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Outdoor Literacy Opportunities:
Using Student-Created Field Guides in the Early Years

by

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BEd, University of Victoria, 2009

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ABSTRACT

Outdoor learning is noted to have holistic benefits for child development (Dyment, 2005; Blanchet-Cohen & Elliot, 2011), however there is limited documentation on the efficacy of outdoor literacy learning for young learners. Humans are inherently connected with nature (Wilson, 1993), but sadly today's students often do not have exposure to outdoor learning opportunities beyond the bookends of a school day (Kimbro, Brooks-Gunn, & McLanahan, 2011). This project arose out of a desire to explore outdoor literacy learning opportunities and develop an implementation plan for teachers. The result is the student-created field guide project which focuses on documentation of outdoor literacy learning. Through the use of field guides, teachers are able to assess learning over time, understand student interest through inquiry, and allow for student-choice as a facet of literacy instruction. The student-created field guide process results in engagement of learners as they have real-world experiences to pull from during literacy activities (Strickland &Morrow, 1989; Eick, 2012; McMillan & Wilhelm, 2007). By exploring relevant literature, and considering Indigenous Ways of Knowing in this project's development, a child-honouring teaching practice is crafted through the use of student-created field guides. The simplistic design of the field guides is intended as an accessible entry point for teachers and students of varying familiarity with student-created resources and outdoor learning. Finally, future goals of this work are discussed.

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ACKNOWLEDGEMENTS

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Finally, I would like to acknowledge the support network of my colleagues in this program. With their good spirits, humour, and thought provoking discussion, my work was elevated and I appreciate their insights and knowledge.

DEDICATION

I dedicate this work to my family, my kindergarten class of 2014-2015, and my future students. I wish to thank my parents and grandparents for their support of my perusal of education since a young age. No matter how I felt- at times excited, overwhelmed, or inspired- my family was always willing to provide support and word of kindness. I recognize my good fortune to have such a loving family and appreciate the sacrifices that they have made for me.

My kindergarten class in the 2014-2015 school year was the most inspiring group of students I have worked with. Rambunctious, kind, funny, inquisitive, and thoughtful are some descriptors that come to mind when recounting of this group. I have never felt more passionate to seek new skills to assist learning or find a special way to add some fun to the day. The school year was busy as I worked on my masters course work at night, but I made every effort to manage my time to put their learning ahead of mine. As a result, I learned more from them than I could ever have hoped for. Thank you to those special 11 boys and 10 girls who have impacted my teaching forever.

Finally, I dedicate this work to my future students. I can feel myself transformed as a teacher and I am eager to share my learnings with them and hopefully help foster a love of nature as a result.

Chapter 1- Outdoor Literacy Learning

Introduction & Background Information

Outdoor learning has become more prevalent in recent years. Outdoor preschools and kindergartens appear to be emerging in increasing numbers all over the world (O'Brien, 2009), and many people are wondering why this change from traditional indoor schooling is occurring. The reality of life in 2015 is that we are living in an increasingly digital world with the advent of smart phones, tablets, and increase in digital gaming for children. Children are spending increasing hours per day in front of screens in both learning and leisure contexts (Wahi, Parkin, Beyene, Uleryk, and Birken, 2011).When this screen time is compounded with increased safety concerns of children being outside and highly scheduled childhoods, today's generation of children spend less time outside than that of their parents. As a result, today's children have fewer opportunities to experience the freedom and imaginative opportunities that come from playing outdoors than previous generations.

As an educator of young children, I have noticed a push-back happening from parents and educators who are concerned about the lack of connection that children have with nature. Forest school programs such as Sooke School District's Nature Kindergarten (Krusekopf & Lockerbie, 2015) and Maple Ridge's Environmental School Project (2015) are providing parents and children with learning alternatives which focus on natural learning experiences in the outdoors. Though these learning settings are still somewhat rare in North America, there is international desire for outdoor learning environments as adults are becoming concerned about their children's disconnect with nature (Wilson, 2012).

My professional belief is that outdoor learning can be effective when working with young children. When educators think of outdoor learning, the subject areas of Physical Education and Science often come to mind. It is less common that the connections of literacy learning and outdoor education have been drawn. As a practitioner, I am constantly seeking to find effective literacy instruction strategies and activities that can be implemented outdoors as I feel that all aspects of a child's learning can be met via outdoor learning. Children who learn outdoors are often seen to be more self-confident and engaged in their learning (Eick, 2012), and I am striving to incorporate this knowledge in to my planning for instruction with my kindergarten students.

Outdoor learning has benefits for holistic child development. These benefits are seen in the cognitive, affective, interpersonal/social, physical, and behavioural realms of a child's development (Dyment, 2005). These benefits are seen when children participate in outdoor field work, outdoor adventures, school ground and community projects, and repeated outdoor visits in all areas of the curriculum (Dyment, 2005). Furthermore, while much is known about outdoor learning in the curriculum areas of Science and Physical Education, outdoor literacy instruction is a somewhat contemporary topic, and as such is not backed by a great deal of data which document its efficacy. This is both of interest and concern to me. It is interesting because I know that outdoor literacy instruction is occurring in my school district with effective results (as can be seen from the results of students in the Nature Kindergarten program in Sooke School District and outdoor learning in general is seen as a highly effective means for student learning and connection to curriculum (Blanchet-Cohen & Elliot, 2011). This lack of readily available data to teachers in the field is the main motivator for me in this project—while I feel there is efficacy in outdoor literacy learning, I am seeking to find more professional data to support my beliefs.

Personal and Professional Motivation

I am personally connected to the topic of Outdoor literacy instruction. My approach to teaching young children has largely and increasingly shifted from classroom-centered, teacher-driven instruction to student-led, outdoor-based learning opportunities. In my experience, outdoor learning affords students the opportunity to self-regulate their behaviours without the physical limitations of a classroom, explore their own physical limits via gross motor movement, and develop a reverence and respect for natural environments, flora, and fauna as their outdoor experiences increase. Real-world learning experiences provide students connection to what they are learning about, as well as the act of learning itself (McMillan & Wilhelm, 2007, p. 372). Educators are obligated to use this knowledge when providing instructional activities to children, and it is my goal to immerse children in outdoor learning environments to help increase their connectivity to the learning experiences, and specifically to literacy development.

Recently, I have noticed in classroom discourse that more students do not have the outdoor learning experiences that earlier groups of my students have had. Louv (2005) suggested that children's increasing alienation from nature is resulting in an "ecophobia" which is "teaching young people to avoid direct experience in nature [and] well-meaning public school systems, media, and parents are effectively scaring children straight out of the woods" (p. 2). He has termed this loss of outdoor experience 'nature-deficit disorder.' For example, I recently took my class to a park, which has a forested path and a playground. The park is a three minute walk from our school property. Since I work in the public school system, all of the students in my class live within walking distance of the school. When we arrived at the park, I asked the students who had been there before. To my surprise, over half of the students said that they had

never been there before. This is an example of one problem I see developing for today's learners—there is a lack of opportunity and exposure to the outdoors.

Two years ago, I taught a Grade 4/5 class and we took a field trip to Sidney, BC to visit the Shaw Ocean Discovery Centre. While there, I took my students to what locals refer to as "Glass Beach" where there is a great deal of beach glass. There were several students who said they had never seen "colourful rocks" before. I explained to them that this was in fact glass, and the process by which it becomes broken down. Though all of these students live in Victoria, there were also students who said "I only get to go to the beach with school" which was very surprising to me. This is a second example of the lack of exposure students have to outdoor experiences.

Wilson (1993) defines "biophilia" as "the innately emotional affiliation of human beings to other living organisms" (p.31). Wilson (1993) goes on to discuss how his hypothesis of the human condition of biophilia influences humans so greatly that more people visit zoos than attend sporting events every year, and that when seeking a dream home, most people include an outdoor space as part of this dream. While I agree with Wilson (1993) that humans are universally connected to their natural environments, overscheduled childhoods and safety concerns of parents are resulting in fewer and fewer children are playing and learning outdoors. The examples provided from my teaching experiences shocked me but are the reality—outdoor opportunities simply do not exist universally for students on a regular basis beyond what is provided during school hours (Kimbro, Brooks-Gunn, & McLanahan, 2011).

Inspiration from Nature

I have always felt deeply connected to nature. Living my whole life on Vancouver Island, I experience a yearning for the ocean if I have been away too long. The climate and natural spaces here provide Island residents with a plethora of opportunities to explore and connect with nature. The ocean, forest, mountains, trails, caves, rivers, and lakes provide so much natural splendor and learning for those who seek it.

Several years ago, I had my first full time teaching contract with a very challenging grade one class. There were needs both academically and emotionally that I as the sole adult in the class simply could not meet. I spent long hours planning and trying to meet students' needs, and felt overwhelmed and down-trodden. I had the best advice from my principal at that time. She said 'go to the ocean, sit there and stare at the moon until you realize your problems are just a small part of this big world.' I took this advice often and while I still couldn't fix everything, I felt a lot better about what to tackle first and these experiences in nature made feel peaceful, connected and centred. My time in that grade one class was the most challenging and rewarding professional experience of my life thus far. It was made much easier by my efforts to reconnect myself with nature as I realized how crucial that time was in making me a more complete individual, and as a result, a more complete and confident teacher for my students.

My personal connection to nature is what drives me to share nature learning with children. I know of the benefits emotionally, physically, and academically that I have seen for myself from spending time in nature. Emotionally, I have used my connection to nature to calm me in times of stress and to inquire about my interests in plants and wildlife. Cathedral Grove is one of the most calming places I have ever experienced as the trees' beauty and size makes me

feel but a small part of our massive and wonderful world. Physically, nature has encouraged me to push my limits through hiking, rock climbing, caving, and swimming to realize my potential and feel a sense of accomplishment when I have exerted myself or tried something new. Academically, the great diversity of local ecosystems have encouraged me to learn more about the species that we share our planet with, and has served as inspiration for personal writing and drawing. Nature is often spoken of as a "co-teacher" when considering outdoor education. I feel that it is far more. Nature is our first teacher; the only thing that changes is if we choose to listen to nature's teachings.

Emergent Curriculum and Child-Honouring Practices

When I consider outdoor literacy instruction, I must also consider emergent curriculum, which is a child-honouring practice that I strive to incorporate into my professional practice. It allows teachers to assess and plan for the child's readiness, individual interests, and provide opportunities to deepen knowledge, understanding and learning in the interest area (Cassidy, Mims, Rucker & Boone, 2003, p.195). My goal is to use this style of teaching to teach literacy outdoors, because the two tie together seamlessly. For example, when a child expresses a curiosity in any given natural element (such as a specific type of tree), the teacher can use this opportunity to design curriculum which deepens that student's understanding about the natural element while increasing the child's literacy skill as well.

The concept of child-honouring has recently been made famous by the Canadian Children's musician Raffi. He believes that a child's potential is powerful and should be activated during early childhood. This means that a child must be respected, heard, and considered as integral to all processes which involve them (Cavoukian, 2015). Emergent

curriculum honours children because the children are decision makers alongside teachers to guide the learning in ways that is of specific interest to the child.

The Reggio Emilia school in Italy is one of the foundational schools in the world in terms of child-honouring and emergent curriculum practices. Curricula are developed alongside children and their interests and as such, the learning that children do directly relates to their individual interests and passions. Learning is based on a system of reciprocity between teachers and students with mutual decision making, guidance, and communication between all parties to guide the learning (Rankin, 1993). In this curriculum development model, the teachers work together to hypothesize many possible outcomes for the students' learnings, while also remaining open to the different outcomes that children have in mind and giving the children's ideas equal consideration. Reggio Emilia teachers believe that the process of children working with others, thinking, feeling, and progressing together with others is the most crucial piece of learning and that this learning can transcend specific content areas. (Rankin, 1993).

The concept of emergent literacy curriculum is not new. Strickland & Morrow (1989) detail the process of creating emergent curriculum to help readers and writers blossom. Via the use of 5 simple tips for educators, Strickland & Morrow (1989) provide real-world, practical tips for the creation and implementation of emergent literacy curriculum. These tips are (1) carefully lay the foundations for your new policy (curriculum) directions, (2) assess the literacy environment, (3) plan for those experiences considered essential, (4) attend to skill development and program objectives, and (5) reflect, reassess, reconstruct (Strickland & Morrow, 1989, p. 722-723).

When teachers use emergent literacy practices, the teaching is responsive and in-tune to individual student needs. By regularly assessing work, teachers can adjust instruction to meet students where they are and provide targeted and relevant instruction. The concept of emergent literacy learning meshes very nicely with outdoor literacy learning—the real-world, outdoor environment plays a big role in the teachings and constant attention to detail as well as reflection, assessment, and program development are needed to ensure that students are best served and that the necessary skills are taught. This will be discussed more in Chapter 3 as this duality is an essential factor to consider in the development, assessment, and implementation of student-created field guides.

In line with the works of Strickland & Morrow (1989), both Eick (2012) and McMillan & Willhelm (2007) found that middle-years students who had real world experiences in nature showed a stronger connection to their writing and had more substantial ideas to write about. Eick (2012) and McMillan & Willhelm (2007) define 'real world' experience as exposure in nature with the curricular content that is being explored. For example, if children are learning about trees, then their 'real world' experience would be learning alongside the trees in their natural environment. This real world connection allows students to engage deeply with their literacy learning experiences, which is the ultimate goal of this research. Students engaged in a nature journaling series of activities upon each exposure outside, and the teachers found that students were more willing to write based on their "direct experience." "Direct experience" is defined as students having the opportunity to engage directly with nature, and its effects are seen in the journaling and language acquisition which result from these direct experiences (McMillan & Willhelm, 2007, p. 370). 'Direct experiences' take place in 'real world' settings and provide rich

learning opportunities for students. As such, I feel compelled to offer my students these types of outdoor learning opportunities as they have seen to be so effective.

By using student-created field guides, teachers noted that students were willing to share deeper-level thinking and connection than was typically seen in a classroom or discussion setting (McMillan & Willhelm, 2007, p.372). This “direct experience” serves as an effective baseline for effective outdoor literacy instruction as it is a way to engage learners in their literacy learning.

