

Nature-Based Learning to Support the Development of Reading Comprehension

by

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Bachelor of Education, University of Victoria, 2000

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Abstract

Nature-based settings have a positive influence on the intellectual, physical, social and emotional development of children providing an engaging and authentic context for children to engage in learning. In this project I explore how nature-based learning can specifically support the growth of reading comprehension and critical literacy skill development. The current literature on experiential learning, reading engagement, and critical literacy identifies several factors that support the growth of reading comprehension and critical literacy skills that can be applied to nature-based settings. These findings are presented in a two-part workshop with a practical, hands-on component that supports teachers in utilizing nature-based settings for reading comprehension and critical literacy skill development.

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Chapter One

The daily train of discoveries, usually six-legged, that find their way into my classroom via little hands, offers a glimpse of the rich natural environment surrounding the elementary school I teach at in Shawnigan Lake, BC. Nature-based settings provide real-world experiences that are meaningful, relevant and intrinsically motivating for children (Eick, 2012; O'Brien, 2009) and I am interested in identifying how these settings can provide a context that will engage children in foundational critical literacy skills and support growth in reading comprehension. Nature-based learning has been shown to support the overall physical, mental and cognitive development of children (O'Brien, 2009). In this capstone project I aim to identify ways in which nature-based settings can support the development of reading comprehension and early critical literacy skills, especially for children who tend to struggle in traditional classroom contexts.

Rationale

For the past three years I have been teaching primary students at an elementary school in a community a considerable distance from my home. New to the school community, my focus was primarily on getting to know staff, students, and routines within the context of the immediate school boundaries and, being unfamiliar with the neighbourhood, I did not venture beyond the borders of the chain link fence. In the past year, school initiatives including the construction of a school garden, a parent sponsored outdoor club, and the development of a path into the forest and marsh area surrounding the school have piqued my curiosity about the potential for learning beyond the classroom walls. In addition, the Parent Advisory Council and

staff have identified the potential benefits of nature-based learning and moving forward, have committed to including nature-based experiences as integral to our school growth plan.

In addition to the benefits of nature-based learning, the school continues to focus attention on the development of literacy skills including reading fluency and comprehension to enable learners to communicate effectively and think creatively and critically, however, the broad range of abilities, cultural backgrounds and experiences of the students I teach have made it increasingly difficult to engage all learners as a cohesive learning community. Many children in my classroom have difficulty with attention, sensory disorders, physical needs, language disorders, socio-emotional disorders or trauma. Rather than being restricted by my student's behavioural, cognitive and social-emotional differences, I am eager to create a classroom environment that is inclusive and engaging for all of my students.

The recent school initiative around nature-based learning and continued focus on literacy are in response to the growing needs of our school population and the redesigned BC curriculum. The redesigned BC curriculum supports student-centered learning and the development of educated citizens who are “competent thinkers and communicators, and who are personally and socially competent in all areas of their lives” (2015, p. 1). The educated citizen includes such qualities as the ability to think critically, creatively, and innovatively, use strong communication skills, strive for physical health and demonstrate respect and responsibility towards themselves, the local community and beyond. I am inspired by the abundant opportunities that nature-based learning provides for hands on, student-centered learning that nurtures the creation of a positive classroom community and the potential it has to support the redesigned BC curriculum aims.

Significance

Concerns for safety, increased use of technology and growing restrictions on the use of outdoor environments has lead to a decrease of childhood interactions with nature (Louv, 2008; O'Brien, 2009). Overdevelopment, fear of litigation and environmental regulations send messages to children that they are not welcome to interact freely in nature (Louv, 2008). Additionally, parental concerns for stranger danger and risk of injury puts pressure on adults to supervise children constantly when they are outdoors resulting in reduced opportunities for engaging in risk taking activities that are a natural part of a child's development (Louv, 2008; Stephenson, 2003). This reduction of time outdoors correlates with concerns of obesity and increased cases of depression in children (Louv, 2008). Studies of forest schools have identified a number of positive benefits to nature-based learning experiences including increased self esteem, improved social skills, concentration, motivation and physical motor skills and contributions to the development of language skills and communication (O'Brien, 2009). The trend toward less interaction with nature is cause for concern by researchers and educators (Kellert, 2002; Louv, 2008) and identifies a need to consider contexts with which children could be exposed to outdoor learning opportunities. Additionally, the increased understanding of nature's ability to improve physical and emotional health and potential to influence cognitive growth should influence how classrooms function (Louv, 2008).

Critical literacy skills allow students to question, consider inequalities and affect change through the evaluation, analysis, and synthesis of what they read and through their engagement in the world (Mulcahy, 2010). Critical literacy skills give voices to marginalized groups. Children in general are often marginalized, and within the group of children are further marginalized groups such as children with special needs or learning difficulties and children

from different cultural or socio-economic backgrounds. A learning environment that is culturally responsive supports a child's engagement in learning and has the potential to improve their success at school (Chambers & Radbourne, 2015). Changing views on childhood and how children are viewed draws attention to the individual rights of the child (Sorin, 2005). The United Nations *Convention on the Rights of the Child* (1989) identifies the right of children to have their own views and share them freely. They have a right to an education and that education "should develop each child's personality, talents and abilities to the fullest" (United Nations, 1989, art. 29). They also "have the right to relax and play and to join in a wide range of cultural, artistic and other recreational activities" (United Nations, 1989, art. 31). An understanding of children as independent and capable beings as well as an increased awareness of the need to support marginalized and struggling learners points to the importance of fostering critical literacy skills in children.

The focus on testing, accountability and learning outcomes has placed emphasis on the explicit teaching of basic functional literacy skills such as letter sounds, phonics instruction, grammar and spelling. While these are important skills, it is important they exist within a balanced approach that also recognizes that literacy learning takes place within social contexts that are relevant and meaningful and serve an authentic purpose that goes beyond merely learning basic skills (Duke, Purcell-Gates, Hall, & Tower, 2007; Hassett, 2008). Ensuring students have the ability to truly comprehend texts they are reading is often overlooked in favour of explicit teaching of basic literacy skills. Young learners need opportunities to play with language and engage in higher level thinking (Hasset, 2008), including creative and critical thinking, that are part of being educated citizens who make meaningful contributions to society (British Columbia Ministry of Education, 2015).

Theoretical Framework

This project has been influenced by Dewey's (1938) theory of experiential learning, critical literacy (Chambers & Radbourne, 2015; Freire & Macedo, 1987; Mulcahy, 2010) and reading engagement theory (Guthrie & Cox, 2001; Guthrie & Klauda, 2014; Guthrie, McRae, Coddington, Klauda, Wigfield, & Barbosa, 2009; Unrau, Ragusa, & Bowers, 2014; Wigfield, Gladstone & Turci, 2016).

