel prepared to teach environmental education? If so why? If not, why not?
- Many education students come with their own beliefs, perceptions of environmental education, which is often based on their previous experiences. How do you think your activist experience is related to how you will approach teaching?
- Teachers in Ontario are undergoing many changes, in terms of training and in curriculum. The government would like to integrate environmental education throughout the curriculum. This means that no matter what subject you teach, you are expected to be an ‘environmental educator’ and help educate ‘environmental citizens’. Have you heard of this initiative? What are your initial reactions to this proposal?

## **Appendix D – Follow-up Interview**

### **Context and experience of being a pre-service teacher and food activist**

Q 1. The goal of this interview is to understand how participants describe what being a food activist and pre-service teacher means to them. In other words, how do you explain, understand and make sense of this experience?

- Since our last meeting, have you had any new placements?
- Have you encountered a professor or mentor teacher during your training who focuses on environmental issues? Describe this.
- Have any of the schools where you are a student teacher been active in environmental education?
- How would you say schools define environmental education? What is important to schools (for example is it waste management, climate change, outdoor education?)
  - o In other words what is valued in terms of environmental education?
- Has there been an opportunity to utilize your experience in environment/food literacy within the classroom so far? What about in your teacher education program? (I.e. in discussions, papers, assignments, lesson planning etc.).
- How do you feel about incorporating your personal experiences in environmental/food activism within your teaching? What supports do you think you need to make this possible?

- Has the experience of being a food activist and a new teacher changed the way you view or understand anything? Either professionally, personally or academically? Explain.
- Now that some time has passed, do you feel differently about being 'prepared' to be an environmental educator in an integrated classroom? Where does this feeling of prepared or un-prepared come from?
- Reflect on your experience in the education program. What would you change if you could? What did you find to be the most useful or helpful in your journey?

Appendix E.

NVivo Transcript Codes

Nodes		
Name	Number Of Sources Coded	Number Of Coding References
Action	5	26
activism and environment relationship	1	1
activism as a lifestyle choice	3	4
activism as a teacher	1	1
activism as dialogue	2	3
Activism as education	3	13
activism as extreme viewed by others	4	4
activism as teaching	2	3
Report\Nodes		Page 1 of 51

Name	Number Of Sources Coded	Number Of Coding References
activism awareness and inspiring action	5	5
activism deeply affected	1	1
activism equals leadership	1	1
activism ethic of care	1	1
activism ethic of care conservation	1	4
activism food	2	2
activism food march	3	3
activism in part awareness	2	2
activism is an outlook	1	1
Report\Nodes		Page 2 of 51

Name	Number Of Sources Coded	Number Of Coding References
Activism is viewed as extreme	3	23
activism living for a cause	2	3
activism makes others defensive	1	1
activism opinion and express	3	3
activism policy and information	3	3
activism proactive	5	5
activism requires justification	1	1
activism site p11	1	1
activism teaching one on one	3	3

Name	Number Of Sources Coded	Number Of Coding References
activism water	2	2
activism work	1	1
activism writing about food issues	2	2
activist issue p10	1	5
Activist needs knowledge	1	2
activist sharing information	3	3
activist shows support	4	5
activist tendency to label extreme	4	4
activist extreme	4	4

Name	Number Of Sources Coded	Number Of Coding References
address in equity and justice issues	0	4
addressing food inaccess in schools	1	1
Advocacy	1	1
Awareness	3	7
barrier meeting expectations	1	1
barrier too busy	1	1
barriers experienced with EE	1	5
barriers of EE	1	5
barriers to doing ee	1	1

Name	Number Of Sources Coded	Number Of Coding References
barriers to ee rules to stay in	1	1
belief that ee can't really be done inside	1	1
belief that food should be part of curriculum	1	1
belief that green space and exp-care knowledge	1	1
broad topic	3	3
caution about using activism in ed	1	2
challenges of relationships with community groups	1	1
Change	5	5
city lacking fl	2	3