In this capstone project, I will examine the scope of the work that has already been done, and I will also provide suggestions as to what work still needs to be done, in order to build upon the research of implementation and efficacy of outdoor literacy instruction. Via the exploration of some critical questions, I will seek to develop a useful framework for student-created field guides and relevant assessment tools specific to the Kindergarten curriculum of British Columbia, which will be of use to professionals in the field.

Critical Questions to be Addressed

Literacy instruction is a multi-faceted process. When planning for instruction, educators must consider time, place, materials, and individual abilities of learners. Via exploration of, and reflection upon relevant research, this capstone project will seek to explore three questions. These questions are:

1. How can educators effectively teach literacy in an outdoor setting while keeping the true meaning of "outdoor learning" in mind rather than merely moving traditional indoor learning outdoors?
2. What tools are currently available to educators who wish to teach literacy outdoors and how can educators ensure that the fundamental skills of literacy are

taught effectively in an outdoor context? What tools are missing that can be developed in this project?

3. What physical space, safety considerations and pre-planning needs to be done by educators before outdoor literacy learning takes place?

Through application of research and specimen creation, the third chapter of this work will seek to answer the critical question "How can educators use student-created field guides to help plan for and assess the efficacy of student literacy instruction in an outdoor context?" By addressing the three critical questions in Chapter 2, and developing a plan for their implementation with critical research in mind in Chapter 3, it is my hope that educators will be able to use the tools I develop to better serve students in their classes whether the learning environment is indoors or outdoors.

Student-Created Field Guides

In chapter 3, I will discuss the planning and proposed implementation of student-created field guides with a critical lens on their professional relevance for literacy teaching and learning. From my research to date which will be further outlined in chapter 2, and from my ongoing professional experience, I have found that students better engage with and connect to resources that they are integral in creating. Student-created field guides could take many forms and encompass a variety of topics. Some types of student-created field guides that will be examined in chapter 2 include: tablet and phone created field guides, traditional pen and paper guides, field guides focused on photo documentation, and field guides which are intended for teaching others.

The topic areas featured in student-created field guides are diverse and range across the curriculum. There is a great deal of research in the areas of science and art focused field guides (Franks & Vore, 2010; Siry & Buchinski, 2005), but the area of literacy focused student-created

field guides is an area which is somewhat limited in its documented efficacy. As such, I will explore the possibilities of developing literacy learning focused, student-created field guides as the key mission of chapter 3. Student-created field guides can serve as documentation of evolving student ability, and show student progress over time, which is decided and created by the students themselves. Since outdoor literacy learning has a large oral component, the field guide can tie the written component of literacy development nicely (Siry & Buchinski, 2005).

Moving forward

The research and ideas discussed in this chapter serve as foundations for the remainder of this capstone project. While one person alone can't change the whole education system, it is my hope that I can develop a resource that is useful for educators and transformative for children. While the research that I am doing is partly for my own growth and understanding, it will also help me to build the skills I need to help children develop their literacy skills in engaging and meaningful ways. Through my work in this capstone project, I hope to illuminate the need for and value of outdoor literacy learning via the development, creation, implementation, enjoyment, and sharing of student-created literacy field guides.

Chapter 2: Literature Review

Introduction

Literacy instruction is a multi-faceted process. When planning for instruction, educators must consider time, place, materials, and individual abilities of learners. In this literature review, the information explored will seek to answer the question 'How can educators effectively provide literacy instruction outdoors?' Furthermore, the concepts of using student-created field guides to teach concepts will be explored through relevant research so that a cohesive plan can be made in Chapter 3 to use student-created field guides for outdoor literacy instruction.

Literacy Learning & Play

A large portion of outdoor learning is experiential and exploration-based (Rose, 2014). This type of learning is often rooted in play. Literacy learning and play can occur together in early childhood contexts, and these play experiences help contribute to literacy learning. Educators can implement their knowledge about the benefits of the connections between play and literacy learning when working to bring literacy learning outdoors. Neumann & Roskos (1990) suggest strategies for educators to enrich literacy development for young children while remaining in a play-based context. With intentional design of literacy activities within play, Neumann & Roskos (1990) found that the children's literacy development became more situated in play and place (i.e. specific activities occur in specific places), more role defined (i.e. he is the shop keeper, he is a customer), more interactive, and more connected to the play itself.

Intentionally planning play to include literacy took place in various centres such as kitchen, library, and post office (Neumann & Roskos, 1990). This intentional planning for literacy included signage, paper for lists, books, and stamps to name a few. By providing these

items, the play became more focused on literacy without compromising the authentic integrity of the play in the children's minds (Neumann & Roskos, 1990). By transferring these or similar play centres outside (eg- a gas station, recycling center, etc), children would have the opportunity to integrate literacy learning into their outdoor play as well.

Einarsdottir (2014) completed action research about the connections between play and literacy in the preschool classroom in Reykjavik, Iceland. This research showed that while preschool teachers acknowledge the importance of connection between play and literacy, and accept literacy development occurs during play, they still have found that it is necessary for literacy to be taught in isolated blocks of time as well, in order to ensure that children gain a mastery of the concepts (Einarsdottir, 2014, p. 94). The teachers involved in this action research used the term "educational play" to define activities that were play-based but with an intended outcome in which children either learn or practice a skill (Einarsdottir, 2014, p. 95). This idea of educational play could arguably alter the true intention of a child's play as it is guided with a specific outcome in mind. This is a consideration that teachers may wish to make when choosing to include educational play as a part of their curriculum. On the other hand, it is reasonable to assume that since learning occurs in various ways, inclusion of educational play as one vehicle for learning would be reasonable and appropriate for young learners and fulfilling educational requirements as well.

Similar to the work of Neumann & Roskos (1990), Einarsdottir (2014) suggests introducing specific materials into play activities to enrich the play's literacy focus. An example provided is the use of a prop box for a grocery store which included real-world food boxes and cans, paper and pencils to make lists, and a cash register (Einarsdottir, 2014). As with Neumann & Roskos' (1990) ideas about implementing literacy in play, Einarsdottir's (2014) suggestions

could easily be implemented outside to provide children materials to engage with reading and writing activities in an outdoor context.

Sobel (2006) explained the benefits that fantasy play has for young children and the development of their understanding of situations, actions, and contextually appropriate interactions. By completing three different experiments, Sobel (2006) found that children are able to develop their understanding of pretense in social situations by making appropriate judgements of actions and appearance of characters in play situations. This is important because a large portion of children's literacy learning is developed by understanding the world around them as literacy is a written way to express personal thoughts and communicate about the world we live in.

Sandseter (2009) argues that risky play is an important part of preschool children's learning as it allows them to challenge themselves, feel exhilarated, and develop a personal sense of fear and risk. By developing an understanding of risk through play, Sandseter (2009) feels that children "become at home in the world" (p. 94). This feeling of 'being at home' can be observed as children display fear and exhilaration in their faces, body language, and most measurably in terms of literacy development, through their verbal expressions of these emotions. The more frequently that children have these risky play experiences, the more eloquent they become in expressing their experiences and sharing with others. This personal learning through play goes hand-in-hand with their literacy development because they have motivation for communicating their learning with others as it is an exhilarating (or fearful) experience.

Hughes (2012) identified and classified children's play in to 16 distinct types which he called the "playworkers taxonomy of play types" (p.27). These types of play are: social, socio-

dramatic, rough-and-tumble, exploratory, object, creative, communication, deep, recapitulative, symbolic, fantasy, dramatic, imaginative, locomotor, mastery, and role play (Hughes, 2012, p.38). As a 'playworker' (an adult who supports children's play on outdoor structures) Hughes (2012) notes how these play types are distinct and how all types of play provide children with learning opportunities. In terms of play and its relevance for literacy learning, Hughes (2012) explains that the interpersonal aspects of communication play, dramatic play, fantasy play, and role play contribute to children's verbal and non-verbal communication development. In addition, the story telling that occurs through these types of play also contributes to children's literacy development and builds understanding of story structure through these play experiences.

Schulz, Standing, and Bonawitz (2008) examined preschool children's play and the connections it has to literacy skills, namely making inferences and using oral language to express these inferences. They found that children's learning takes place largely through free play and they have termed this type of knowledge acquisition "casual learning" (Schulz, Standing, & Bonawitz, 2008, p.1267). Interestingly, Schulz, Standing, and Bonawitz (2008) found that children were more willing to explore and discuss play materials that were presented as new and belonging to disparate groups, rather than all presented as one group. This knowledge is applicable when considering outdoor play and learning as it correlates to literacy development. This information is pertinent because it could be extrapolated that children would be willing to discuss outdoor items during play opportunities, and as such would be 'casually learning' from their play experiences in the outdoors.

Benefits of Outdoor Learning

Humberstone & Stan's (2011) work explores the outdoor learning experiences of primary students and the interactions that they had with teachers in outdoor learning contexts in England. Humberstone & Stan (2011) argue that outdoor learning has proven to be a "significant and influential, yet under-utilized" form of instruction (p.530). Moreover, this work notes that more than the specific teaching strategies used, it is the relationship between the child and teacher, and between the child and his/her environment that most largely impacts learning (Humberstone & Stan, 2011). With this in mind, educators must then plan to cultivate positive working and environmental relationships in order to ensure that children's learning in nature is occurring in a trusting and comfortable context.

Ampuero, Miranda, Delgado, Goyen, & Weaver (2015) outlined the benefits of outdoor learning for primary students in terms of the benefits it provides for the development of empathy and critical thinking skills. Students who participated self-identified that their critical thinking skills were improving by learning outdoors. Due to the natural variety that exists in the outdoor classroom, students have to become adaptable and flexible thinkers. These students were also noted to have improved self-regulation abilities over same age peers who were not learning outdoors. This is of particular note when Ampuero et al (2015) spoke of students with 'high levels of thoughtlessness' that would regularly interrupt activities when outdoor learning activities began. Over time, this ego-centric behavior was observed less often, and in some cases, the students initially observed wit high levels of thoughtlessness even were showing empathy towards others by listening intently and thoughtfully responding to the queries of other students.

Outdoor Learning, Health, Behaviour, and Student Achievement

Outdoor learning develops positive benefits for the health and well-being of outdoor learners (Jack, 2010). Connections with place become central to their health as these connections serve as foundations to their feelings of well-being and belonging. These person-to-environment connections are forged through repeated and frequent exposure to a specific environment. Teachers can help students adopt social meanings of place by the way that they present their own connections to the place. For example, if teachers present the outdoor space as an enjoyable, safe place to be, students will likely adopt this same feeling over time (Jack, 2010).

Outdoor learning has also shown a positive correlation with student academic achievement. Blair (2009) found a positive correlation for students between time spent in school gardens and academic achievement and behaviour. By spending time in school gardens, students experience ecosystem complexity, growth, and decay. They also are seen to develop deeper connections over time with their natural environment and build connections with place and locally developed knowledge about the place as well. Additionally, student behaviour concerns were noted to be less severe in outdoor learning and classroom learning was seen more focused as a result. This focused classroom learning seemed to correlate positively with student achievement as well (Blair, 2009).

Miller (2007) found that preschool and kindergarten aged children who participated in either garden or greenhouse activities were more able to communicate with others about the world around them, convey their emotions, and readily developed literacy, math, and science skill sets which helped them in later schooling. As Blair (2009) found as well, Miller noted that children with behaviour concerns had less difficulty learning and attending in the outdoor learning context (2007). These outdoor learning experiences involving gardening also showed

the added benefit of increased interest in healthy eating and living in students who participated over those who did not participate in the program.

Outdoor Literacy Instruction

Eick (2012) examined students' literacy and science learning in a third-grade classroom, and this work serves as a case study for effective outdoor literacy instruction. This research echoes the sentiments of Humberstone & Stan (2011) in that Eick (2012) found that children's positive connection with nature, which developed from repeated exposure to outdoor learning space in a safe and comfortable way, allowed students to become more connected to their own learning (Eick, 2012). This also held true for reluctant learners who saw more gains in their outdoor learning than they had done in literacy activities in the classroom. Eick's case study is impressive to educators as all but one of the students met the end of year reading standards when assessed (Eick, 2012). Some of the effective strategies that engaged students in their literacy development included choosing a special spot in nature to write, studying local creek systems, and learning more about trees that the children visit in nature (Eick, 2012).

McMahon-Giles & Wellhousen (2005) discussed effective strategies that educators can use to implement literacy instruction outdoors. One simple idea they suggest is bringing sidewalk chalk outside to create labels on buildings, trees, and rocks among other objects. In this way, the child is connected to the literacy experience as they can record letters and messages directly upon the object in the space where the learning is occurring (McMahon-Giles & Wellhousen, 2005, p.283). Furthermore, this study found that when children wrote about their experiences in nature, they showed a greater connection to and sustained focus on their writing (McMahon-Giles & Wellhousen, 2005).

Miller (2007) noted that preschool and kindergarten students who participated in outdoor literacy instruction via garden and greenhouse experiences developed localized knowledge and skills in several literacy areas. These areas are: recognizing and using letters and symbols, naming objects, telling stories, spelling, reading, creating pledges, poems and songs, oral language development via conversations with children and adults, recognizing that print has meaning and is verbal language translated to written form, practicing letter and word formation , and formatting words on a page from left to right. While these are skills that students could develop via traditional literacy instruction, Miller noted that the child's freedom to explore with literacy for his/her own purposes provided motivation for children to write during the outdoor learning experiences and this motivation contributed to the positive outdoor experience-to-literacy skill development correlation (2007). Furthermore, children participating in these outdoor learning experiences were seen to have a richer vocabulary developed from their experiences and as a result, more complex written work than had been previously seen by their teachers (Miller, 2007).