Dewey (1938) believed that learning was a social process and education should take place in real-life experiences. Isolating children in schools away from real-life contexts fragments learning and reduces the relevance and value of their learning experiences. "Valuable knowledge for most children is knowledge that is directly related to their own social reality, knowledge that will allow them to engage in activities that are of service to and valued by those they love and respect" (Smith, 2002, as cited in Ormond, 2013, p. 24). According to Dewey (1938), the quality of the experience is determined by two factors: continuity and interaction. Continuity refers to experience as a moving force. "If an experience arouses curiosity, strengthens initiative and sets up future desires and purposes" (Dewey, 1938, p. 14) then the experience would be considered a strong force for its ability to influence future experiences. Interaction refers to the "transaction taking place between an individual and what, at the time, constitutes his environment" (Dewey, 1938, p. 17) Interaction between the learner and the environment, including other people and objects within the environment influence the learning that will take place. Both of these factors combined contribute to the value of an educative experience. Sociocultural theorist Lev Vygotsky (1978) suggests that all knowledge grows from a socio-historical context and that knowledge is derived from social customs, beliefs and practices of a community. According to Vygotsky (1978), a child's development is dependent on

two planes, the social plane, between people, and on the psychological plane, within oneself. Rogoff (1998, 2003) expands on Vygotsky's socio-cultural theory by adding a third plane, the sociocultural context that defines how people engage in creating and sharing knowledge (Edwards, 2006). A sociocultural context suggests that the environment and community that children are a part of plays a significant role in construction of knowledge and echo Dewey's ideas around continuity and interaction.

Prominent theorists in critical literacy, Freire and Macedo, suggest that literacy is more than just reading words; literacy includes "reading the world" (1987). With this in mind, literacy is socially situated and includes multiple ways of meaning making (Mulcahy, 2010). Critical literacy is more than another skill to be learned in literacy development, it is a lens through which learners engage in their learning (Ontario, 2009). It goes beyond the ability to decode and encode words, and recognizes that "all text is constructed for a purpose and that reading is not a passive act but an interaction between text and a reader who looks for meaning, asks questions and challenges assumptions" (Ontario, 2009, p. 1) Students must be active in their learning and the learning should begin with the knowledge and experiences the students bring with them to the classroom. Children engage and are invested in critical literacy through their social interactions in real-world situations. Nature-based learning provides a context for social interactions to occur, evoking curiosity and dialogue that support the development of critical literacy skill development.

Encouraging active and interactive engagement and promoting interest in reading is essential for children to successfully develop early literacy skills (Hassett, 2008). Reading engagement theory (Guthrie & Cox, 2001; Guthrie & Klauda, 2014; Guthrie et al., 2009; Wigfield et al., 2016; Unrau et al, 2014)) considers how to support successful and positive

engagement in reading and underscores the need for children to be intrinsically motivated to read texts in order for them to grow in comprehension skills. Guthrie & Cox (2001) identify seven factors that support reading engagement; learning and knowledge goals, real-world interactions, interesting texts, student autonomy, strategy instruction, collaboration and evaluation. These factors foster an internal sense of motivation for learners to engage because they create reading activities that are purposeful and authentic. Engaging in nature-based activities outdoors provides children with a relevant experience and motivation for engaging in literacy activities that can support the use of critical literacy skills and growth in reading comprehension.

Summary

My interest in nature-based learning as a context to support the development of reading comprehension has been influenced by a number of students, who, when taken outside to explore nature, blossomed and enthusiastically engaged in literacy activities that they would normally avoid. These outdoor experiences seemed to spark an interest and motivation to read and provoked me to consider how these experiences could support students in their reading development. Chapter one highlights how this topic has become meaningful to my practice and why this topic is relevant to the field of early childhood education. I have also provided an introduction to the theoretical frameworks that have framed my project.

In chapter two I will provide a more thorough description of the theories that will frame my project; I will describe nature-based learning; I will delve deeper into experiential learning, critical literacy and reading engagement theory and I will draw out common themes as a foundation for my project. Chapter three will include a description of my project, a framework for including nature-based learning as a valuable part of a literacy program presented in a two-

part professional development workshop. Chapter four will provide a summary of the project and my reflections on the influence this capstone project has had on my teaching practice.

Chapter Two: Literature Review

Recent interactions with my students in outdoor settings such as a local trail and in a marsh beside our schools grounds have highlighted the power the natural environment has to engage and motivate children in learning activities. The natural curiosity, questions and dialogue that were elicited through the interaction with nature provided a meaningful context and shared experience for the children to engage in learning together. The enthusiasm and attention I witnessed during these learning activities was unparalleled in the classroom and provoked me to consider how I could use nature-based learning to more effectively engage my students in reading instruction while meeting the schools goals and curricular demands around reading fluency and comprehension.

I will begin this chapter by defining and describing the benefits of nature-based learning. I will further investigate experiential learning (Dewey, 1938) as a framework for nature-based literacy learning and consider how Dewey's ideas around interaction and continuity contribute to the development of reading comprehension. I will explore critical literacy (Chambers & Radbourne, 2015; Freire & Macedo, 1987; Mulcahy, 2010), its role in primary education and its connection to reading comprehension and I will identify characteristics of classrooms that support the development of critical literacy. I will also consider research on reading engagement (Guthrie & Cox, 2001; Guthrie & Klauda, 2014; Guthrie, McRae, Coddington, Klauda, Wigfield, & Barbosa, 2009; Unrau, Ragusa, & Bowers, 2014; Wigfield, Gladstone & Turci, 2016) focusing on factors and processes that support intrinsically motivated and highly engaged readers because research clearly states that levels of engagement highly influence reading comprehension (Unrau et al., 2015).

Through the investigation of these theoretical frameworks I will identify common themes between experiential learning, critical literacy and reading engagement theory that support the development of reading comprehension. Rather than a supplemental or extra activity, it is my hope that educators will recognize the rich and authentic literacy learning that can transpire in natural settings so that they become a regular and integral context for reading instruction and growth in reading comprehension (Chambers & Radbourne, 2015; Duke et al., 2007; Eick, 2011; Purcell-Gates, Duke, & Martineau, 2007). The themes that emerged from my review that support growth in reading comprehension are relevance, real-world contexts, social interactions, student autonomy and interesting texts (Chambers & Radbourne, 2015; Dewey, 1938; Freire & Macedo, 1987; Guthrie & Cox, 2001; Guthrie & Klauda, 2014; Guthrie et al., 2009; Unrau et al., 2014; Wigfield et al., 2016).