Name	Number Of Sources Coded	Number Of Coding References
clarity on how to be ee teacher	1	1
comment on support needed to do ee	1	1
commentary on students perspectives of EE	1	2
community program as resource	1	1
connecting experience with classroom	1	2
connection between past exp and ee interest	1	1
connection between york exp and teaching	1	1
connection made to past experience	1	1
connection to community	1	1

Name	Number Of Sources Coded	Number Of Coding References
connects to different topics	1	1
contact with activist site	1	1
crisis mode of EE approach (doomsday)	1	1
critical of ed system general	1	1
critique of ed program	1	1
critique of ed program time	1	2
critique of food issues	2	2
critique of food lit in schools missing link	1	3
critique of food programs	1	7



Name	Number Of Sources Coded	Number Of Coding References
critique of preparation in subjects	1	4
Curriculum opportunities	1	11
definition of food literacy	1	2
definition of self as a teacher	1	1
description of activist	1	1
description of p13 activism	1	2
desire to be outdoor ed	1	1
desire to do fi reason	2	2
desire to do food literacy in classroom	1	1

Name	Number Of Sources Coded	Number Of Coding References
desire to teach related to ee	1	1
disconnect or lack of support in Ed for EE issues	1	1
discussion of ed program missing links	1	1
dismissive feelings towards activism or involvement	4	11
early childhood ed clean up	1	1
eco schools as ee in prac	1	1
Ecoclub	1	2
ecoclub at placement	1	4
Ecoclub experience	1	5

Name	Number Of Sources Coded	Number Of Coding References
Ed program does not do enough to support EE	1	10
EE about inspiring change	1	1
EE as a critique for the status quo	1	1
Ee as activism	1	1
ee as an ethic of care	1	1
Ee as enjoyment of nature	1	1
ee as making a difference	1	2
EE can be done anywhere	1	1
ee can be overwhelming	2	3

Name	Number Of Sources Coded	Number Of Coding References
ee connected to science	1	1
EE difficult but important	1	1
ee important for students	1	1
ee important when connected to tc and student	1	1
ee in placement #garbage clean up	1	1
ee in practicum mt	1	1
ee in school connection to outdoors	1	1
ee in schools	2	2
EE in TDSB schools	1	1

Name	Number Of Sources Coded	Number Of Coding References
EE is about action and interrelatedness	1	1
EE is about facts	1	1
ee is awareness	1	1
ee is connecting to students	1	1
EE limited to ecoclub	1	1
ee needs formal training	1	1
ee not seen as valuable	1	1
EE passion linked to exp	1	2
EE provide klines.	1	1

Name	Number Of Sources Coded	Number Of Coding References
EE tied to ethics tied to exp	1	1
EE unimportant not valued	1	2
ee=connection to students lives	1	1
env =being outside and caring	1	1
Env Ed	19	224
env issue of waste	1	2
environmental activism p7	1	2
ethic of care	7	9
events educational and fun	1	3

Name	Number Of Sources Coded	Number Of Coding References
example of connecting community and school	1	2
exp ed as inspiring	1	1
exp has provided resources and knowledge	1	1
exp in classroom showed she could do it	1	1
exp into classroom with proper prep	1	2
exp of outdoor ed	1	1
experience in ed program-repetitive	1	2
experience in the ed program	1	1
experience of Ed program	2	5

Name	Number Of Sources Coded	Number Of Coding References
experience of TC in coned program	1	3
Experience or lack of EE in the Fac Ed	2	3
experiential ed impact	1	1
experiential learning support for ee	1	3
exploring nature	1	1
exposure in school	1	1
exposure to fl in ed	1	1
exposure to the idea of EE in ed program	1	2
extreme id of activism	3	3

Name	Number Of Sources Coded	Number Of Coding References
fear of controversy not support for ee	1	1
feel prepared to do ee parents	1	1
feeling prepared based on degree	1	2
feeling prepared to be ee ed	1	2
feeling prepared to ee	1	2
feeling unprepared to integrate EE	1	1
feelings about Ed program	1	1
FL as interdisciplinary	0	14
fl as nutrition	1	4