Neumann, Hood, Ford & Neumann (2011) explored the benefits of using environmental print as an instructional tool to develop children's literacy skills. 'Environmental print' is defined as print which surrounds children, is non-continuous, and is encountered in context to fulfill a real-life function. It can be broken in to three main sections or 'logos'. "These are: child logos (e.g. 'Barbie', 'Lego'), community logos (e.g. signage such as 'STOP', 'Yield'), and household logos (e.g. 'Yoplait', 'Cheerios')" (Neumann et al., 2011, p.236). Environmental print is personally important to a child and can help them get what they want. For example, a child may use a community logo by pointing at it (e.g. STOP sign) to communicate meaning to others. Using environmental print serves two main functions in a child's literacy development in that it

makes children aware of the function of print and also makes children aware of the prevalence of print in our society. The use of environmental print is applicable to outdoor learning as it would provide educators the opportunity to engage children in real-world text which holds inherent meaning to the children as it is directly related to the environment they play and learn in. By taking the time to read and explain signage, teachers are helping to reinforce the concepts that print conveys meaning and language is all around children.

Neumann, Hood, & Ford (2013) found benefits from the use of environmental print to encourage print motivation in three and four year old children. Children who were shown environmental print in addition with other traditional classroom literacy activities outperformed children who were not shown environmental print in the areas of letter sound knowledge, environmental print reading and standard reading, letter writing, print concepts, and motivation to print. These same benefits were noted over the children not using environmental print two months later at re-testing. This powerful data encouraged Neumann, Hood, & Ford (2013) to believe that environmental print is even more effective than standard print in motivating emergent literacy skills in three and four year old children as environmental print is contextually important to their lives and communications.

O'Brien (2009) studied the benefits of teaching and learning outdoors by using the forest schools approach. The approach to teaching in general is different than what may be expected in traditional schooling because learning is the focus, as opposed to the performance of students. In this model, students are seen as co-constructors of knowledge, and teachers are seen as mentors to guide learning, rather than keeper of knowledge to pass to students (O'Brien, 2009).

Students who were registered in the forest school were evaluated as having superior communication and language skills, which was attributed to the fact that daily communication is an important part of the learning that takes place. While specific academic measurements were not detailed as part of this study, the areas of social skills, communication, and motivation were all highly developed in students who participated in the forest school (O'Brien, 2009).

Primary teachers often note the feeling of belonging as an indicator of student willingness to participate, and in turn learn new material (Stephanou, 2014). It is reasonable to extrapolate then, that the positive relationships of students with teachers and peers as seen in O'Brien's (2009) work would also correlate in a positive way to student participation, thereby impacting performance in a positive way. In situations where students had perceived feelings of love, cheerfulness, satisfaction, and enjoyment within the student-teacher relationship, children also showed strides in meeting their learning goals in literacy as well as having an increased intrinsic interest in literacy activities (Stephanou, 2014).

Student-Created Materials: Nature Journaling, Photo Documentation, Power Points, Using Tablets and Field Guides

Traditional field guides have been created through repeated careful observations of plants and animals by artists, scientists, and nature-enthusiasts with pencils and paper. At core, this process is the same for children and could be replicated by any teacher with a group of students in a simplistic way in their local outdoor environments. The exciting piece for today's teachers and students is that we have an ever expanding selection of technological tools that can be used to create field guides in creative, innovative, and relevant ways. These student-created materials

allow for student choice in their creation and a high level of motivation and connection for students (Connors, 2011).

Nature Journaling

McMillan & Willhelm (2007) found that students who had real world experiences in nature showed a stronger connection to their writing and had something to write about. Students engaged in a nature journaling series of activities upon each exposure outside, and the teachers found that students were more willing to write based on their "direct experience." "Direct experience" is defined as students having the opportunity to engage directly with nature, and its affects are seen in the journaling and language acquisition which result from these direct experiences (McMillan & Willhelm, 2007, p. 370). By using student-created field guides, teachers noted that students were willing to share deeper level thinking and connection than was typically seen in a classroom or discussion setting (McMillan & Willhelm, 2007). This "direct experience" serves as an effective baseline for effective outdoor literacy instruction as it is a way to engage learners in their literacy learning.

Harr & Lee (2010) detail the experiences of first grade children in their yearlong creation of school yard field guides which focused on changes that occur over time. The purpose of this project was to encourage children to journal, and develop skills to more proficiently write nonfiction pieces. By using the school yard as the base for writing and learning, children developed localized and individual field guides about the school that they could use to display their learnings and add to and change as they leaned more. Teachers in this project noted that students became connected to their school yard and via the journaling process, and that they also were learning scientific concepts, such as plant life cycle and seasonal change as well.

Photo Documentation

Ching, Wang, Shih, & Kedem (2006) detail a digital photography and journaling project which took place in a kindergarten-and-first grade classroom. Via the use of digital cameras, children had the freedom and flexibility to document their own learning and stories wherever and whenever they took place. The photo documentation project also involved many conversations between the child and the teacher during the uploading process—during this time, students were able to communicate with teachers about the meaning of the pictures and explain why the photos taken were personally relevant. As students were part of the upload process, they also recorded captions either manually typing or by dictating to a teacher so that the text which accompanied the pictures was in the child's voice. The photos also served as windows in to the children's cognitive and emotional processing upon the explanation of the photos to the teacher. The reasons the photos were taken (such as interest in a peer's structure or feeling proud of a peer) revealed details about the photographer's social and emotional self. Ching et al (2006) found that this photo documentation and journaling project positively impacted students' relationships with and interest in both technology and literacy.

Zimmerman, Gamrat, and Hooper (2014) found that with the increasing prevalence of mobile devices, photo documentation has become an effective way for children to communicate with parents. Unfortunately however, they felt there were limited opportunities for children to communicate with photographs out of school/classroom contexts. As a result, they developed a "Digital Postcard Maker" so that children could use mobile devices in out-of-school contexts such as summer camp to first learn about their environment and then secondly to serve as a medium to connect parents and their children through discussion about the photographs and environmental science. The aim of this postcard project was for teachers to close the gap

between students and parents in regards to students' science learning in the out-of-school setting. Children used iPod touches to collect photos during 60-90 minute outdoor exploration settings and after returning inside, camp leaders helped the children upload the photos in to the postcard creator, add text, and send to parents. Zimmerman, Gamrat, and Hooper (2014) reported that parents who received the postcards felt more connected to their child's learning and also felt that they were more able to understand their child's interests. A similar type of photo documentation could be used in a classroom context as well, and the outcome of parent-child interactions would be predicted to be similar.

Power Points

Wang, Kedem, & Hertzog (2004) followed students in a kindergarten-grade one classroom in the American Mid-West as they created power points to document and discuss their learning about their neighbourhood during a math unit about measurement. Through this study, Wang, Kedem, & Hertzog (2004) interviewed students and teachers with a key focus on the use of student-created power points and the impact that these documents had on learning. The school where the study was conducted was somewhat unique in that it had a dedicated "Project/Activity" time each day for an hour in the morning and half an hour in the afternoon. Since students were accustomed to completing a project for these periods each day, the authors felt it important to note that students were already familiar with the structure of student led projects and as such, the transition in to developing student-created power points was a smooth one.

The results were very positive from the perspectives of both students and teachers. Students reported that they learned more about measurement, the "outside" and their

neighbourhood, and also felt they ‘got better’ at using the computer. Teachers reported that students had an easier time reflecting on their learning about measurement and nature through using the power points as having a visual to refer back to made their discussion and reflection about the learning deeper and more thorough than when student-created power points were not used. This reflection piece is a critical reason for using student-created resources as students are able to use the resource to both collect and reflect their knowledge to others. Teachers also reported that these student-created power points were helpful in assessment of and assessment for student learning. Wang, Kedem, & Hertzog (2004) also noted that these student-created power points allowed for shared creation of experiences and learning, increased opportunity to learn about technology, and one-on-one interaction that were deeply meaningful and personally relevant to students between students and teachers as students developed their power points.

Using Tablets and Phones as a Starting Place

Connors (2011) designed a project for fourth-grade students using iPod Touches to get them interested in going outside more and make their learning more visible and assessable. This project also served as an opportunity for students to learn about the use of technology which was an additional goal. By using iPod touches, students created field guides that were intended to teach visitors about the nature trail at their school. Connors (2011) also noted that the nature trail at the school in the study was previously under-used and that students’ lack of exposure to the environment was showing deficits in the students’ social, mental, and academic development which she feels was combated by this field guide process. Connor’s iPod touch field guides were designed to be engaging for students and simple for teachers to implement technologically speaking so that the focus could be more on learning.

Connors (2011) called this project “Trail Blazers” and in addition to the 10 iPod touches for students to use, she also worked to create 10 nature backpacks. These backpacks contained tools necessary for field work: binoculars, thermometer, digital anemometer, field books, and pencils. The participants in this project were from low socio-economic families, and as such, the use of technology was a novel, exciting, and engaging way to connect students with their outdoor environment. The addition of scientific quality tools added authenticity to the project in the children’s minds and they viewed their field work as important.

Hance (2014) used phones and iPods with QR code technology to help grade four and five students learn more about local outdoor spaces. Teachers worked with students to create QR codes and develop “seQRet Treasure Hunts” about their local school environment which other students could then follow by using the QR codes to uncover clues. These treasure hunts were created by students using iPod touches and iPhones while participating in ‘enrichment cluster’ time at the school. Enrichment clusters were small groups which met weekly to work on an exploratory topic, in this case, the creation of QR codes and subsequent treasure hunts in nature. Students first worked with a technology teacher to learn more about creating QR codes and then they explored the outdoor environment of the school and decided where to make their treasure hunt for peers to follow and learn about the natural environment in the process.

To create the seQRet treasure hunts, students took pictures of natural elements on the school property that were of interest to them and then they researched the element to include this information as a linked element of the QR code. They did this process 10 times, once for each clue of the treasure hunt. QR codes were printed on paper and hidden at each location for the treasure hunters to find. Completing the treasure hunt was very simple for other students to participate in. The only tool that students would require was a phone or camera that had an

installed QR code reader. When the treasure hunter scans the code, it links to the research and photos that the students had previously taken and links them to the next clue. This process was seen to be highly motivating and engaging for students as they created the treasure hunts, and also rewarding for them as they saw peers successfully following the clues to complete the treasure hunts. Moreover, the creation of the seQRet treasure hunts gave students motivation and interest in both nature and technology and was seen to be a positive marriage between the two sometimes distinct worlds (Hance, 2014).

Field Guides

The traditional style of nature field guides created with pencils, paper, and careful observation will be the focus of the following section. Siry & Buchinski (2005) detailed the blending of science and art that took place when students created their own field guides. In this project, student-created field guides focused on ferns and wildflowers seen on the nature path near the school. In subsequent projects, the teachers also expanded the use of student-created field guides to study local trees and insects. Siry & Buchinski (2005) began this field guide project to fill a gap they felt was presented by field guides they found for plant-identification. The field guides that were written for adults were too detailed, and the field guides they found for children were too general and students were becoming frustrated that the plants at their own school were nowhere to be found. A unique feature of this project was that students worked in multi-aged partnerships to create their field guides. The teachers found that these partnerships created a sense of belonging for students and also kept students on task as they felt accountable to their partner (Siry & Buchinski, 2005).

Students in Siry & Buchinski's (2005) project worked consistently in the same area and recorded the changes to the local wildflowers and ferns over time. Students completed drawings, mono prints, and leaf rubbings of their plants in their field guide along with written observations and labels on each part of the plants. A point of interest is that the teachers in Siry & Buchinsky's (2005) work did not reveal the common names of the plants to students until the completion of their field observations. This was done intentionally to allow students the opportunity to compare "their fern" with other ferns noting the differences before being given the names to distinguish them. In other words, the teachers made a conscious choice to focus student attention to plant features to determine the species (Siry & Buchinski, 2005, p.39).

Franks & Vore (2010) discussed a project in which students in Texas created field guides to celebrate the bio-diversity of plants in their local school surroundings. The intended focus of the project was to learn more about the gardens on the school campus and share these learnings with visitors to the school gardens via student-created field guides. The students in this project learned to identify native species, adapted non-native species, the growing conditions of plants, volunteer plants, nectar plants, and host plants. The teachers in this project felt the inclusion of student-created field guides as part of their science curriculum was important because the project was student-led and as such, resulted in students being highly invested in the learning.

Students also used a tool kit in the creation of their field guides. This tool kit included: pencils, coloured pencils, hand lenses, compasses, clippers, rulers, measuring tape, scissors, packing tape, hand trowels, and paint brushes. Unlike in other works, students in this work were permitted to make clipping of plants to include in their field guides as well (Franks & Vore, 2010). In this situation, it is important to pay extra attention and care towards the safety of plants that students are touching. This practice is contradictory to the information presented by others

as it is invasive. Students were also permitted to dig up plants to learn about their root systems to then detail in their field guides as well.

In terms of student assessment of learning, Franks & Vore (2010) have created a detailed rubric that could be adapted to suit individual teacher goals of the field guide project, field sites and landscapes. The focus of these field guides is more technical than the other examined works have been as correct spelling, grammar, and plant identification are all mentioned to be important attributes of a successful field guide.

Field Guides and Future Possibilities

Field guides are not stand alone documents. Students spend hours crafting them and they are rich sources of localized and detailed knowledge about the learning area that they have taken place in. As a result, student-created field guides can serve as a jumping off point for teachers and students to expand the learning in nature to other areas of classroom learning as well.

After students had created field guides about birds, they were keen to expand this outdoor learning in to other areas of classroom learning as well (Connors, 2011). Some students used their nature-acquired knowledge about birds to build models out of clay while others used their field guides as prompts to make podcasts about the birds they had learned so much about. This is a prime example of using student-driven, emergent curriculum as a central part of elementary classroom instruction. This type of learning would be intrinsically motivating as it is developed by students to specifically suit what is of interest to them.

Connors' (2011) students also furthered their learning by teaching others what they had learned through their field guide creation via Earth Day presentations at their school and helping others become Trail Blazers as well. The students became the experts and used their own field

guides to teach teachers and other classes in the school how to become Trail Blazers outdoors. The student experts also explained how to use the Trail Blazer backpacks and iPod touches for other students to make their own field guides. This also served as a form of assessment to teachers so they could see what students had really internalized from the field guide creation experience (Connors, 2011).