Nature-based learning

Nature-based learning refers to learning that takes place through first hand experiences outdoors in a natural setting such as woodlands, parks, beaches or other local natural environments (Eick, 2012; O'Brien, 2009). This learning can result from both structured interactions that are teacher chosen and directed and focus on particular topics or learning goals, to unstructured interactions such as free play which playwales.org describes as intrinsically motivated, chosen, and directed by children with no underlying purpose or reward. The sensory stimulation encountered in nature is rich and authentic providing an active, tangible and intimate experience incomparable to an indirect or symbolic activity (Kellert, 2002). The intensity of experiences in nature provides a powerful context for the cognitive, physical and socio-emotional development of children (Kellert, 2002; Louv, 2008; O'Brien, 2009). In her study of forest schools in the UK, Liz O'Brien (2009) identifies the influence nature-based learning has

on the development of social skills, the development of language and communication skills, increased motivation and concentration, improved self esteem and its contribution to the growth of knowledge and understanding (O'Brien, 2009). While research that specifically studies the influences of nature-based learning on reading comprehension is sparse, there is ample research that identifies that benefits of real-life, authentic experiences have for reading comprehension (Duke et al, 2007; Guthrie & Cox, 2001; Purcell-Gates et al., 2007; Unrau et al., 2014). Real-life, authentic contexts for literacy learning are well described in the literature as supporting reading comprehension when they include certain characteristics such as relevance, student autonomy, social interactions and interesting texts (Eick, 2012; Guthrie & Cox, 2001; Wigfield, Gladstone, & Turci, 2016). When nature-based learning activities include these same characteristics they provide literacy experiences that Dewey (1938) would call a powerful force in developing reading comprehension skills.

Experiential Learning

In *Experience and Education*, John Dewey (1938) identified that not all learning experiences are equally valuable. In fact, he argued that the traditional model of education that centres on teacher directed textbook driven educational experiences are misguided and typically poor in quality. Educators then, have a responsibility to consider the quality of the educational experiences they provide to their students. They need to be able to recognize which kinds of environments are conducive to valuable learning experiences and be able to utilize both the physical and the social aspects to support worthwhile experiences. Two factors contribute to the value of an experience: continuity and interaction. Continuity refers to the influence the experience has on the person engaged, and the level of growth and direction the experience has on subsequent experiences. Not all experiences influence future learning in a positive way. In

fact learning can be negatively influenced if an experience causes a child to lose interest or willingness to engage in future activities. Dewey (1938) also acknowledges that experiences do not occur in a vacuum and external factors such as poverty or cultural background can influence an experience. If educators are not sensitive to these factors a well-intended experience may negatively impact a child. On the other hand, a well-situated experience that stimulates the senses, provokes curiosity and increases motivation (O'Brien, 2009), like many nature-based experiences, can be a powerful learning opportunity.

Interaction is the transaction that takes place between the learner and the environment. The environment includes people, materials, and physical space. According to the principle of interaction, materials and curriculum need to be adapted for the needs and capacities of individual students otherwise, Dewey (1938) explains, the interaction can negatively impact learning and future growth. Key to Dewey's ideas around interaction is the use of real-life experiences. In *Experience and Education* (1938), Dewey believed learning should be relevant and connected to every day life. Children should be able to make meaningful connections to prior knowledge and experiences and utilize relevant materials and topics related to their world. He also recognized the value that field experiences (nature-based experiences) offer educators in providing meaningful and relevant connections for students and he encouraged educators to take advantage of the varied opportunities of time and place in the outdoors. In studies of authentic literacy contexts (Duke et al, 2007; Purcell-Gates et al., 2007) real-life experiences that mirror reading and writing activities in the real-world are essential because they serve a meaningful, useful purpose that motivates learners. In nature-based settings this might include reading and writing field notes, reading or writing letters to or from environmental, business or community groups, or researching inquiries that have come from these nature-based experiences (Duke,

2007). A specific example of an authentic literacy context could be the use of letter reading and writing and research related to the local environmental concern of soil contamination at a dumpsite near my school. This example directly impacts the students, families and their local community and allows them to learn and practice literacy skills such as reading comprehension in a meaningful, real-life context.

As previously mentioned, the interactions taking place between people are also a part of a student's experience. This is critically important as part of Dewey's theory of experiential learning because learning is a social process. Dewey (1938) recognizes the social nature of children and argues that isolation is unnatural. He suggests educators need to provide freedoms for their students, providing opportunities for free play and allowing for individuality so that educators can get to know their students more intimately. "Enforced quiet and acquiescence prevent pupils from disclosing their real natures" (Dewey, 1938, p. 26). By giving students autonomy the nature of learning becomes more active (Mulcahy, 2010). As educators and students grow in relationship the educator can better understand how to use meaningful experiences to support each student as an individual and the group as a whole. When a child feels as though their contributions matter and when they understand the significance of what they are doing the quality of the experience increases (Dewey, 1938)). Educators then, have a responsibility to know their students, the social group dynamics and the subject matter so they can choose activities that will support positive social interactions that will allow all students to make meaningful contributions. In their study of authentic literacy, Duke et al. (2007), suggest that language is best learned in the concrete, real-life contexts that it would normally be used and not in abstract or contrived contexts. The learning should be for functional, communicative purposes. This learning is socially situated and involves an exchange. Nature-based learning

encourages social interactions that support the communicative and social nature of authentic literacy experiences.

Educators must also understand their role within the context of the social group. According to Dewey (1938), the teacher assumes the role of guide or leader, not boss. Children are especially sensitive to power roles and fairness and by assuming the role of guide, the teacher allows students to pursue interests, while still supporting the needs of their students (Dewey, 1938). In Vygotsky's *Mind and Society* (1978), the role of guide is critical because "children are capable of doing much more... under the guidance of adults" (p. 45). Vygotsky's (1978) zone of proximal development, which refers to the difference between actual development level and potential development under adult guidance or in collaboration with more capable peers, echoes Dewey's beliefs around the social nature of learning and also draws attention to the value of the process of learning rather than just the outcome. Continuity and interaction as defining features of the value of experiences are also reaffirmed in *Mind and Society* (Vygotsky, 1978) because interaction with the sociocultural environment and the intersections between past and present contribute to the development of higher-level functions in children. "The experiential nature of outdoor learning offers authenticity; opportunities for exploration and play; autonomy; freedom creativity; novelty; incidental learning; enjoyment; and competency in social contexts" (Waite, 2008, p. 335). Not only does the activity serve a relevant and useful function (Duke, 2007) but students feel a sense of safety and a willingness to take risks when students feel supported by peers and the educator (Guthrie and Cox, 2001; Unrau et al., 2015). The authenticity derived from nature-based experiences sets a meaningful purpose within a community context that allows students to engage in reading activities they otherwise may not.