Name	Number Of Sources Coded	Number Of Coding References
fl children teaching parents	1	1
fl in prac =health	1	1
fl limited action	1	1
fl that was done in placement	1	1
fl to address inequity	1	1
food activism	3	8
food activism (2)	2	3
food activism p7	1	1
food activism p8	1	1

Name	Number Of Sources Coded	Number Of Coding References
food activism school lunch	1	1
food and env viewed as seperate	1	1
food as a window into ee	1	1
food as social	1	2
food connected to different subjects	1	3
food connected to issues	3	3
food drive as fl	1	1
food equity critique in school	1	1
Food important to life	1	1

Name	Number Of Sources Coded	Number Of Coding References
food in act work waste	2	2
Food in EE definition	1	1
food in schools	1	1
food in schools ie healthy lunch	1	1
food in schools programs	1	5
food interest videos seminars	2	2
food literacy experience	3	4
food literacy activism	1	4
food literacy food justice	1	3

Name	Number Of Sources Coded	Number Of Coding References
food literacy gradual change	1	1
food literacy in ed program	1	1
food literacy in placement easy connec on with ee	1	1
food literacy in school through ecolub	1	1
food sepearate from EE	1	2
food work	2	4
food work nutrition	2	2
formal action	2	2
General comments on teaching impacts	1	1

Name	Number Of Sources Coded	Number Of Coding References
geography as possible avenue for ee	1	1
goal of EE application perspective	1	1
goal of integration	1	1
goal or reason for being an EE teacher	1	1
goal to integrate EE in lessons as teacher	1	1
goal to use experience in teaching	1	1
green movement	2	2
guilt over type of food from fb	1	1
hard for adults to do fl	1	1

Name	Number Of Sources Coded	Number Of Coding References
has not heard of integration	1	1
having envs as a teachable	2	5
Health and nutrition	0	0
heard of fl but not enough to define	1	2
hiding education in outdoor e	1	3
holitic approach opp for ee	1	1
hopeful that york will teach tcs to make change	1	2
how ee is defined	1	1
how EE is framed or valued in society	1	2

Name	Number Of Sources Coded	Number Of Coding References
how you frame activism matters	1	1
Human centered view of EE	3	5
human impact	1	1
I guess seeing humans as...I think they do see humans as like really truly part or interconnected to the web of life	1	1
I guess seeing humans as...I think they do see humans as like really truly part or interconnected to the web of life.	1	1
id as activist teacher	1	2
id as activist makes others defensive	1	1
idea of authentic ee	1	2
idea of EE being 'everyday life'	3	5



Name	Number Of Sources Coded	Number Of Coding References
idea of ee not fitting into subjects	1	1
idea of interdisciplinary	1	2
idea of passive activism	4	5
idea that ee can be done by experienced teachers only	1	1
idea that recreational is not educational	1	1
impact of activism on teaching	1	1
impact of activist work on teaching	1	3
impact of community placement	1	1
Impact of fac ed on teaching	1	3

Name	Number Of Sources Coded	Number Of Coding References
Impact of past EE experience	1	3
Impact of past EE experience on passion for EE	1	1
Impact of past food experience on teaching	1	1
Importance of ee in classroom	1	1
Importance of exp learning to later life	1	1
Importance of experience impact on classroom	1	1
Importance of field trips	1	1
Importance of food	1	4
Importance of teaching role of shaping minds	1	1

Name	Number Of Sources Coded	Number Of Coding References
Importance of water	1	1
Inclusion of food in ee definition	1	1
Incorporated food in lesson on own	1	1
Inquiry based	1	2
Instills care	1	1
Integration another strategy to push ee aside	1	1
Integration as dialogue	1	2
Integration heard of it	1	1
Integration needs right school culture	1	1

Name	Number Of Sources Coded	Number Of Coding References
Integration uheard of	1	2
Integration via support from school admin	1	4
Interconnectedness	5	7
Interdisciplinary	2	2
Interest in env scares people	1	1
Interest in food	1	5
Interest in food (2)	1	2
Integration in teaching materials	1	1
keep relationship with sight of activism	1	2