Scott & Boyd (2014) noted that nine and ten year-old students who participate in field work learning have been seen to have positive long term effects on their literacy skills in comparison to students who have not participated in field learning experiences. In this study, students visited a rocky shore on a field trip and recorded their experiences, and then were assessed in terms of literacy skill five months later. Scott & Boyd (2014) found that field learning experiences allow students to learn about ecosystems in their natural habitat which makes for a memorable experience that aids the student in future recall about the information gleaned during the field learning. Furthermore, the field learning experience allows the child choice and independence in choosing specifically what to write about in their documentation.

Even students who were seen to typically have 'low level' literacy skills were successful while documenting their field experiences. Scott & Boyd (2014) attribute this success to the motivation and personal connection that students experience in nature, as well as the choice and differentiation that is inherent in the work. Five months later, students were re-assessed for literacy skills by writing once again about the field experience. The results noted were similar—even reluctant writers were able to articulate their ideas with specific information and intention.

The findings of Scott & Boyd (2014) are compelling when considering the future direction of field guides. If field experiences have profound impact even months later on the literacy skills of children, it seems that teachers need to recognize the opportunity that outdoor

learning provides to students and capitalize on it. Field guides have been discussed here in many forms and when thinking about how to move ahead, it seems that there are many options that would be dependent on resources at the school and on the specific site to be explores. To allow for student ownership and choice, perhaps a mix of options including photo documentation, traditional pen and paper, and even other technologies such as QR codes would make for student-created field guides that have as much diverse potential as the students who create them.

Indigenous Ways of Knowing and Outdoor Literacy Learning

When planning literacy instruction for students, teachers in British Columbia also need to consider Indigenous ways of knowing. Canada has a tragic past of relationship with Indigenous people and education, in particular as this relationship relates to residential schools. As such, today's teachers must be thoughtful of the broken past of Indigenous learners and Schools, and should honour the knowledge that is inherent to Indigenous ways of knowing in order to move instruction forward in a positive direction for future generations. This notion is also relevant when we consider the use of student-created field guides as Indigenous people hold a great deal of knowledge about the places we learn in and that knowledge should be respected.

The effects of residential schools are still being felt today, as the past treatment of Indigenous learners affects the attitude of parents and children towards the current school system. While we can never repair the damage that has been done to generations of Indigenous families, we can be conscious to help rebuild trust between Indigenous families and the school systems where possible. Considering that Indigenous ways of knowing are inherently different from traditional schooling, educators must ensure that their instructional practices acknowledge who the individual students are and that the instruction is both personally and culturally

appropriate, as well as relevant to that child's development. This is best practice for all learners.

Aluli-Meyer (1998) discusses how Native Hawaiian children construct their knowledge based on historical, societal, familial, and utilitarian ideals. This meaning making is based on what the child observes and experiences, and what is needed to interact with the world around them dictates the knowledge developed. Since learning and knowing is related to what is useful, a child's knowledge base is deeply entangled with place and experience.

Sanford, Williams, Hopper, & McGregor (2012) discussed the decolonization of education that must begin with the teacher via their teacher education experiences. When teacher education takes place in an informed environment where Indigenous ways of knowing are central to the learning experiences, teachers in turn are more aware of Indigenous ways of knowing when implementing their future work. In an effort to decolonize teacher education, Williams designed her course work to provide:

- Respectful and welcoming learning environments;
- Respectful and inclusive curricula;
- Culturally responsive pedagogies to improve the quality of knowledge, understanding, and pedagogic skills that all educators gain;
- Mechanisms for valuing and promoting Indigeneity in education;
- Culturally responsive assessment (Sanford, Williams, Hopper, & McGregor, 2012, p. 22)

By designing teacher education programs thusly, the teachers who emerge from these programs will have gleaned the efficacy of this type of course design, and the value of planning instruction for students from a decolonized, culturally responsive place of knowing and being.

As Hare (2011) describes, Indigenous children do not experience the same success in literacy as non-indigenous peers. Hare (2011) explains the three accepted truths in regard to the literacy development of all children. These truths are: (1) young children's literacy development is crucial for their later success in school and in life, (2) children familiar with the knowledge and skills associated with the dominant literacy practices of schooling have an advantage over those who are unfamiliar, and (3) early literacy experiences have been found to influence children's learning opportunities positively in later school years and life after formal schooling (p.340). Hare attributes the disparity between the success of Indigenous and non-Indigenous students in part due to Indigenous students' lack of familiarity with the skill sets of schools, as typically, schools do not consider Indigenous ways of knowing in to their classroom practices. It would therefore follow that this disparity in success could be lessened in classrooms where educators used instructional practices that best served the needs of individual learners and honoured each child for who they are, including their individual and unique social-emotional and cultural self-identities.

Barnhardt (2008) explores the problem amongst Alaskan Indigenous people of feeling as though they "live in two worlds" (p.7). While he has noted in his research that Indigenous people have a deep connection to place and the outdoors in their personal lives, there appears to be a lack of appreciation and learning in the outdoors in the formal education system. As a result, Barnhardt worked to form the AKAN or Alaska Native Knowledge Network which serves as a resource for "promoting experiential, inquiry-based pedagogy" and developing "curriculum materials that guide teachers into the use of local environment and cultural resources as a foundation for all learning" (Barnhardt, 2008, p. 11).

The creation and implementation of student-created field guides will help to bridge the gap between these "two worlds" as the environment is critical to the learning. Furthermore, it is my hope that these field guides will also be a tool to bring success for all literacy learners and the research of Barnhardt, Hare, and many others will be discussed further in Chapter 2 and will be fundamental in the design and creation of the field guides.

If teachers are taking students out on to the land to develop student-created field guides, then they need to be well educated about the places that they are teaching in and have reverence and respect for the knowledge that the place holds. Cajete (1994) discusses the "spiritual ecology" process that occurs as a facet of traditional American Indian education (p. 38). Cajete (1994) explains that traditional American Indian learning and teaching takes place first at a spiritual level which includes artistic, mythical, and visionary interactions through storytelling and play experiences. Respect and reverence for the natural places that learning takes place in are central to this spiritual ecology and they are the baseline for the construction of all knowledge. Equipped with this understanding, it is a reasonable conclusion to draw that this spiritual ecology will dictate learning and knowledge construction for Indigenous learners and this spiritual understanding must be respected in teacher's curriculum delivery.

Hare (2012) interviewed members of Indigenous communities and the educators who work with them about the Aboriginal Head Start On Reserve (AHSOR) initiative, and its efficacy for building children's literacy skills when using Indigenous ways of knowing as a fundamental component in literacy education. Hare (2012) found that literacy learning for children on reserve is linked to oral-language tradition such as storytelling, land based experiences, and ceremonial practices. Additionally, students who have positive early literacy

experiences have positively correlated results in terms of literacy learning in later school experiences (Hare, 2012).

An aspect of Indigenous ways of knowing that connects well with Outdoor Literacy Learning is place-based knowledge. Indigenous ways of knowing are heavily connected to the place in which the learning occurs, and are locally specific, and would be different if they occurred in a different setting, time, or with different participants. The learnings are "social, inter-generational, holistic, oral-narrative based, and experiential" (Hare, 2012, p.392). This is the same process that would occur during outdoor literacy learning practices—while the educator would have planned an outcome for the learning experience, local flora and fauna that show themselves during the learning experience would guide the learning in part. The same exact lesson could never take place twice as the environment is ever changing and as such, the knowledge gleaned is localized to that specific time, experience, and place.

Allen (1998) presented her findings about authenticating assessment for Native American students in the United States via the use of digital photographs. She argued that not all learners possess knowledge in the same way and as such, it is unrealistic for all learners to be assessed in the same way. Students who were a part of the digital photograph learning and assessment were from pre-kindergarten through sixth grade. Teachers participating stated that the digital photographs students presented were a more telling form of assessment and provided more information about the students than they had previously been able to assess without photographs. The photographs taken and assessed in this study were fulfilling requirements for science curricula. Allen (1998) felt that digital photograph based learning and assessment was an authentic, performance-based, and alternative method. In that way, it was engaging for students to participate in and was a true reflection of their individual knowledge about the place that they

were learning in. Most importantly, students felt truly a part of the learning process as their learning was documented and pre-existing knowledge about the place and their individual ways of knowing were honoured.

Allen (1998) felt that these positive results for Native American learners using photo documentation in science should serve as guidance for Teachers in the future to best reach Native American learners. As was discussed earlier in the student-created materials section, photo documentation is one element of developing student-created field guides. Allen's (1998) findings connect well with the notion of using photo documentation (Ching, Wang, Shih, & Kedem, 2006; Zimmerman, Gamrat, and Hooper, 2014) for making student learning more visible, and honour Indigenous ways of knowing as well.

Barhardt (2002) notes that educators who have participated in Indigenous ways of knowing field programs are able to provide Indigenous students with measurably beneficial instructional practices as the educators are more "in tune" with Indigenous ways of knowing and being of their Indigenous students (p.5). He calls this pedagogical framework a "bush consciousness" and defines it as a deep connection between an educator and its place (Barnhardt, 2002, p.3). This interconnectivity of educator and place would serve outdoor educators of young children well, as the more in tune the educator becomes with the environment, the more connections between the learning place and topic could be drawn for young children.

According to Kawagley, (1995) Indigenous students who had direct participation in real-world activities were able to build meaning in context. Kawagley extends this further to say that building knowledge in real-world ways is actually part of the formation of a "world-view" in learners. This connects with Barnhardt's (2002) "bush consciousness" (p.3) and the profound

impact that outdoor learning experiences have in shaping not only the knowledge that students acquire but who they become as well. The works of Kawagley (1995) and Barnhart (2002) can connect to the work of all outdoor early years educators as they strive to teach and learn outdoors while building profound literacy connections for their students. Moving forward, working together with local elders who have knowledge of place, local literacy practice, and local language in the development of student-created field guides in schools would allow for a holistic approach to literacy learning in place and would provide for a richer experience for students.

The inclusion of Indigenous Ways of Knowing in this chapter intends to bring understanding on three points. Firstly, it is important to note Canada's shameful past in terms of the treatment of Indigenous peoples. With the aftermath of residential schools still being felt decades later, it is time for effort to be placed on forging positive relationships between Indigenous families and school communities. This will take conscious effort on the part of school systems to ensure support for building understanding for the unique needs of all learners. Acknowledging that Indigenous Ways of Knowing are inherently different than a typical school construct, teachers must ensure appropriate access to learning experiences for all. Secondly, Indigenous Ways of Knowing emphasize on spirituality and connectivity with nature as has been discussed. This is important for teachers to seek understanding of as outdoor learning and Indigenous Ways of Knowing can be explored together in an educational context. Finally, this section is meant to acknowledge the detailed knowledge that local Indigenous people have of the place we work, play, and live in. Accessing this knowledge through working together with elders honours knowledge as elders can serve as co-teachers for the benefit of all students as the learning is rich and acknowledges cultural understandings of place as well.

Eco-literacy and Outdoor Learning

When considering outdoor literacy learning, we must also consider what it means to be "eco-literate" and how this knowing will impact outdoor literacy teaching as well. Orr (1992) stated that "if literacy is driven by the search for knowledge, ecological literacy is driven by the sense of wonder, the sheer delight in being alive in a beautiful, mysterious, bountiful world" (p. 86). This implies that this form of literacy, eco-literacy, is not merely a formulaic understanding of letters and sounds occurring while in nature, but is in fact a deeper and personal web that is woven between one's self and place and is a way of being within the world. Eco-literacy (sometimes referred to as ecological literacy) is more than an idea; it can become a paradigm when considering learning about and in (and for) nature.

Cutter-Mackenzie & Smith (2003) discussed the difficulties often seen in primary schools in Australia in regards to educating young learners about becoming 'environmental citizens.' These difficulties were attributed to a few main factors including a lack of experience in or knowledge about the local environment on the part of the teacher, and the dismissive way that many teachers feel about building ecological literacy as they instead tend to focus on curricular outcomes while in nature. One of the main concerns in the minds of teachers interviewed was that time spent on eco-literacy and ecological understanding was considered to be time spent away from curricular goals that needed to be met. Additionally, some teachers interviewed felt that environmental education was really part of a child's community knowledge and not part of school learning. On that vein, it was also noted that students who were considered eco-literate were in classrooms where teachers spent a large amount of time dedicated to learning in and about nature.

When eco-literacy was seen as an essential pedagogical content by primary teachers, Cutter-Mackenzie & Smith (2003) noted that students began to shift from ecologically illiterate to functionally/operationally ecologically literate. They presented that there are four levels of ecological literacy. These levels are (1) Ecological Illiteracy, (2) Nominal Ecological Literacy, (3) Functional/Operational Ecological Literacy, and (4) Highly Evolved Ecological Literacy. These levels progress through little to no understanding or knowledge of the state of the environment all the way to possessing an understanding of how people and societies relate to each other and how to live sustainably (Cutter- Mackenzie & Smith, 2003, p.503). The information presented by Cutter-Mackenzie & Smith (2003) is based largely on the work of Orr (1992). Cutter-Mackenzie & Smith (2003) found that overall teachers maintain a nominal level of ecological literacy themselves and as such, so do their students. It is only when the teacher is dedicated to deepening this understanding by including it as an important part of their pedagogy that real change is seen.

Place-Based Language Arts and Eco-literacy

Lundahl (2011) detailed the benefits that observing and experiencing nature have for students' development of writing skills and becoming eco-literate. Lundahl (2011) supports Orr (1992) in that she believes supporting students in environmental education/eco-literacy is not solely the role of science teachers—rather it is a shared role by all teachers, including Language Arts teachers. By building the eco-literacy of her Language Arts students through immersive Place-based education, Lundahl (2011) found that students felt authoritative, powerful, and personally connected to their learning. Their writing showed personal connection to the place they were learning and also showed their desire to protect the environment that they had become connected to. One of the skills that Lundahl (2011) felt was critical for successful writers was

keen observation. She argued that this skill is developed inherently by being in nature as it is ever-changing, and that students have more experiences to observe and recall for writing by learning outdoors.