Critical Literacy

Freire & Macedo (1987), like Dewey (1915, 1938) and Vygotsky (1978), recognized that literacy is a social practice. “For the notion of literacy to be meaningful it has to be situated within a theory of cultural production and viewed as an integral part of the way in which people produce, transform, and reproduce meaning.” (Freire & Macedo, 1987, p. 98). “The act of learning to read ... is a creative act that involves a critical comprehension of reality” (Freire & Macedo, 1987, p. 108) of both past and present experiences. Critical literacy requires that students go beyond functional literacy skills such as decoding text. They must be able to “read the world” (Freire & Macedo, 1987, p. 5), identify inequalities and injustices, think creatively, reflect, synthesize and analyze information, and effect social change (Mulcahy, 2010). Ontario’s Ministry of Education Capacity Building Series on Critical Literacy (2009) suggests,

“Students need both basic literacy and critical literacy to come to terms with the many forms and types of text that surround them, to ask questions, to examine viewpoints (their own and others), to take a stand and clarify the issues and relationships that are important to them and their future.” (p. 1)

With the fast paced, constantly changing world, and the assault of social media, students “need skills to determine where to direct their attention and to interpret messages and use them appropriately” (Ontario Ministry of Education, 2004, p. 9). Young children are capable of developing critical literacy skills when they are modeled and supported within the context of “situations and texts that arise in their immediate social classroom worlds” (Comber, 2013, p. 5). Hassett (2008) suggests that the key to becoming critically literate is the development of foundational comprehension skills such as making connections, visualizing, inferring, questioning, and synthesizing.

Personal experience and background knowledge, both integral in Dewey's (1938) description of continuity, play a significant role in becoming critically literate because they allow readers to make deeper more meaningful connections to the text. Additionally, generalities and broad themes in curriculum cannot be applied across a range of groups. Curriculum must be made specific and meaningful to the particular groups of learners so that it is responsive to their culture, background or history. In doing so, students are better able to identify social injustices or power imbalances enabling them to reflect and effect change. In this way critical literacy allows educators to better identify why students may be struggling with development in reading or why students may be unmotivated to engage in learning to read. It also calls on educators to ensure that learning is personally relevant to their students and that students are active participants (Mulcahy, 2010). When learning is connected to their own lives students are more likely to use a critically literate lens, ask questions and not be manipulated because their questions help them better understand the texts purpose and relate it to themselves and the perspectives of others (McLaughlin & Devoogd, 2004).

In a classroom that promotes critical literacy, the educator is not the holder of knowledge instead, like Dewey (1938) and Vygotsky (1980) suggest, learning is student-centered and the teacher is a facilitator of learning (Mulcahy, 2010). Teachers themselves must learn to become critically literate through continuous learning, research and change over time so they can model a critically literate approach. (Ontario, 2009)

A classroom that supports critical literacy skills is dialogic and democratic. Students have choice; the topics are mutually created and meet the cognitive and affective needs of all the learners (Mulcahy, 2010). Ontario's Ministry of Education (2009) provides three suggestions that can assist educators in establishing a critically literate classroom culture.

1. Honour the cultural capital and multi-literacies of all students by getting to know students, their interests, backgrounds and values, and consider their questions, interests and experiences when creating learning experiences.
2. Create a safe and inclusive classroom community that supports risk taking and inquiry by modeling and teaching respectful interactions by using strategies that encourage participation of all students and by allowing time for reflection.
3. Include interesting texts in a variety of modes and encourage students to consider alternative perspectives.

Critical literacies are supported in nature-based settings allowing children to develop foundational comprehension skills because they provoke children to engage in social interactions and promote dialogue in a safe environment that encourages risk-taking and inquiry. Repeated exposure to natural environments and engagement in learning activities in these spaces allow children to make meaningful connections, observe changes, ask questions, and engage in critical literacy skills (Chambers & Radbourne, 2015).

Reading Engagement Theory

Reading engagement highly influences success in reading comprehension (Unrau et al., 2015) highlighting the importance of providing experiences that will motivate and engage students in reading activities. Guthrie & Cox (2001), identify seven conditions that support reading engagement:

1. Learning and knowledge goals connected to a conceptual theme
2. Real-world interactions
3. Interesting texts
4. Student autonomy

5. Specific reading strategy instruction
6. Collaboration
7. Meaningful evaluation

These factors are found in Concept-Oriented Reading Instruction (CORI) (Guthrie & Cox, 2001), a model for educators to support higher levels of reading engagement and ultimately improved reading comprehension. CORI connects reading instruction with specific concepts often from science themes and includes hands on, sensory interactions such as observing the natural environment or conducting experiments. CORI has been widely studied with proven success in supporting the development of reading comprehension (Guthrie & Cox, 2001; Guthrie & Klauda, 2014; Guthrie et al., 2009; Unrau et al., 2015).

Learning and Knowledge Goals

Learning and knowledge goals that are related to a particular conceptual theme, foster motivation by giving a framework for learning that provides a natural context or purpose and allows for student autonomy when choosing subtopics and materials.

Real-World Interactions

Interactions such as participating in real events or studying real objects drive reading and writing instruction. Real-world interactions support intrinsic motivation and real objects or events spark curiosity. Students are alert, excited and engaged and it provides a motivating context for students to engage with texts.

Interesting Texts

Students use interesting texts related to real-world interactions to learn reading skills. Interesting texts are usually related to previous real-world interactions or the overall conceptual theme connected to learning and knowledge goals. Students choose the texts they engage with

and can read with them other students. There should be a large selection of texts at varying levels of difficulty and they should contain illustrations and useful information. Interesting texts are motivating because they allow students to be autonomous and engage successfully in reading activities.

Student Autonomy

Student autonomy is supported through student-centered literacy activities that are generated from student interest and inquiry. Motivation for reading is enhanced when students are empowered to engage in their own inquiries about their learning. “A personal investment in to a reading activity leads to deep-level thinking and text processing” (Taboada et al., 2009, p. 88).

Specific Reading Strategy Instruction

Strategy instruction provides students with a sense of self-perceived competence to utilize specific strategies for reading and learning. When students feel good about their ability to engage and understand texts then they are more motivated to engage in reading activities. Through modeling, scaffolding and coaching of specific strategies including instruction on how and when to use them, students can engage in personal inquiries independently further supporting their own autonomy in their learning.