Name	Number Of Sources Coded	Number Of Coding References
lack of canadian resources	1	1
lack of conversation about issues hunger	1	1
lack of discussion of ee or sustainability in ed	1	1
lack of e resrouces at york	1	1
lack of ee in placement	1	1
lack of food in ed program	1	2
lack of food issues in ed program	1	1
lack of outdoor space in school	1	1
lack of resources created for ee	1	1

Name	Number Of Sources Coded	Number Of Coding References
lack of support ee principals	1	1
lack of support for EE	1	4
lack of support for ee (2)	1	1
lack of support for EE in Ed	1	1
lack of support for EE in ed (2)	1	1
lack of support for ee -parents	1	2
lack of support in program-gap and no strategy	1	2
lack of support of EE integration in Ed program	2	7
language as integration	1	1

Name	Number Of Sources Coded	Number Of Coding References
levels of activism	1	2
limits to food literacy	1	4
literacy	1	1
literacy and language	1	3
many aspects to EE	1	1
missed opportunity for ee	1	1
more support needed to overcome barriers	1	1
MT and ee	1	1
mt not supportive of ee	2	3

Name	Number Of Sources Coded	Number Of Coding References
mt relationship	1	3
mt relationship (2)	1	1
mt relationships	1	5
MT supporting connection and EE	1	1
must follow MTs rules	1	1
need expertise to do ee	1	2
need for courses capitalize on knowledge of tc	1	2
need for ed and empathy for food issues tcs	1	2
need knowledge for ee	1	1

Name	Number Of Sources Coded	Number Of Coding References
need physical objects	1	1
need support to explore ee	1	3
need to follow curriculum	1	1
never heard of fl	1	1
no discussion of activism in ed course	1	1
no equity in tdsb food	1	2
no food programs at placement	1	1
no support in program but potential	1	1
no talk of barriers of ee positive	1	1

Name	Number Of Sources Coded	Number Of Coding References
not every teacher needs to do ee	1	1
not familiar with fl	1	1
not heard of fl	1	1
Not heard of integration	1	1
nutrition and eating	1	2
once critical of ed but now hopeful	1	1
opportunity for ee in pj	1	2
outdoor ed	1	1
outdoors	2	3

Name	Number Of Sources Coded	Number Of Coding References
outdoors and nature	1	1
P1 activist exp description	0	0
P1 transcript_December 3 2014	1	1
P11 act involved outdoor ed	1	1
p13 food interest	1	1
P2 activism details	1	2
P2 reasons for being a teacher	1	1
P2 relationship between food and activism and being a teacher	1	1
P3 activism details	1	6

Name	Number Of Sources Coded	Number Of Coding References
p3 reason for teaching	1	2
P4 activism work	1	3
P4 reason for teaching	1	1
P5 reason for teaching	1	1
P6 activist details	1	1
P6 reasons for teaching	1	1
p7 activism	1	1
p7 activism details	1	1
P7 no activist id	2	2

Name	Number Of Sources Coded	Number Of Coding References
p7 reason for teaching	1	1
p7 reason for teaching (2)	1	1
p8 activism	1	2
p8 activism and lifestyle	2	3
p8 reason for teaching	1	2
Passion	1	2
past exp in ee but not york	1	1
past experience of activism	1	1
Personal exp Impact on teaching	2	3

Name	Number Of Sources Coded	Number Of Coding References
place based and outdoor	1	1
positive exp with ee in ed program-resources	1	2
positive support for ee in ed program	1	2
poten al partnerships for comm placement and classroom	1	3
precleved barriers to Integration or teaching EE	1	2
Prepared to be an EE	1	40
prepared to be ee teacher other	1	3
preperation comes from experience	1	13
profs not making connec on with tc exp and educa on	1	2

Name	Number Of Sources Coded	Number Of Coding References
reason for teac push for content no care	1	1
reason for teaching and interest in EE	1	1
reason for teaching -helping	1	1
reason for teaching p9	1	1
reason for teaching people care	1	1
reason for teaching influence	1	1
reason for teaching unsure	1	1
Reasons for EE in the classroom	1	1
reasons for interest in food	1	1