Johnson (2014) used the works of Beatrix Potter to integrate eco-literacy in to a Montessori classroom of lower elementary students. As Beatrix Potter's works speak respectfully of the value of plants and animals, they link well to the development of eco-literacy in children. Johnson's (2014) students used journals to document the school gardens and their connections to it. This journaling saw children become deeply personally connected to the school gardens, having a plethora of material to write about, and also allowed children the opportunity to be present and reflective in nature, which in turn positively impacted their journal entries in terms of quality and diversity of topics. Linking back to the works of Beatrix Potter, Johnson (2014) noted that some of her characters emerged in students' writing and that some students even felt the need to protect the garden as they viewed it as the fictional characters' home. This shows a deep connection in the child's mind between place and literacy, and also is evidence of their developing eco-literacy. Johnson (2014) felt the eco-literacy that children developed in the garden will serve them throughout their lives and help to create future conservationists.

Wason-Ellam (2010) noted that children are becoming increasingly 'virtual' and disconnected in their interactions with the world around them. As such, she found that third-grade students needed to become more connected to place in order to become activists for the world in which they live. Using children's literature as a conduit, students in the Canadian prairie of Saskatchewan were asked to connect to picture books about farm life that were written about the area they lived in. This type of activity allowed all of the students to feel like experts as they were already familiar with the setting of the book as it was their home as well.

With the use of descriptive questioning, teachers were able to elicit student responses which made clear their emerging connectivity to place. As students became more engaged, the discussions about place moved outdoors and subsequently occurred there often. Over time, the teacher used various other picture books to tie in with outdoor learnings that the class had done together. The results were that students who had experiences in and connection to the place that they were learning and writing about were becoming increasingly activist in thought and showing greater level of connection in their writing as well (Wason-Ellam, 2010). This connectivity to place has been touched upon in the earlier section of student-created materials as it relates to literacy learning. Harr & Lee (2010) noted that as students felt more connected to place, their writing improved in both depth and complexity. This evidence compels educators to be mindful of place-based learning in their development of literacy curricula.

Tzou, Scalone, & Bell (2010) argued that the place in which high school science education occurs greatly impacts the social position that students take on about that topic. One example provided was of a community park that was surrounded by industry. Many residents in the area reported cases of asthma resultant from the industry's pollution. When students visited the park to learn about the trees growing there, many students reported negative feelings associated with the park due to its neighbouring businesses. Tzou, Scalone, & Bell (2010) found that students learning outdoors in this example were more energized to defend this green space than same age peers in a rural setting where neighbouring pollution was not a concern. This is evidence of how place-based education can affect a student's stance on a topic. Students in the urban setting felt more concerned about the pollution because they could experience it firsthand. By spending time in nature, students become eco-literate and connected to the natural world in a profound way. This connection to, and defense of, a space that students felt connected to shows

that the places earning take place matter and can affect our ecological mind frame overall as well.

Limitations and Barriers

In reviewing the relevant research, it is evident that there are still some unanswered questions which need to be addressed before educators have a full picture of all of the pieces necessary to effectively implement outdoor literacy education. One major limitation could be considered to be the finite collection of information which supports the efficacy of outdoor literacy instruction. While students were noted to 'like' outdoor learning or be 'more engaged,' it was very difficult to find data that showed how students who participated in outdoor literacy learning performed academically and socially further on in life compared to students who engaged in traditional classroom literacy learning activities, aside from some limited data in Eick's (2012) work. While Eick (2012) notes that all but one third-grade child who participated in outdoor science and literacy learning successfully met year end reading test scores, no evidence is given again a control group who did not participate in outdoor learning, nor is specific data provided about how successful the children were.

This gap in data is likely due to two main factors. First, outdoor literacy instruction is a contemporary educational practice, and as such has not been conducted on a large scale for many years. As with any current practice, we do not always have the past to rely on in terms of data or relevant comparisons. It could be considered that this form of literacy instruction is new and so no long term data may have been collected. Most articles on the topic as have been explored here are more contemporary in nature.

Secondly, the measurement of ‘effective’ may be different depending on how it is measured by educators and researchers. Eick (2012) and McMillan & Willhelm (2007) provided examples of student work that explicitly showed learning progress. In contrast, O’Brien’s (2009) work focused more on measuring effectiveness by defining it as positive student attitude towards and participation in learning. It is difficult to obtain a set of data that can prove without doubt that outdoor literacy learning is directly comparable (or not) to traditional indoor literacy instruction.

A barrier to the implementation of outdoor literacy instruction is the apparent lack of physical resources available for teachers to support outdoor literacy instruction. While some reference is made to materials that could be used, such as in the works of Einarsdottir (2014) and Neumann & Roskos (1990), no specific professional resources are mentioned for educators to use to implement outdoor literacy learning. This leaves a lingering question of why these resources are not mentioned; is it because they are inaccessible to most educators or is it because they do not exist? Chapter 3 of this work will seek to develop in concept a resource for teachers to use to design student-created field guides in their classroom practices.

One might assume that there would be discrepancies seen in outdoor literacy learning based upon environment type or socio-economic status, but as this topic is contemporary in nature, this is an area which has limited breadth. While much of the research examined focussed on outdoor learning in playground or forest settings, there is limited evidence provided about outdoor literacy learning in other outdoor spaces (e.g. urban centres). This is a problem when considering outdoor instruction—so much of the teaching and methodology will have to be site-specific, and will depend on availability of resources and what the chosen space allows for. With that in mind, it would likely prove challenging to develop curricula that meets the needs of all

educators and their outdoor learning spaces. There are two resultant pathways to be taken. The first is to develop a very site-specific resource for teachers in a given school based on their place. The second option would be to provide a looser frame for teachers to follow based on their own learning sites. This diversity in setting and in learning can be considered a benefit to all teachers and student; We can learn from others and seek guidance on how to begin the outdoor learning process, but the resultant learning is inherently our own based on our situations, locations, and experiences. This provides a unique opportunity to share with and learn from one another.

In terms of socio-economics, it would be interesting to see if and or how students' language acquisition and literacy skills are impacted when participating in literacy learning outdoors rather than indoors via a wider selection of data. It would be particularly compelling if a positive correlation was shown between students from lower socio-economic backgrounds and outdoor language acquisition as this is typically a less than positive correlation in traditional classroom settings. Additionally, the location of many lower socio-economic schools are urban and often without natural spaces nearby. It would be illuminating to explore how (if possible) outdoor literacy learning could take place in these settings.

Professional Perspective and Possibilities

Considering the literature discussing outdoor literacy learning, there are now some new avenues to seek answers about areas that are still lacking definitive solutions. When considering the insufficient data to support the efficacy of outdoor literacy instruction, one might choose to develop a norm-based assessment with which to collect this data. For example, many kindergarten teachers use a standardized assessment to assess children on letter names and sounds. Through collaboration, teachers could develop an assessment that would work for both

indoor and outdoor literacy learning settings and compare the results. Furthermore, with a collaboration of an entire school, teachers could work together with these same students in later years to see if the differences or similarities were still evident over-time.

As this type of longitudinal data is difficult to obtain, perhaps it would be prudent for interested educators to begin collection on their own. Through professional collaboration, teachers could work to create a set of assessment tools and data which would also be informative for our own practice about what is and is not effective when working to provide outdoor literacy instruction.

When considering the resources available for educators to support outdoor literacy teaching, expanding search parameters to find materials that have practical implications for teachers could be advised. Professional resource books and materials in the area of outdoor education at the primary school level are typically written to be a sampling of activities to suit various outdoor contexts. As a result, it is uncommon to find a resource that is tailored to a specific set of needs for teachers and students in the area of outdoor literacy learning.

It would be beneficial if a website or professional resource book was developed locally to best serve the needs of our local children and our outdoor environments. For example, many books about trees do not discuss the Garry Oak, a species of tree often found on Vancouver Island. If a resource was developed (for example on the topic of Vancouver Island's trees) that was user-friendly to both educators and students in the early primary years in the local area, it would follow most likely that more educators would feel comfortable using this resource and children would have more opportunities to learn outside.

The topic of professional development is important to discuss here, because often the personal comfort and familiarity level that teachers have with their local outdoor environments can act as a barrier against teachers taking students outside to learn. If teachers were provided with professional development to support outdoor learning then they would become more skilled and comfortable in making the choice to move literacy learning outside (Barnhardt, 2008).

In terms of socio-economic factors, some children do not come to school with appropriate clothing to learn outdoors. This can be a barrier to outdoor learning, but can be mitigated by teachers. In an effort to level the playing field, teachers often collect outdoor clothing for children such as coats and boots which students are welcome to access at any time. In this way, students are afforded the opportunity to be prepared for learning without extra strain on the child's family should they be unable to afford appropriate outdoor materials (Lockerbie, personal communication, July 17, 2015).

Directions for Chapter 3

As has been presented in this literature review, student-created materials serve as powerful vehicles for student learning and act as a connective element between students and nature. Chapter 3 will include a proposal for a professional resource for teachers to develop and implement student-created field guides to develop literacy skills in children. These field guides can take many forms using paper and pen (writing and drawing), digital photographs, QR codes, power point presentations, or be entirely digital on phones and tablets. Samples of relevant styles of field guides will be devised with a focus on using outdoor learning and field guides to develop literacy skills in children. Plans for implementation of such field guides will also be addressed.

Field guides have many functions. Traditional field guides, such as plant identification guides, are scientific and specific-- their function is to inform the reader of what type of plant they are looking at, detail the name of the plant, and list important attributes of the plant such as native area, or other plants in the species for example. Teachers have found that these types of field guides are limited in their use as the plants contained within are not specific enough to local areas, are too detailed for their students' uses, or are missing species that are very common in their physical learning areas (Franks & Vore, 2010). As a result, some teachers are developing curricula with students to create their own field guides which are specific to the places that their students are learning.

Chapter 3: Developing Student-Created Field Guides

As discussed in my review of relevant literature, outdoor literacy learning is a poignant way to engage students with authentic experiences to develop literacy skills. This process can involve reading and writing outdoors but the heart of outdoor literacy learning is the connectivity that exists between learner and place (Barnhardt, 2002; Kawagley,1995 ; Cajete, 1994).

In this chapter I will introduce and examine a proposed professional resource for practicing educators with the goal of facilitating the development of student-created field guides. While the main focus of the field guides for the purposes of this project will be literacy development, other areas of the curriculum such as art, science, social responsibility, and mathematics will be touched on as well. Before delving in to the process of developing student-created field guides, I will discuss professional inspirations which have encouraged me to pursue this project.

Inspiration from Forest Schools

As a teacher in Sooke School District, I am fortunate to have had access to outdoor learning areas at almost all of the school sites that I have worked at. As a kindergarten and grade 4/5 teacher at Ecole John Stubbs Memorial School, I had access to the forest of Royal Roads University. As a Grade 1/2 teacher at Lakewood Elementary, I spent a great deal of time with my class at Lake Ida Anne. Most recently as a kindergarten teacher at Millstream Elementary, we spent time at Millstream and on its surrounding nature trails. This coming year I will be working at John Muir Elementary and students there spend a great deal of time at Ella Beach which I anticipate will result in thorough exploration of the aquatic landscape. These experiences in nature have proven motivating for my students and have often been described as the best parts of

the day. They have also made up the majority of my cherished memories of my professional experiences with students. Learning in nature is a direction that Sooke School District is willing to support and pursue. Most evident of this, Sooke School District has piloted a "Nature Kindergarten" program at Sangster Elementary which has just successfully completed its third year of implementation (Krusekopf & Lockerbie, 2015).

Students in the Nature Kindergarten class at Sangster Elementary spend mornings outside with a teacher and early childhood educator in the Forest of Royal Roads University. Once weekly, they are also joined by an Aboriginal Education Assistant who shares her knowledge about the learning space, and shares stories and skills which are locale specific. This outdoor learning has now also extended to include beach learning at Esquimalt Lagoon. Lisa Lockerbie (personal communication, July 17, 2015) is the teacher of this program and speaks highly of the benefits that outdoor learning serves for her Nature Kindergarten students. She stated that there are two main benefits of outdoor learning for students that are distinctly different than traditional classroom learning experiences.

The first benefit is that children who may not typically see success in traditional classrooms have a place to be successful. Lockerbie (personal communication, July 17, 2015) felt that the outdoor learning space allowed space for variety and a great deal of independence for learners. She gave the example of a student who had great difficulty with numeracy learning. While he may feel challenged or unsuccessful in a traditional classroom's learning opportunities, in the forest he was successful and became known by peers as the best tree climber. This strengths-based environment that is offered by the many opportunities in nature allows for all students to feel successful in some way.

The second benefit noted was that the freedom of the forest allowed children to be their most authentic selves, including some behaviour that would not be appropriate or acceptable in a traditional classroom environment. Lockerbie (personal communication, July 17, 2015) recounted the experience of a kindergarten girl in the program a few years ago. The student she spoke of was shy and wanted to be a cat. All year long, while in the forest she participated with peers by 'meows' which students came to accept. Because the nature kindergarten experience is largely play based, play and learning opportunities intertwine, and in turn this atypical behaviour did not seem overly out of place and was not corrected. Eventually the girl became comfortable enough to speak, and Lockerbie felt that this acceptance and space to be her true self attributed to the girl's growing comfort level.

In terms of the benefits that outdoor learning has for literacy development, Lockerbie (personal communication, July 15, 2015) expressed that the outdoor learning experience highly motivates children to read and write as they want to share their detailed knowledge base about the forest with others. She used the example of bird field guides to illustrate her point. A boy in her class noticed a bird in nature, and used a field guide to find its picture. Once he found it, he wanted to know the name of the bird. Lockerbie said that she encouraged him to sound it out and once he was able to do so, his sense of accomplishment and support from his peers encouraged him to learn the names of all the birds that they came across. This is place-based learning at its best and literacy in action. The child was intrinsically motivated to read and wanted to learn more because of his own intention and desire. This type of motivation is my ultimate goal for students in the development of the student-created field guide project.