Collaboration

Literacy learning is a social process that involves collaboration. Students work together and share their learning with each other. Research has shown that social discourse is intrinsically motivating (Brown, 1997 and Turner, 1995 as referenced in Guthrie & Cox, 2001). “Social motivation... leads to more reading, more effort, and greater levels of achievement in reading” (Wigfield, A. Gladstone, J.R. & Turci, L., 2016, p. 192).

Evaluation

Evaluation should be directly related to learning goals and allow students to demonstrate their learning through working together, in writing and through the range of books and resources they use. Evaluation is based on student progress and not a comparison to other students or particular standard. Students are more likely to be motivated to engage in reading tasks when they know they are being evaluated based on their own progress rather than disconnected questions and standard.

Themes

Four common themes can be identified in experiential learning, critical literacy, and reading engagement theory that through nature-based learning can support growth in reading comprehension. These themes are relevance and real-world contexts, social interaction, student autonomy and interesting texts and they are all important characteristics of authentic literacy activities that support the growth of reading comprehension (Duke, 2007).

Relevance and Real-World Contexts

In *School and Society* (1915), Dewey writes, ‘When we think that we all live on the earth, that we live in an atmosphere, that our lives point by the influences of the soil, flora and fauna, by consideration of light and heat, and then think of what the school study of geography has been, we have a typical idea of the gap existing between everyday experiences of the child and the isolated materials supplied in such large measure in the school’ (p. 74). Dewey (1915) recognizes the power real-world experiences have in connecting students to their learning in a meaningful way in contrast to what is typically experienced in schools. Real-world experiences provide students with an opportunity to engage in stimulating sensory activities. “Children need nature for the healthy development of their senses, and therefore, for learning and creativity. This

need is revealed in two ways: by the examination of what happens to the senses of the young when they lose connection with nature, and by witnessing the sensory magic that occurs when young people—even those beyond childhood—are exposed to even the smallest direct experience of a natural setting” (Louv, 2008, p. 55). The primary function of real-world interactions is to “evoke intrinsically motivating behaviors...” (Guthrie & Cox, 2001) Nature-based contexts are intrinsically motivating, support active participation, and establish meaningful and relevant experiences for students to connect to reading activities (Eick, 2012).

Nature-based settings support the use of skills such as making observations, predictions, and inferencing because they foster students’ natural curiosity and fuel the motivation needed to engage in reading comprehension skills (Eick, 2012). “We cannot overlook the importance for educational purposes of the close and intimate acquaintance got with nature at first hand, with the actual processes of their manipulation, and the knowledge of their social necessities and uses” (Dewey, 1915, p. 8). When children are given the opportunity to engage in real-life meaningful activities independently it underpins a foundation for trust and reciprocity that enable children to learn with nature (MacQuarrie, Nugent, & Warden, 2015).

Social Interaction

Social interactions take place within a community of learners as they engage together in learning experiences. Interactions within this community take place between students and between student and teacher. In her study of forest schools, Liz O’Brien (2009) observed that children demonstrated an improved awareness of their actions in relation to others and an increases ability to work together cooperatively and share tools and materials. The children had an increased understanding of the benefits of working together. In *Mind and Society* (1978), Vygotsky states, “an essential feature of learning is that it ... awakens a variety of internal

developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers” (p. 90). In studies of Concept-Oriented Reading Instruction (Guthrie & Cox, 2001) social interaction occurs as students work in teams. This social discourse is highly motivating because students “are capable of doing much more in collective activity” (Vygotsky, 1978). They can integrate knowledge and support each other in performing higher order thinking (Guthrie & Cox, 2001).

Nature-based settings offer teachers new perspectives of their students. Children often behave and interact differently in nature than they would in traditional classrooms (O’Brien, 2009). Nature settings allow teachers to identify different areas of strength or areas for growth, than might not be noticed in the classroom. This enriched understanding between student and teacher points to the importance of relationships and allows teachers to better support individual learners in more effective ways (Unrau et al., 2015). In their study of teachers’ perspectives on reading engagement, Unrau et al. (2015) reaffirmed the factors Guthrie & Cox (2001), identified in their research, but they also noted the relationship between student and teacher were a powerful theme for increasing reading engagement. Positive relationships build trust, create a sense of safety, and foster a positive self image (Unrau et al., 2015) that all contribute to a classroom culture that supports critical literacy skills (Ontario, 2009). “Relationship building between the teacher and student mediates important reading outcomes, including identity work, especially for struggling readers” (Unrau et al., 2015, p. 132).

Student Autonomy

When students have opportunities for choice or are given a voice in their learning, they are more motivated to engage in reading activities (Guthrie & Cox, 2001). Choice can be supported in the texts provided to students, the opportunity to select subtopics and in the

independent use of reading strategies. Taboada et al. (2009) refers to choice as perceived control. One implication of their study on motivational and cognitive variables on reading comprehension is the importance for educators to consider how practices that foster internal motivation can be incorporated. The researchers found that when students have perceived control and are able to ask their own questions, consider the personal relevance of the information, and seek their own answers, especially when connected to background knowledge, they are more internally motivated to engage in reading resulting in better reading comprehension outcomes. In nature-based settings, student autonomy can be supported through opportunities to observe and ask their own questions because student generated questions encompass a degree of autonomy that has been shown to support intrinsic motivation (Guthrie & Cox, 2001; Taboada et al., 2009). When students are internally motivated they are more likely to use strategies that support metacognition such as self generated questioning and connecting to background knowledge, which allows students to enhance comprehension (Taboada et al., 2009). Research by Sue Waite (2011), suggests that giving students choice can be a powerful force to improve the impact of outdoor environments and the transferability of learning outdoors into the classroom” (p. 71). Where children have a greater sense of involvement and ownership in their learning outdoors, there is a greater degree of engagement in the learning activities and use of the outdoor space (Waite, 2011).

Interesting Texts

Interesting texts are an important link between real-world experiences and reading comprehension skills. “Books...invite young readers to build on emerging layers of experiences with natural environments” (Wason-Ellam, 2010, p. 282) and connects them “both aesthetically and cognitively” (Wason-Ellam, 2010, p. 282) to places. When learners have access to texts that

are directly related to real-life experiences, reading becomes more meaningful (Guthrie & Cox, 2001). Whether a text communicates important information or informs the reader of procedures related to real-life interactions, students are motivated to comprehend their reading because it serves a particular useful function (Duke, 2007). There is an authentic communicative purpose that needs to be fulfilled. In Concept-Oriented Reading Instruction, real-world experiences provide a context for reading. It is important that learners have access to a variety of texts related to real-life experiences that are matched to the range of abilities (Guthrie & Cox, 2001). In nature-based settings texts can be used to support the inquiries of the students. For example, children engaging in a beach setting would have access to texts that provide information about environmental features, plant life, and animals found in this habitat. Children could also connect to their experience in the beach setting through fiction stories that include beaches. Because these texts are directly related to and support the interaction at the beach, they become more meaningful and engaging. Stories can also provoke new questions and maintain connections to places after they have been experienced (Wason-Ellam, 2010). When children can self-select books at their level from a variety of these relevant texts their sense of autonomy increases resulting in higher levels of engagement and ultimately in reading comprehension.