Name	Number Of Sources Coded	Number Of Coding References
Reasons for teaching	1	3
recycling	1	1
reflection on connection btwn activism and ee	1	1
Related to science and technology	1	1
relationship between activism and ed	1	1
relationship between activism and ed (2)	1	25
relationship between activism EE and Ed	1	1
relationship between ed and outdoor e	1	1
relationship between EE and science	1	1



Name	Number Of Sources Coded	Number Of Coding References
relationship between food and env	1	1
relationship between food and environment	1	1
relationship with activist source	1	3
relationship with students	1	3
relationships	2	2
reminder of good env behaviour	1	1
resource availability affects confidence	1	2
resources for EE	1	1
resources needed	1	1

Name	Number Of Sources Coded	Number Of Coding References
resources needed for ee	1	1
responsibility or ethic of care activism	1	2
role of a teacher	1	1
role of EE to make change in children's beliefs and actions	1	1
role of food in activist work	2	3
role of food in EE	1	1
role of food in ee-ed documentary	1	1
role of teacher in ee	1	1
School helps prepare for EE	1	11

Name	Number Of Sources Coded	Number Of Coding References
schools don't allow controversy	1	1
sees food and water as ways to integrate	1	1
Sees potential to integrate in curriculum	1	1
sharing experiences within ed program	2	2
showing an interest in EE issues	2	2
site of activism	1	4
small mention of ee int	1	2
state of food literacy in schools	1	5
statement everyone eats	1	1

Name	Number Of Sources Coded	Number Of Coding References
structural limits to ee	1	1
struggle id as activist	2	2
struggle with label of activism just embedded	1	2
student centered learning	1	1
Students attitude towards ee	1	1
Suggestion for support for EE TC	1	1
suggestion for tc program	1	2
suggestions for support in TC curriculum	1	2
suggestions of changing ed	1	1

Name	Number Of Sources Coded	Number Of Coding References
support at york for ee	1	1
support for EE	2	4
support for ee at york	1	2
support for ee at york via field trips	1	1
support for ee at york1	1	1
support for EE from FES	1	1
support for EE in Ed	1	1
support for ee in ed program through field trips	1	1
Support for EE in education program	1	2

Name	Number Of Sources Coded	Number Of Coding References
support for EE in the ed program	1	1
support for ee integration in ed pro	1	7
support for EE or lack of support	1	4
support for incorporating ee in ed program	1	1
support for integration from prof	1	1
support for relationship between ed and ee in envs	1	2
support needed for ee in schools	1	2
support needed for resources available	1	2
supports needed to be an ee educator	1	1

Name	Number Of Sources Coded	Number Of Coding References
sustainability	1	2
sustainability	2	2
TC believes in integration for awareness	1	1
TC goal to integrate ee	1	3
TC heard of integration in ed program	1	2
TC in support of integration with right training	2	5
TC not heard of integration	1	1
TC not supportive of integration	1	6
tc not sure ee is possible in all schools	1	2

Name	Number Of Sources Coded	Number Of Coding References
TC seizes opportunity to do EE	1	1
TCs ideas or exp integrating EE	1	22
tcs not aware and ee gets skipped	1	2
tcs told to be advocates for ee	1	1
teacher inspires	1	1
Teacher knowledge	1	1
teachers cannot be political	1	1
teaching and ee relationship	1	1
teaching as a bridge to culture	1	1

Name	Number Of Sources Coded	Number Of Coding References
teaching is personal	1	1
teaching making change	1	1
teaching reason making connections	1	1
tentative about activism=larger scale	4	4
Topics Included In EE	2	9
understanding fl	0	0
using field trips as resource	1	1
views EE as important to start young	1	1
volunteer makes connection	1	1

Name	Number Of Sources Coded	Number Of Coding References
wants more ee in schools	2	2
water connects	1	1
ways around barriers to ee	1	1
what children need to learn about ee	1	1
what could fl do in the classroom	2	2
what defines ee in schools	2	5
what fl could lead to an understanding of	2	3
What integration can accomplish	1	3
what is needed for EE	1	1

what is needed to integrate EE	1	1
where support can come from to do EE	1	1
young children fl	1	1