Like Lockerbie (personal communication, July 17, 2015), I feel that outdoor learning is beneficial and we are fortunate to live in a climate where we can go outdoors to learn almost any day of the year. Knight (2009) echoed this notion as she discussed the benefits of forest schools in the United Kingdom to counter obesity, and benefit students in terms of behaviour and socialization for early childhood learners. She noted that there are many safety considerations to make for forest schools including having trained staff and appropriate clothing for all students before beginning daily outdoor excursions. The reason her definitions of forest schools are of particular resonance and inspiration for me is that they focus on two main factors: trust and student-led opportunities.

In terms of trust, Knight (2009) noted that there is a reciprocal relationship between teachers and students to be safe and learn in the outdoor environment. Teachers must trust that students will make safe behaviour choices, stay with the group, and stay within boundaries. Students must trust that teachers will advise them on any potential concerns and that teachers invite children to take learning risks that are appropriate for them developmentally. Lockerbie (personal communication, July 17, 2015) agreed and said that she typically spends a month of instructional time building trust and community with her students before ever taking them in to the forest. Furthermore, Lockerbie worked closely with the principal at her school to develop a risk assessment guide to pre-plan what to do in any given situation and ensure student safety.

Student-led opportunities as outlined by Knight (2009) in her definition of forest school learning also prove to be poignant. Since the learning takes place largely without set agenda or time constraint in the forest, students have the freedom to take the leadership role in what interests them and that can guide the learning process. As the experience is open ended, children's play and exploration is highly collaborative and as such, it fosters high level cognitive

thinking and problem solving. Lockerbie (personal communication, July 17, 2015) echoed this sentiment as well.

Constable (2012) discussed the inspirations that forest schools can bring in to creating outdoor classrooms for student learning for children ages 3-7. She discussed the particular relevance that outdoor teaching has to literacy development which provides as a further example of the efficacy of outdoor literacy learning for young learners. In terms of speaking and listening skills, Constable (2012) noted that outdoor learning provides students lots of opportunity to extend on their listening, speaking, questioning, retelling, and dramatic use of language skills. Furthermore, the sophisticated vocabulary that children develop via nature learning is seen to contribute to their writing in the classroom in addition to more complex ideas and an increased willingness to write as well.

A final attribute of outdoor literacy learning that Constable (2012) found compelling was the creativity that children were allowed to express in nature. This creativity and inquisitive behaviour contributed to children's literacy development as they needed to purposefully use language and communicate with peers. This was echoed by Lockerbie (personal communication, July 17, 2015) who felt that the freedom of self-expression that children are afforded in forest learning contributed positively to all domains of their learning, including literacy learning.

Bilton (1998) discussed how outdoor learning positively impacts early years learners and how teachers can incorporate outdoor learning opportunities. Bilton (1998) explained how the 'free-flow' that exists when children engage in outdoor visual representation via drawing, writing, and building correlates positively with their literacy skill acquisition. By allowing open opportunity to explore with written word and drawing during outdoor learning times, students are

welcome to engage with documentation of their choosing as their interests guide them. Bilton (1998) discussed the use of various media including paint, coloured pencil, natural found clay, charcoal, chalk, and sand for children to explore 'free-flow' documentation of images and letters. The variety of practices would certainly prove engaging for children and foster their natural interest in experimenting with print.

The thoughts of Bilton (1998), Constable (2012), Knight (2009), and Lockerbie (personal communication, July 17, 2015) on the topic of forest and nature schools prove inspirational for me. They have documented and observed practices that serve children well while learning in nature. The experiences can serve as a road map to teachers such as myself who are going in to the forest with students to explore literacy. The experience itself proves to teach and develop children's skills by serving as inspiration for communicating, reading, and writing.

Professional Relevance of Student-Created Field Guides

Outdoor learning opportunities can be rich learning experiences that add authenticity and interest to student growth and understanding. Some teachers feel hesitant to move learning outdoors due to perceived concerns for student safety, lack of knowledge of how to teach outdoors, and difficulty in monitoring student progress. It is my belief that student-created field guides could assist with all of these concerns and are of utmost professional relevance at this time as teachers move learning outdoors.

As has been fore mentioned, taking student safety in to account is of utmost importance when planning outdoor learning experiences (Lockerbie, 2015; Knight, 2009). I feel that student-created field guides could also help with safety concerns as they serve as a grounding strategy for students while outdoors. Using student-created field guides could be a preliminary step in to

outdoor learning, and could even occur on the field/playgrounds at a school site to start. Something I have done with my class in the past is to take then out on the school grounds with notepaper, pencils, and coloured pencils to record observations of the area. Some students chose to draw, others chose to write, and some did a combination of both. This could be a part of developing student-created field guides, even when safety is a concern. This example demonstrated a low risk way to take students outside in a highly controlled environment. This could serve as a first step for teachers who wish to begin outdoor learning opportunities but who feel limited by safety concerns.

Lack of knowledge about how to teach with and in nature is another barrier for some teachers in pursuing outdoor learning. Gaining knowledge about local outdoor environments can be challenging and depends on an individual teacher's school site and previous exposure to nature in that type of setting (such as a coastal rainforest setting). Student-created field guides are a great way to access knowledge from nature with students and learn together. As students inquire about the natural elements around them, teachers can share their knowledge, and also teach strategies to discover more information as well. Furthermore, since field guides are created based on what students are experiencing, they can act as a time capsule of nature in that place. As long as the teacher has basic knowledge of the layout and safety considerations for the site they are working in, it is perfectly acceptable and also child-honouring for a teacher to admit that they themselves are learning alongside the children about their environment. The reason that student-created field guides work well for this type of teaching is the knowledge base explored grows and changes based upon student interest. For example, if a child shows interest in learning about a fern that she sees, the learning can take shape based on finding out more about that species of fern such as its' preferred habitat or life cycle. The teacher may not have designed

this learning, but it will be valid and authentic as it is what the child is interested in. Learning together through nature in this way proves to be valuable for both the student and the teacher. This learning can be recorded in and reflected upon by the student, teacher, and even shared with others by the creation and use of student-created field guides.

Some teachers perceive that teaching in nature would result in greater difficulty for monitoring student progress. Student-created field guides would greatly assist teachers with this work. Lockerbie (personal communication, July 17, 2015) described the 'quiet time journals' and 'nature detective books' that students use in her Nature Kindergarten program. The 'quiet time journals' are used a few times weekly while students find a quiet personal spot to write or draw whatever suits them in reflection of their nature learning experiences. The 'nature detective books' are used for students to record new learnings and questions about plants and animals that they observe during nature learning times. These books are useful for students to document their knowledge and express themselves, and are also useful for Lockerbie to track student progress over time. The same holds true for student-created field guides. While the content of the field guides may vary from student to student, dating work and ensuring students follow the order of the book in a conventional manner (front to back) where possible will allow the teacher to assess learning over time. This process is typical of classroom journal writing, and I feel that this same convention could be followed outdoors as well to document learning.

Personal Relevance of Student-Created Field Guides

The development of the student-created field guides is personally relevant and poignant for me considering both my past experiences and my future directions. In my classroom practice, I have been fortunate to work with administrators who believe in and support outdoor learning

possibilities for students. I have taken students outside to provide physical challenge via hiking and yoga, natural exploration of flora, fauna, and landscape, and academic stimulation via delivery of language arts, science, and math curricula outdoors. I feel I can expand these learnings for students with the development of student-created field guides to document learning over time. I feel that literacy teaching is my developing strength area and the use of field guides will help me to help my students as I pursue to make literacy instruction motivating, relevant and challenging for the students I work with.

Apart from my classroom experiences in kindergarten through fifth grade, I have also worked as an Early Childhood Educator and volunteered as a leader with Girl Guides of Canada-Guides du Canada for the past decade. These experiences largely took place outdoors and I remember the experiences of children challenging themselves and discovering new skills in nature as the highlights of this outdoor learning and teaching. Through these experiences, I have developed skills and localized knowledge and been trained in several outdoor safety procedures that can be transferred to the school context at well. Sharing these experiences and helping children become passionate about nature is a passion of mine that I can share with students through the field-guide project.

The future holds exciting potential for me professionally. Starting in September, 2015, I will be working both as a Learning Support Teacher at John Muir Elementary in Sooke, B.C., and as the Sooke School District's Early Years Co-ordinator. Both of these positions are serving as personal motivation for the development of this student-created field guides for literacy learning project. As a Learning Support teacher, I will have the privilege of working with students in small groups. This is a rare opportunity in today's public schools and I want to maximize the experience for learners. By using student-created field guides in a Learning

Support setting, students will have the opportunity to do highly motivating work that honours their interests and encourages skill development at the same time. Working as the District's Early Years Co-ordinator will see me working with colleagues to develop and plan curricula for their Strong Start Programs and Primary (Kindergarten through grade three) classrooms. In this role, I will have the opportunity for innovation with colleagues, and I hope to share my student-created field guide project with other teachers in the district for possible implementation in their classrooms as well.

Using Student-Created Field Guides to Teach, Learn, and Inspire

The inspiration behind this project's development is ultimately taking learning outdoors in a way that is accessible to many teachers and students who may be inexperienced with nature learning. Throughout the remainder of Chapter 3, I will be detailing possibilities that are available to teachers who wish to develop field guides with students in their professional settings. As my primary focus of the field guide project is effective outdoor literacy instruction, the activities listed will serve as a guide for teachers to use field guides to enhance pre-reading, reading, and writing skill development in students.

The field guides that students will develop will serve three functions; they will teach, they will aid learning, and they will inspire. The field guides will teach Teachers about each child and his or her skills. They will also teach students via reflection how far they have come in their literacy acquisition process, and can be used as an explicit teaching tool via direct instruction which will be explored in a subsequent section. The field guides aid learning as they serve as a record of what children already know or are wondering about, and are tangible, editable vessels of knowledge. They will also aid learning as their revision by teachers will help

to target instruction to be appropriate to each learner's needs. The field guides will inspire as students can share their learnings and discoveries with peers and adults and they will be able to become experts on localized knowledge which will motivate them throughout the project.

Getting Started

When undertaking a field-guide project, it is necessary to consider some crucial details to make the experience successful before venturing outside. Throughout this section, appropriate materials and information on location consideration will be discussed. In terms of location, I keep the professional practice that an adult should visit the site to do a safety check for any dangers before bringing students in to the area. In the school context, I have previously gone out to the location I am planning to take my class to during recess or lunch hour. When it is not possible to pre-visit the location due to time constraint or distance to the site, an adult should lead the group and do site checks with the children waiting safely in eye-sight. It is helpful at any times where possible to have more than one adult with the group for just such situations. As a starting place, I have taken children in to spaces that have some sort of natural barricade for limits, and I usually bring cones or flagging for younger children to set up boundaries as well.

When I took my kindergarten students to the Royal Roads University property, we went to a clearing that was off of a well-marked path to begin with. The clearing was surrounded by trees and brush on three sides, and I used cones to denote boundaries on the fourth side. Setting boundaries like this will assist teachers in ensuring student safety and as students become proficient at staying within those boundaries, teachers can change or expand the boundaries to allow for more exploration. Assessment of the daily weather and appropriate materials is also an

important consideration for taking students outdoors. Having appropriate clothing for the weather is essential to making the most of your outdoor learning experience.

One of my favourite sayings is ‘There’s no bad weather, only bad clothing.’ With this idea in mind, I have developed a collection of weather appropriate options (waterproof clothing, boots, warm clothing, hats and gloves) that are available for students to use if they do not have an appropriate option available to them that day at school or if the child’s family is unable to outfit them with weather specific items. Lockerbie (personal communication, July 17, 2015) suggested that teachers pursuing outdoor learning collect used items from thrift stores or seek donations of weather appropriate clothing from local children’s or outdoor shops.

Constructing the Field Guides

Once environmental provisions have been considered, development of the physical field guides can begin. While field guides could take many forms, this project will focus on the development of a field guide using a hard covered notebook with blank (un-lined) pages inside. I have chosen to use a simplistic design so that it could be replicated for a reasonable cost for teachers who wish to implement such a project. Starting with the notebook, I feel an element of personalization and clear labelling of the student’s name on the front cover is a good first step. Depending on the child’s age, the name could be written or typed by the teacher, or the child could write his or her name on the cover by hand.

The cover design process serves as a good time to discuss with students what the field guides will be used for. Some teachers make the caveat that the field guide should only contain images of nature or must not include logos or characters from video games, for example. As the field guide is intended to be the child’s record of nature, it is my opinion that teachers should

take students in to nature to provide inspiration for this design process. The physical act of the cover design could take place in nature or in the classroom depending on the teacher's preference. I covered the completed cover with clear contact paper to increase the durability and longevity of the cover. Please see figure 1 to refer to cover design.

Figure 1. Cover Design.

Field Guide Layout and Organization

Implementing some simple steps for organization and layout at the beginning of the field guide project will prove beneficial as time goes on with the project and students have created many entries. At the front of the field guide, it would serve beneficial to create a loose table of contents which can be added to as time goes on. By starting this table of contents on the inside cover and using the 2 page spread to record entries and page numbers, students are also learning about the importance of text features. It is also beneficial to have students number the pages in the corner as they create entries. This helps students to order their work sequentially over time and also develop numeracy skills as they number and order their entries. Page numbers are another text feature which used in conjunction with a table of contents can help readers find

information. By creating the table of contents and page numbers, students are learning about the benefits of text features by through their use. Please refer to figure 2 for an example of this type of layout. This is a real-world approach to learning about text features that is meaningful to students as the correct use of these features assists the students to relay their learnings to peers.

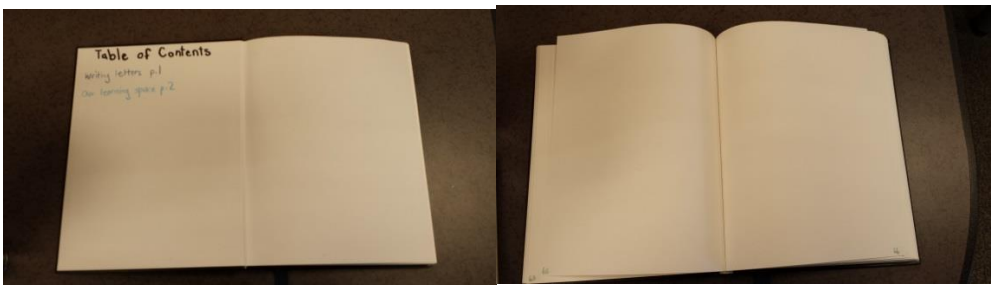

Figure 2. Table of Contents Page.