Summary

It is important for educators to recognize that literacy learning not only includes the explicit instruction of early literacy skills such as oral language, phonemic awareness and phonics, but also in the provision of contexts where these basic skills can be used (Hassett, 2008). These basic skills become tools that children can use in real-life interactions to engage in higher-level thinking (Hassett, 2008).

“Reading comprehension is seen as the interaction between the reader, the text, and the context of the reading. Sociocultural theories would add that the reader brings an identity and a set of background knowledge or skills to the text; the text has a particular set of characteristics, genre codes, and political power; and the context of the reading not only includes the purpose of a reading, the activities students are engaged in, or the teacher’s expectations for the students, but also the social and cultural plane of the classroom” (Hassett, 2008, p. 310).

In this context, reading comprehension and critical literacy are interconnected. Making connections, visualizing, questioning, inferring, and synthesizing are strategies that allow students to have deeper comprehension of texts and respond in a critically literate manner to affect the classroom and broader community. Nature-based learning experiences provide a context for children to engage in the social construction of knowledge (O’Brien, 2009) that provides a foundation for meaningful and relevant engagement with related texts. The balance between autonomy and guided support from the teacher and peers that occurs in nature settings, allows for students to work in their zone of proximal development where optimal learning can take place (Vygotsky, 1978) and is an authentic literacy context that provides students with intrinsic motivation to engage in reading activities (Duke et al., 2007; Guthrie & Cox, 2001) and increase success in reading comprehension.

Based on the review of literature and emerging themes that can support the growth of reading comprehension through nature-based settings, I will propose a framework for the inclusion of nature-based settings in regular literacy programs. I will identify implications and potential challenges for educators such as, teacher attitudes, limited access to nature and insufficient supporting texts and suggest possible solutions that maintain the authentic and

relevant experiences required to engage and support young learners. Chapter three will explore this framework through a professional development workshop that includes resources and samples.

Chapter Three: A Framework for the Inclusion of Nature-Based Settings to Support Reading Comprehension and Critical Literacy Development

Nature-based settings provide rich sensory experiences that can increase a child's motivation to engage in learning, improve concentration, and support the growth of social interactions and autonomy (O'Brien, 2009). The vast natural landscape and recent interactions outdoors with my students have highlighted these benefits and allowed me to observe my students from a much different perspective than the traditional classroom setting. The increased enthusiasm and willingness to engage in learning activities and the potential for outdoor spaces to benefit children with a wide range of social, emotional, behavioural and learning difficulties (O'Brien, 2009) inspired my review of literature around how nature-based settings can support the development of reading comprehension and early critical literacy skills.

Nature-based settings were found in research to provide opportunities for students to exercise autonomy and choice, engage in meaning making in social contexts, and initiate learning based on personal interest and concrete experiences. (Eick, 2011; O'Brien, 2009; Waite, 2011) These themes as well as the use of interesting texts were also found in research on reading engagement (Guthrie & Cox 2001; Guthrie & Klauda, 2014; Guthrie et al. 2009; Unrau et al., 2014; Wigfield et al., 2016), authentic literacy (Duke et al., 2007; Purcell-Gates et al., 2007) and critical literacy (Chambers & Radbourne, 2015; Freire & Macedo, 1987; Mulcahy, 2010) as supporting the development of reading comprehension and critical literacy skills. The redesigned BC curriculum (2015) reflects these themes promoting the importance of "high-quality and engaging learning opportunities...through a range of learning environments" (p. 2) and highlights flexibility, choice, individual interests and the continued importance of foundational literacy skills that include "the ability to understand, critically analyze, and create a variety of

forms of communication” (p.3). That nature-based settings foster the themes considered in research to be beneficial to the growth of reading comprehension and critical literacy skill development is a convincing argument for the inclusion of nature-based settings in literacy learning.

In this chapter I will consider nature-based learning and its ability to support the development of reading comprehension and critical literacy skills through the themes identified in my literature review. I will suggest implications for professionals and students and identify possible barriers for implementation. Through my project, a professional development workshop for teachers, I will suggest a framework that may help professionals overcome those barriers and help them to use the local natural environment as a valuable component of their literacy instruction. This workshop will include a rationale that supports the inclusion of nature-based experiences in literacy learning, provide sample resources and include a step by step framework highlighting the identified themes in the literature review that contribute to the growth of reading comprehension and critical literacy skills. The workshop will be presented in two parts with the first part providing a rationale and introduction to the framework. The second part will provide a hands-on experience of the proposed framework so teachers can begin planning for implementation in their own classrooms.

Implications and Considerations

In *Experience and Education*, Dewey (1915) suggests the fault of traditional education is to isolate children from life. “From the standpoint of the child, the great waste in school comes from his inability to utilize the experiences he gets outside the school in any complete and free way within the school itself; while on the other hand, he is unable to apply in daily life what he is learning at school” (p. 67). Real-world concrete experiences in nature can bridge the gap that

isolates school from real-life by providing meaningful and authentic contexts that can motivate students to engage in comprehension and early critical literacy strategies. Experiential learning demands that teachers take into account the local community and physical environment as valuable resources. An educator “should know how to utilize the surroundings, physical and social, that exist so as to extract from them all that they have to contribute to building up experiences that are worthwhile” (Dewey, 1938, p. 15). Gruenewald suggests “natural history is an interdisciplinary educational tradition that reminds educators of the need to create time and space for experiencing, exploring and discovering the diversity of living places and the diversity within them” (p.638). This can feel daunting to educators already burdened with a focus on curriculum standards (Waite, 2011), district and government assessments such as the Foundation Skills Assessments in BC, or the DART (District Assessment of Reading) in School District 79. The ever-present constraints of time may hinder educators from giving up direct instruction time and traditional practices in favor of spending more time in nature-based settings for literacy instruction; however, the redesigned BC curriculum documents (2015) encourage educators to be creative in their methods and use alternative environments to meet needs and interests of all their learners. Additionally, the BC Curriculum (2015) supports a holistic and integrated approach to learning where intellectual, social, emotional and personal competencies are embedded throughout the curriculum. These competencies can include broader social-emotional, communication and thinking goals but can also include specific skill sets such as reading fluently or recognizing the structure and elements of a variety of texts. The focus on competencies allows educators to have flexibility in how they engage students in learning and enables teachers to access the curriculum effectively.

Safety

Concerns over safety are a common barrier for educators when considering outdoor experiences, however research in support of nature-based settings actually suggest the exposure to risk elements are a positive and necessary component for healthy child development allowing “children to learn about risk and to take risks that challenge them but do not lead to harm” (O’Brien, 2009, p. 52). Risk elements also allow children to practice autonomy. As noted in the literature review, student autonomy increases motivation to engage in learning activities such as reading comprehension and critical literacy skills. While educators might feel uneasy about giving up some control over the learning to their students, research suggest that “getting children involved can be a powerful force to improve the impact of outdoor environments and the transferability of learning outdoors into the classroom” (Waite, 2011, p. 71). Deep learning is indicated when children are actively involved in how they explore and interact with the environment (Waite, 2011). Nature-based settings can also trigger positive emotional responses that contribute to improved learning and personal wellbeing (Waite, 2011). The proposed framework takes autonomy and choice into consideration allowing students multiple opportunities to direct their learning based on skills, talents and interests. Teachers can manipulate levels of choice to suit the needs of a variety of learners. Students who are easily overwhelmed may be given a limited number of choices, while others may have greater flexibility. Within the framework student choice and autonomy can also be found in selecting topics of interests in the environment, choosing where to explore within the setting, which complementary activities to engage in and in the selection of supporting interesting texts. Teachers must be prepared to take a guiding role. Allowing students to take the lead gives teachers more time to observe student interests, interactions and behaviors allowing for a more

“more personalized pedagogical approach” (Waite, 2011. P. 74) .The redesigned BC curriculum (2015) highlights this personalized approach to learning because it “focuses on enhancing student engagement in learning” (p. 2) through providing choice, building on specific needs goals and interests and by “encompassing place-based learning where learning experiences are adapted to the local environment” (p. 2).

Social Interactions

Social interactions are another important consideration for educators because they motivate children to engage in learning (Guthrie, 1996). Learning is a social process (Dewey, 1938) as the children and teacher construct meaning together (Guthrie & Klauda, 2014) by sharing their background knowledge, experiences and skills (Hassett, 2008). Nature-based settings provide opportunities for a variety of social interactions. While exploring outdoor environments children often work together to become more aware of personal space and how others are moving in relation to them. Children identify others who have shared interests, for example some kids might gravitate to a pond while others are keen to explore a deer trail or an old stump housing birds nests and other creatures. Dewey (1938) suggests that children are naturally sociable. Learning takes place in group contexts where each child has choice and autonomy but within that context are social interactions taking place that allow children to engage in learning and make meaning together. “Participation in a variety of social patterns of communication broadens literacy engagement” (Guthrie, 1996, p. 434). The collaborations between the teacher and between students “empowers students to acquire literacy practices and accompanying cognitive proficiencies” (Guthrie & Klauda, 2014, p. 389). The development of critical literacy skills can also be emphasized in this social process because as children both

personally and collectively connect with the local environment it helps to foster a foundation for “interest, caring and potential social action to protect and preserve nature” (Eick, 2010, p. 799).

Access To Nature

The availability of nature-based settings can be very challenging for urban schools and schools located in residential neighborhoods with little green space making the inclusion of nature-based experiences more difficult. One potential way to overcome this challenge is to develop partnerships with community groups that can provide on ongoing relationships and access to settings such as the Sierra Club of BC (sierraclub.bc.ca), Cowichan Valley Naturalists or the Cowichan Valley Docents (volunteercowichan.bc.ca). Funding such as GoGrants from the Habitat Conservation Trust Foundation (hctf.ca) in British Columbia can alleviate the cost of travelling to nature-based settings.

Adult Attitudes

Waite (2011) noted that adult attitudes around outdoor environments could hinder some educators from including outdoor experiences for their students. Adults may have limited experience with nature or their teacher training may have placed emphasis on student performance and a standards agenda devaluing experiential learning opportunities (Waite, 2011). Ultimately however, “the determining factor for children’s access to the outdoors appeared to be the adults’ will to make it happen” (Waite, 2011, p. 77). Where teachers focus on the barriers to outdoor experiences, the barriers prevail, but these barriers are overcome by imagination, hard work and planning (Waite, 2011). This project assists educators in overcoming their own personal barriers, by providing within the framework an opportunity for the teacher to become familiar with the environment, plan for safety, consider curriculum goals, and gather resources.

The detailed preparation phase of the workshop is intended to help teachers overcome most barriers they will face.

Interesting Texts

According to Guthrie & Cox (2001), “an abundance of interesting texts should be available” (p. 291) to students. The provision of a wide selection of texts allows students to access reading materials that “are relevant to their personal inquiries” (Guthrie & Cox, 2001, p. 291). Real-world experiences such as those in nature-based settings allow students opportunities to develop prior knowledge and ask questions that would prepare them to engage with texts in the classroom however, the availability of relevant texts that can accommodate the range of learners in a classroom can pose a problem for many educators. Teachers need to be resourceful in collecting texts for the classroom. School and classroom libraries are often not sufficient to supply the needs for a classroom. The public library can often fill the void of books. Requesting used book donations and scouring used bookstores and garage sales can sometimes yield good finds as well. A broad selection of books related to the nature-based setting a teacher plans to use, includes fiction, non-fiction, poetry and picture books. Fiction books and picture books are equally beneficial to non-fiction. Engagement in interesting texts “invite(s) young readers to build on emerging layers of experiences with natural environments” (Wason-Ellam, 2010, p. 282). The BC Language Arts Curriculum (2015) also encourages the use of a wide range of texts that are accessible yet challenging so that children can become proficient users and creators of texts in many contexts. Digital sources are another potential resource for texts for the classroom. Online stories and electronic downloads can also be a valuable resource and are easily accessible. Most difficult to find are texts appropriately leveled for emerging and new readers. Where time permits teachers can create simple, patterned stories using an iPad to take pictures

from the local environment. The photographs can be placed in a document, slide show app or book creator app with text added to suit the needs of individual students. While this does take time, these digitally made books can be highly engaging and allow for personalization when considering needs of individual students. These homemade stories may also inspire students to make their own stories and provide a valuable opportunity to engage in purposeful literacy activities that meet needs of others in the learning community.