The use of a bookmark can prove to be beneficial and time saving when a student feels inspired and quickly wishes to find the next blank page for entry or save their place when a hands-on learning opportunity emerges in nature. As a nod to field guides that can be purchased about plants and wildlife, adding a ribbon book mark to the inside of the back cover elevates the authenticity and usability of the field guide for the child. Allowing the child a choice of ribbon colour further increases his or her ownership over the learning they will do through the field guide project as the process of creating the field guides honours student choice. Please see figure 3 for an example of this ribbon bookmark.

Figure 3. Ribbon Bookmark.

An important physical element to be added to the field guide is a clear zipper bag for specimen collection. In my example, I have affixed the zipper bag to the back cover of the field guide using duct tape. The placement of the bag will not interfere with students writing or drawing within the field guide. I would recommend that a teacher complete this part of the project, allowing the student choice of coloured tape to affix the bag with. The intended use of this bag is to collect non-living specimens that students are inspired by and wish to share with others or retain for further observation. This specimen bag also affords teachers the opportunity to explicitly teach about living and non-living organisms, and develop guidelines about what items are safe and unsafe for students to touch. Furthermore, the specimen bag allows students to share their findings within constraints which ensure they have collected something appropriate. Learning in nature also affords children the opportunity to become conservationists, and as such teachers can also explore the concepts of returning specimens to their natural habitat after close observation. Please see figure 4 for this specimen bag.

Figure 4. Specimen Bag.

The final physical element to include in the field guide is a ‘dry-erase’ area on the inside of the back cover. This can be created easily using duct tape and when a dry-erase pen is used, students can use this section of the book as a mini white board. As an intended feature of these field guides is literacy development, this dry-erase area can allow for letter formation practice by students, or as an area for teachers to write or draw to assist students without marking or changing the student’s work elsewhere in the book. This area is the only place for temporary messages in the field guides and as such should be used to help guide learning and provide practice place when the learning needn’t be documented. Please see figure 5 for an example of the dry erase area.

Figure 5. Dry- Erase Area.

Necessary Materials

When deciding how to use the field guide, teachers will need to make decisions based upon available materials. Some optional materials will be discussed in a subsequent section which will elevate the field guides' complexity but are not necessary to their use and implementation. Some materials lend themselves well to use outdoors and should be included in a toolkit for field guide use. Particularly with young learners, management of materials can be challenging. As such, I recommend that the teacher be responsible for all of the tools which can be kept in a tote bin and brought out to the learning space with students having free access to materials as they require them.

Writing outdoors requires some special consideration as weather conditions can impact the efficacy of some writing materials such as felt and ballpoint pens. The most effective outdoor writing tool is a pencil as it can even work in rain. Having a collection of sharp pencils and hand sharpeners in the tote bin will prove to be the most effective and highly used tool for the student-created field guide project. For early years learners who are still working on developing their pencil grip, it is important to note that children have access to 'primary printer' pencils which are thicker and appropriate for their stage of development.

Some teachers argue the use of erasers in early years learning either feeling they should be allowed to provide students opportunity to change their work, or that they should not be allowed as student learning is not visible once it has been erased. I feel that erasers should not be included, at least initially, as the focus is on learning and recording ideas rather than achieving perfection. Teaching students to use one line to strike out un-wanted ideas is not only more time

efficient, but modelling this strategy shows students that mistakes are a necessary part of learning.

To add colour, students should have access to pencil crayons as they will be effective in rain where wax crayons would not be. Pencil crayons can also be used to make leaf rubbings when a student wished to have documentation of the leaf seen during nature learning. Another option for adding colour that can be included in a tote bin of supplies is water colour paints. These paints are excellent as they are in a tray with several colours and you just need a drop of water to produce vivid colour. To connect further with place, I have had experience with students creating paintings of the place they are in using water from that place. For example, my class at Lakewood Elementary created water colour pictures of Lake Ida Anne using lake water to paint with. This deepens the connectivity of learner to place and should be considered as an option where environmentally appropriate. Please refer to figure 6 for an example of this.

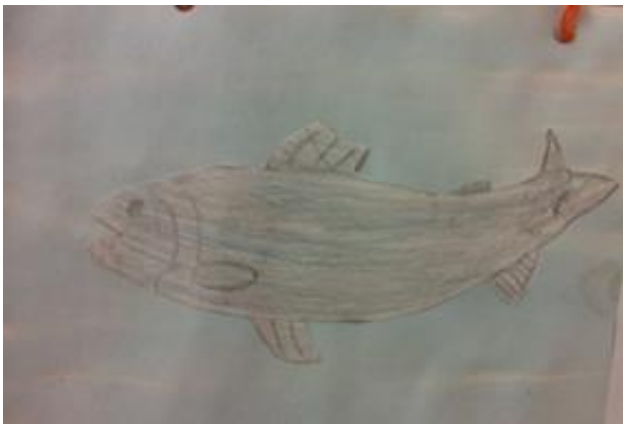

Figure 6. Lakeside Water Colour Painting.

Glue sticks and tape are also necessary materials for student-created field guides. As these books will be well-loved and roughly handled, rips and tears are inevitable. Tape will help fix these problems quickly and could also be used to tape in pictures or notes. Glue sticks are

included for these functions as well, and depending on the situation could also be used to collect a dirt or sand sample in the field guide. Teachers may also choose to have a date stamp and stamp pad so that students can quickly and easily date their work do teachers can keep track of

The final material that should be included is dry-erase markers to make use of the dry-erase area in the back of the field guides. These do not require erasers as the can easily be rubbed off with a hand or item of clothing. By having a class set of dry-erase markers on hand, students are able to all work together to practice letter formations as guided practice, or receive tips from peers or teachers that are required temporarily.

Optional Materials

Chapter 2 focussed heavily on the potential uses of technology in regards to outdoor learning. I first want to acknowledge that these resources will not be available to all teachers and as such, I have included the use of technology in the optional materials section. While I feel that the inclusions of these materials is extremely useful, I do not want anyone to feel that the development of student-created field guides is impossible without them so hence their inclusion in this section.

Phones, iPods, tablets, and digital cameras are extremely useful for outdoor learning documentation and reflection. As detailed by Ching, Wang, Shih, & Kedem (2006), when students take photographs the documentation is meaningful to them as it is captured through their eyes. These student-taken photos also are meaningful to teachers' understanding of student progress and process and can provide teachers insight about the direction that curricula should take based on student interest and ability. Connors (2011) used photo documentation through iPods as a tool to engage students in outdoor learning. This is a valid consideration as some

students may not have much life experience in nature prior to the student-created field guide project. The use of technology with photo documentation as the intended function can help students who are reluctant to participate in outdoor learning opportunities engage with the outdoors using a familiar device. As Allen (1998) noted, using photo documentation also honours Indigenous students' ways of knowing as they are able to communicate their understandings that are unique to their life experience via this visual form of documentation.

Photo documentation can be done by students or teachers and the resultant photos can be printed out and glued in to field-guides. As an extension activity, students could also add written captions to photos which would explain the learning process that they engaged in. Figure 7 provides an example of this process.

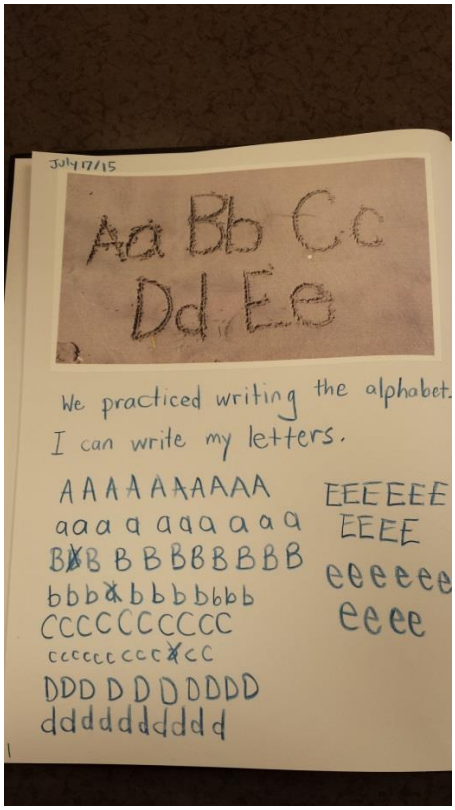

Figure 7. Photo Documentation Example.

Strategies for Using Student-Created Field Guides

Vast possibilities are inherent in the use of student-created field guides. This section will suggest some options for implementation of student-created field guides to support outdoor literacy learning for young learners. As discussed in Chapter 2 (Hare, 2012; Barnhardt, 2002; Kawagley, 1995), a large part of outdoor literacy learning is the experience itself that occurs in nature. Outdoor experiences can be documented in student-created field guides via re-telling in the field guide with words, drawings, and photographs or some combination of the three. As was previously mentioned in Chapter 2, I have intentionally kept the design of the field guides simplistic to help keep them financially accessible to as many learners as possible. Where photos have been included in the field guide, I have used colour printing for clarity in my images for the reader, but I do recognize that this amount of colour printing would not likely be permissible in schools, and black and white photographs would serve as a reasonable substitute. I will now discuss three possible uses for the field guides and literacy development. These uses are: natural spaces to encourage student writing, practicing the formation of letters in nature via letter hunting, construction and documentation, and uniting plant knowledge with literacy development.

Natural Spaces Encourage Student Writing

As was discussed by Humberstone & Stan (2011), Eick (2012), and McMahon-Giles & Wellhousen (2005) children that are connected to their literacy learning experiences in nature have a personal topic to write about and also showed greater sustained focus and connection to their writing. As is seen in image 8, natural spaces can be used to encourage writing in various

ways. Here I have assumed the role of a young learner who has chosen to write about her learning space.

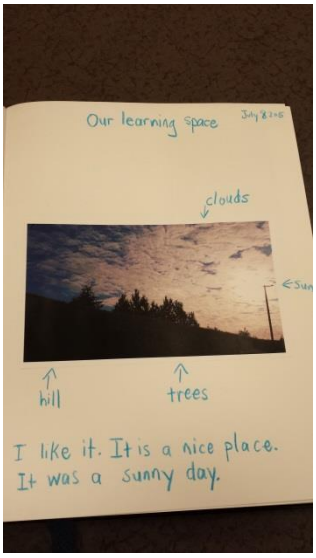

Figure 8. Nature Inspired Writing Example.

In figure 8, you can see that I have chosen to focus on the use of some text features (title, labeling, writing from left to right). As I am assuming the lens of a young learner, I kept the writing simplistic and descriptive of the place and the feeling evoked in that place. This is meant to predict an entry made by a child. I am also assuming in this example that this entry occurred on two separate occasions. On the first occasion, the students would take the photographs of the learning space. By using a student taken photograph, students have the opportunity to direct the documentation of their own learning and share what they know as is supported by research (Zimmermann, Gamrat, & Hooper (2014); Ching, Wang, Shih & Kedem (2006)). On the second occasion, students would glue the photograph in to the field guide and record the written documentation.

If a teacher wished to make this a more guided writing activity, he or she could use the dry erase section of his or her own field guide to write key words such as ‘clouds, hill, tree, sun’ to model these words for students. In my professional practice, I have used the ‘Jolly Phonics’ program (Lloyd, 1993) to teach letter names and sounds, as well as letter blends and their sounds. I have noticed that children who use the Jolly Phonics program are able to use phonetic spelling proficiently to write simple words. One of the suggested elements of the Jolly Phonics program is to use write boards to practice writing words by using the phonetic sounds presented in the program. This labelling activity and the dry-erase section of the field guides would serve as a perfect opportunity for literacy learning.

Learning About Letter Formation in Nature

Outdoor learning can take many forms in connecting with literacy learning. In regards to letter formation, children learn to perfect their letter formation through practice. As was mentioned in the previous section, I use the Jolly Phonics program (Lloyd, 1993) to teach letter names and sounds in my classroom practice. This could be explored outdoors as well. In the example provided in figure 9, I chose to begin this letter exploration with the letter ‘s’ as it is the first letter taught in the Jolly Phonics program. After introducing the letter, typically follow up activities are done to explore its use in the real world. This seems like a natural tie in to look for the letter in nature to extend student learning.

I included images of 5 environmental print ‘s’s (plant, branch, leaf, playground structure, and stop sign) and one that I made (rocks and twigs). With students, I would encourage them to document these themselves by either using photos as was done here, or by having them draw what they saw. These images were printed out and glued in to the field guides, and there was a

space designated for practicing the letter formation using pencil crayon. The field guide entry has multiple learnings inherent in it. As is seen in the middle of the page in figure 9, the student was also asked to identify if a letter ‘s’ was present in her name, and then practice writing it. Furthermore, the words in the bottom left corner of the page in figure 9 represent the student’s attempts at writing words they know using the letter being examined. Finally, this letter hunt process can also help students develop ordinal counting skills as they keep track of how many letter ‘s’s are found during the letter hunt.

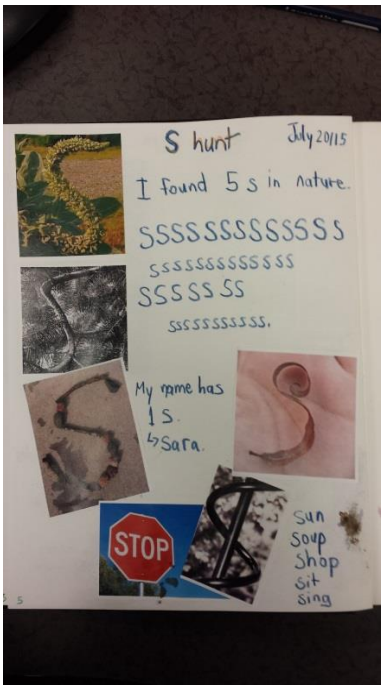

Figure 9. Letter Hunt Example.

The shared experience of the letter hunt activity would serve as a main proponent of student learning and recognition of the letter s. By having the letter’s shape repeatedly isolated, and then also referred back to in its conventional form allows children repeated exposure to the letter and therefore an increased likelihood to build connection to that letter and its shape. I included the image of the stop sign here, as this type of environmental print will likely be

commonly spotted by students while outside. This type of environmental print serves an important function as it is part of a child's early meaning making and understanding of how print conveys meaning (Neumann, Hood, Ford & Neumann, 2011). This experience could be replicated with any letter in the alphabet, however may not be advisable in situations where the letter is extremely difficult to find (such as q) as to not frustrate students.

Uniting Plant Knowledge and Literacy Development

Recording information about plants is a logical starting place for using field guides. Since there are many species of plants available to study in natural settings, this will increase student's ability to collect data easily. In figure 10, I have used the example of the locally native plant Oregon Grape. This entry most closely resembles a 'typical' field guide—it provides information about the plant's berries, seeds, and leaves, as well as some facts about the plant. The creation of the entry shown in figure 10 would likely take place over several sessions. I did a leaf rubbing with pencil crayon, used the juice of a berry to stain the page, and preserved the seeds from the berry with tape at the bottom right of the page. Since I do not believe in picking anything living, I foraged on the ground for fallen leaves and berries. To me, this is an important note to consider when engaging in field guide creation with students as I hope to foster a sense of eco-literacy in students as well.

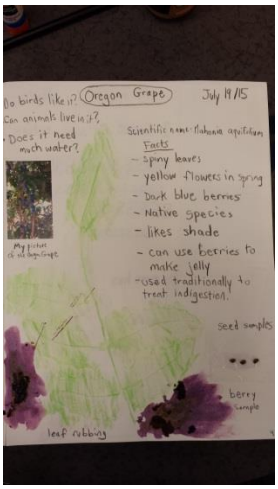

Figure 10. Plant Knowledge and Literacy Development Example.

Through the creation of this entry, I also formulated some questions that I had about the plant and recorded them at the top left hand corner of the page. Upon returning indoors, I researched facts about the plant and recorded them on the right side of the page. This process could be done individually or collaboratively by students as their interests dictate. Using the field guide format allows students to record information that they feel is pertinent about the plant, and using this type of inquiry based learning is simultaneously assisting in the development of the child's literacy skills. This entry required writing about the plant, reading about the plant and could even include discussing the plant with others. It is through this collaborative process that acquisition of plant knowledge and literacy acquisition are intricately linked.

Thinking Beyond

The three previous examples for implementation of student-created field guides serve as a springboard for the many possibilities for students and teachers who embrace outdoor learning and its connectivity to literacy learning. Lockerbie (personal communication, July 17, 2015) discussed how her students use a 'quiet time journal' to simply reflect and write or draw about

nature. This could be an inclusion in the field guide learning process as well—while there is room for explicit literacy instruction, teachers should be careful to ensure the instruction with and use of student-created field guides is developmentally appropriate, engaging, and allows for the children to explore what interests them. While I have focused my use of field guides on literacy development, there is no reason it needs to be limited to that. Nature can inspire us in all realms of our life, and as such, the field guides could serve as a reflection of this. The possibilities are limitless and I hope to discover more of the possibilities as I begin implementing this project with students in the near future.

Chapter 4: Professional Reflection and Future Directions

Throughout my learning journey in the Master's of Education program, Early Childhood Education specialization, my thinking has shifted professionally in some areas, and has been affirmed in others. This process has been interesting and motivating for me personally and professionally. I have learned to best utilize my time in order to complete my course work and my job requirements while still trying to juggle the rest of my everyday life. In Chapter 4, I will first discuss the professional aspects that have changed for me through this learning process, and then I will discuss my beliefs that have been affirmed. My plans for applying my new knowledge to my future work will be discussed and three key recommendations for educators who wish to work with field guides in their professional contexts will be provided.

Changing my Perspective

The course work of this Master's program has been extremely thought provoking at times. I have been challenged to re-think and process my pedagogical beliefs and why I hold them. As a practitioner, I am constantly thinking of the practical applications that my learning will have in my classroom practice and daily interactions with students. There were two courses that I found pivotal in changing my beliefs about education. These course were EDCI 591 "Guns and Barbies: The Complexity of Play in Early Childhood" and EDCI 487 "Special Topics in Education: Voice and Choice for Children."

EDCI 591 "Guns and Barbies: The Complexity of Play in Early Childhood" was a career changing class for me. It was the hardest and most rigorous course I have ever taken. This was in large part due to the excellent instructor, Dr. Ulrich Mueller. His reading list was extensive on several themes of childhood play which included the contentious topics of gendered play,

playground design, and safety in play. The coursework required several hours of reading and writing each week and I can say that I have never felt more motivated or intrigued to complete my assignments. This motivation came from Dr. Mueller's compelling classes and unique questioning style during lectures which challenged course participants to re-think their pedagogical beliefs by evaluating and contrasting works of various authors on any given topic. Via guided discussions and group activities, Dr. Mueller's lectures were different in structure and engaging each week and as they were 3 hours long, I was impressed with the consistent engagement of participants.

My thinking was transformed in EDCI 591 because Dr. Mueller challenged students to take on opposing viewpoints as their voice when writing and participating in class discussions. While this proved to be challenging, I realized how much I was learning about my own pedagogical beliefs when I was trying to speak from a point of opposition. I had not previously delved deeply in to the role of gender in play and how it affects children. After this course, I found myself recognizing the gendered stereotypes that adults and children put in to place in the context of children's play often without realizing that they are doing so. This compelled me to encourage gender neutral language in my own practice in reference to play and have since stressed the benefits that play opportunities have for children of all gender- identities, and how these identities should not limit any child from any play opportunities. I have made more thoughtful choices about the types of toys I have in my classroom and presenting them in gender neutral ways since taking this course.

In terms of safety, EDCI 591 challenged me to think critically about the differences between perceived risk and actual risk of children's play. Previously, I was leery to allow children to explore their physical limits via climbing and digging in what may have been

considered ‘unsafe ways.’ In EDCI 591, we examined statistics about play safety and also the perceived challenge and risk by children of a play structure/play area. I discovered that children were more likely to engage in play which they perceive as challenging, regardless of it actually is. Children typically enjoy play opportunities that they find risky or challenging as they enjoy the opportunity to push their limits and achieve a goal. This discovery was poignant for me. I realized that my own perceived fears were prohibiting children from exploring their physical limits. I since have gone outside of my own comfort zone and permit students in my care to take more risks outdoors, and I have noticed children have shown an increased sense of pride over their play accomplishments.

EDCI 487 “Special Topics in Education: Voice and Choice for Children” shifted my ideals about the ‘perfect’ primary classroom set-up. As this course was my first one back at UVIC since my Bachelor of Education degree, it was a refreshing look at the academic side of pedagogical decision making for classroom programs. Before the course, I had strived for a bright and cheerful classroom with themed and seasonal decoration. My learning in EDCI 487 shifted my feelings away from an over-stimulating colourful classroom, to a more neutral, nature inspired learning sanctuary approach to classroom design. In my teaching experience, I have found that for many children, school is the calmest place in their lives. With that in mind, I built my class environment carefully to be a peaceful and inspiring place for children full of delicate finds from nature to explore and discover. I also became interested in the Reggio Emilia School after taking this course and this interest guided much of my academic work throughout the Master’s program.

These experiences in EDCI 591 and EDCI 487 transformed my teaching practices and made me think critically about my role as teacher and the influence I have in the lives of my

students. After these courses, I feel confident that my role has become more defined as a teacher, and I feel stronger in my teaching beliefs through the questioning I did in these courses.

Affirming Beliefs

While I was challenged to change my thinking throughout the process of my Master's degree, there were also times that I had my pedagogical beliefs affirmed. I have always felt that children's opinions, cultural knowledge, and experiences should be honoured and included within classroom teachings. While this was not sole intended focus of the course EDCI 580 'Qualitative Research Methods,' it was an overarching tone of the course. A large emphasis in this course was on Indigenous Ways of Knowing, and as such, I had my pedagogical beliefs affirmed that Indigenous Ways of Knowing and localized knowledge benefit not only Indigenous students, but since they acknowledge the teachings inherent in place, they are useful for all learners.

While doing a qualitative research project, I was humbled to think of those I observed and worked to ensure their anonymity. This mirrors my classroom practice. Often times, parents will come in to blame another child and look to me as the teacher to do the same as well. Even in cases where a child has difficult behaviour which challenges the learning of others, I have always felt it essential that each and every individual feel safe and protected in the classroom. In this way, the qualitative research methods course reinforced that I use best practice to work with all students and respect their personal integrity.

Applying New Learnings

Professionally, I am in the midst of an exciting transition. I am moving from classroom teaching to two new roles in September 2015. These roles are as Sooke School District's Early

Years Co-ordinator and as John Muir Elementary School's Learning Support Teacher. Both roles will provide opportunities for me to apply my learning from this program in exciting and innovative ways.

At John Muir, I am thrilled to have the opportunity to support student learning in a smaller group setting. This is a rare opportunity for teachers as class sizes are growing and support for student need is never ample. The administrators of John Muir Elementary School are open to innovation and support outdoor learning. I plan to implement the field guide project I have developed here with the students I will be providing learning support to. By using an outdoor learning approach, I hope that students will enjoy and anticipate this out of classroom learning time as a positive experience. Often times, I have noticed students feel embarrassed or singled-out when they leave the classroom to work with the learning support teacher. I hope the opportunity to learn outdoors will help alleviate these potential negative feelings.

In my role as Early Years Co-ordinator, I will serve as an advocate for early learners from ages 0-8, within the district and amongst community organizations as well. I am fortunate in this role that it will largely take the direction that I choose to take it. I have already planned a book club for Strong Start Facilitators and Teachers focused on the book *Beautiful Stuff!: Learning With Found Materials* by Cathy Weismann Topal and Lella Gandini. Lella Gandini is one of the founders of Reggio Emilia learning, and I will integrate my knowledge of Reggio learning gleaned from my Master's course work in to the book club as well. Furthermore, I am scheduled to co-design a nature documentation project with the district's technology co-ordinator. In this project, we will be helping 2 yet to be selected schools use iPods to document nature learning via photos and videos. This project aligns perfectly with the learning I have done

through my literature review for this capstone project. I am excited to weave my academic learning immediately in to my professional practice in creative and innovative ways.

Recommendations for Teachers

If teachers are planning to move learning outdoors, there are several considerations that they will need to make. This section will focus on the three key recommendations for educators who wish to work with field guides in their professional contexts. Upon completing my literature review and after speaking with Lockerbie (personal communication, July 17, 2015) I feel that the first important recommendation for teachers is exploring the outdoor safety component of outdoor learning and planning for success. In order for outdoor learning to go smoothly, teachers must assess the environment and weather conditions carefully and have a plan for what constitutes a dangerous situation within that learning context. Along these lines, teachers must also ensure that students have access to weather appropriate clothing, and should have a plan to assist students with these needs if the child's family does not provide appropriate personal equipment for whatever reason. Ensuring that school administrators are aware of the plan and support outdoor learning is also crucial to planning for success as there may be times that teachers require an administrator's support in nature to assist with student learning or behaviour concerns.

Once safety considerations have been made, a second recommendation I would make to teachers considering a field guide project is to decide upon the intended structure and use of the field guides themselves. The structure and use of student-created field guides are limited only by one's imagination ultimately. As such, it is essential to hone in on the intention of the field guide project first, and then subsequently consider design elements that would enhance student

learning. For example, if the intention of the field guide is to promote the development of skills in visual arts, the supplies needed and field guide type would be different from a field guide used to promote graphing skills in mathematics. In the scope of this project, I chose a base journal with un-lined pages as a portion of the project is focused on print development. With this learning goal in mind, a lined journal would be inappropriate and could hinder student work. I have also chosen the inclusion of a dry-erase area, for example. My intended function of this space is to allow the teacher an area for guidance or feedback without altering student work in any way. If a field guide project was taking place with older students who are proficient at forming letter, the teacher may render this area useless and wish to omit it. I feel that conceptualizing the intention of the project first and planning for the field guides design before introducing this process to students is a way to set students up for successful learning. The added beauty of this type of project is that the output is physical and as such, can be altered for efficiency and preference as time goes on. For example, a teacher may decide after using field guides for a time that it would be more efficient to include a pencil attached by string to the field guide itself. These adaptations will be site and situation specific, and hopefully would add to its' usability and overall efficacy.

A final recommendation that I would make to teachers considering a field guide learning project is to spend a great deal of time personally exploring the space where the learning will take place. By spending time in the learning space before taking students there, teachers would be afforded the freedom to explore paths and surrounding learning areas in nature and ponder their possibilities. This experience may also help teachers to decide the physical elements of the field guides that are necessary as well as what materials that they will need to bring with them in to nature to maximize the potential for student learning. By visiting the learning site on several

locations, teachers could also observe trends in the area and changes over time. For example, when I taught kindergarten at John Stubbs, one day I noticed a wasps' nest developing on our 'usual path.' Later that day I went back by myself and I noticed that there was an alternate path that I had not taken my students on before. After assessing that this new path was safe, it became our path in to Royal Roads from then on to avoid the wasps' nest and potential injury. Spending time personally in the outdoor learning space on repeated occasions will also prompt teachers to notice new aspects of the natural learning space each time. These new observations would likely be shared with students upon subsequent visits and potentially spark a new interest area for the students.

Personal Reflection on Learning

The process of researching and developing this capstone project has been rigorous and rewarding. At times, I felt confused and without direction. I have experienced times of personal setback and remained committed to this project as I felt my learning would be more beneficial in the long term than focussing on my setback in the short term. I am excited to share this learning with others professionally, and am pleased that this work will be able to see immediate implementation with students, at least in part. In retrospect, I am thankful for my times of confusion while deep in research as they led me to seek clarity on various issues. The clarity I discovered was that outdoor learning is more than an interest area of mine, it is a passion. I hope to share this passion with others and perhaps help them to cultivate their personal passions with nature learning as well.

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