Through my professional development workshop I aim to alleviate barriers teachers have by familiarizing them with the process in a hands on way and by reviewing the research that confirms nature-based settings can actually improve students performance in reading comprehension and critical literacy skills.

Professional Development Workshop: Supporting Reading Comprehension and Critical Literacy Skills in Nature-Based Settings-A Framework for Teachers

This project was inspired by experiences with my students in nature-based settings around our school. The enthusiasm for learning I encountered in my students drove me to consider how nature-based setting could specifically support the development of reading comprehension and critical literacy skills. After reviewing the literature, I identified four key themes that are factors in supporting reading comprehension and the development of early critical literacy skills that the literature (Eick, 2011; O'Brien, 2009; Waite, 2011) also identifies as features of nature-based learning; relevance and real-world contexts, social interactions, student autonomy and interesting texts. I then developed a framework with these four themes interwoven throughout that can guide educators as they include nature-based settings in their literacy instruction. The goal of this project is to support educators in using nature-based settings

as motivating and engaging experiences that will support student growth in reading comprehension and critical thinking.

Outline of Professional Development Workshop

I have included a PowerPoint presentation to accompany the workshop in Appendix A. The workshop will be structured into two parts. The first part will begin with an introduction to how nature-based settings support reading comprehension and critical literacy skills and give an overview of the framework. Part two of the workshop will apply the framework introduced in part one, by initiating educators in their local nature-based setting. By experiencing the proposed framework educators will have the opportunity to experience the process and begin planning the inclusion of nature-based settings to support reading comprehension and critical literacy in their practice.

Part One.

Introduction and Rationale. The workshop will begin with an introduction to the topic by having participants reflect on their own experiences outdoors both personally and as educators. Participants will be asked to consider the following questions:

- How often do you take your students into nature-based settings?
- If you use nature-based settings are the interactions taking place directed by you or the children?
- Do children have opportunities to pursue individual inquiries related to their outdoor experiences?
- How are outdoor experiences transferred into the classroom?

These questions are intended to have participants consider their level of comfort in taking their students into nature-based settings, increase their awareness for the potential learning

opportunities and identify areas for potential personal growth. Participants will be introduced to research that identifies the value of experiential learning and factors that increase reading engagement and supports reading comprehension and critical literacy skill development. The four common themes; relevance and real-world contexts, social interactions, student autonomy and interesting texts that connect nature-based learning to growth in reading comprehension and critical literacy skills will be highlighted. Then I will introduce the framework that will support teachers in including nature-based settings as part of their literacy instruction.

Framework for Using Nature-Based Settings to Support Reading Comprehension and Critical Literacy. The framework is formatted into two phases. The first phase focuses on considerations for planning and preparation for the educator. The second phase focuses on considerations for the experience phase. This framework is not prescriptive or formulaic, but rather provides a general guideline for planning and implementing nature-based settings into literacy instruction that considers research based factors to support reading comprehension and critical literacy development. It also addresses potential concerns for teachers through the planning and preparation process and hopefully gives teachers a sense of confidence in using nature-based settings.

Planning.

1. Get to know your setting. Visit it ahead of time, more than once if needed. Identify potential topics of interests (plant or animal life, land features, environmental and seasonal changes, etc.). Consider natural boundaries and potential safety concerns. By being familiar with the setting it allows educators to feel more comfortable allowing children the freedom and autonomy to explore on their own.

2. Gather and prepare resources. Collect items that may complement the outdoor experiences within the classroom, such as a sensory table or science-exploring table. Consider starting a bulletin board that students could use to share questions, evidence of learning, photographs etc. A class set of clipboards is useful for children to take outside to write or draw their thinking. I have also cut thick cardboard into clipboards with butterfly paper clips to hold paper in place as a cost effective alternative to real clipboards.
3. Create supporting in class activities that will transfer the use of skills from outside to inside and help students to connect their experiences to texts. These activities will support the development of comprehension and critical literacy skills. Please see figure 4 for examples of supporting comprehension and critical literacy strategies.
4. Create a classroom library of interesting texts that allow students a broad range of choice to suit needs and interests. These texts would be related to the setting the students would be experiencing. Please see figure 5 for a sample book list for a forest setting.
5. Consider prompts, phrases and questions that could support or guide learning outside. This allows teachers to be prepared to challenge their students at their zone of proximal development (Vygotsky, 1978) and scaffold their experiences to deepen learning.

Experience.

1. Have a discussion with the students to establish safety guidelines and expectations together before going outside.
2. The initial visit. In the first visit allow children time to familiarize themselves and develop a sense of comfort with the environment and the expectations for participation. This is where children become engaged in real-world experiences, develop a context and

build experience to make their learning relevant and meaningful, and interact in a variety of ways to collaborate and share in their learning with others.

3. Subsequent visits and connection with indoor activities. Supporting activities and interesting texts can be brought outdoors depending on teacher's comfort and weather. During these visits the prompts and guided support are important to engage children in higher-level thinking and use comprehension and critical literacy strategies. During the subsequent visits and supporting activities, children become more aware of common interests and engage in social interactions to support their learning and have opportunities to interact with texts. In class activities extend student inquiries and provide opportunities to deepen learning.

Part Two. In order for this topic to be made most useful and meaningful to other educators I felt it was important to actually engage teachers in using the framework. Teachers are often intimidated or overwhelmed by the prospect of spending more time outdoors with students, nervous that the extra time outside of the classroom would take away from direct instruction time. As a result children would be behind and not learn the skills needed. It is my hope that the information in part one will alleviate this anxiety and the hands-on structure of part two will allow teachers to immediately begin exploring the use of nature-based settings as part of their practice. With this in mind the workshop is best presented at schools and part two would include time spent in a nearby or onsite natural setting.

Part Two begins with the planning phase. It is important for educators to know the setting ahead of time so workshop participants will go outside and explore the natural setting together. Because this is a planning process participants will bring a notepad and writing utensil or an iPad to make notes and observations as they plan. The following considerations will be pointed out:

boundaries, safety, and possible topics of interest. The next step would be to gather resources and support materials. During the workshop participants will brainstorm the resources and materials they could use to support their local environment. Examples such as bulletin boards, nature/explore tables, or sensory bins would be shared with the participants. Please see figure 1 for a bulletin board sample and figures 2 and 3 for nature/explore table samples.



Figure 1. Bulletin Board



Figure 2. Nature/Explore Table



Figure 3. Explore Table

Teachers would also prepare reading comprehension and critical literacy activities for in class time. Sample activities and blackline masters will be provided. Please see figure 4 for examples of reading comprehension and critical literacy strategies.

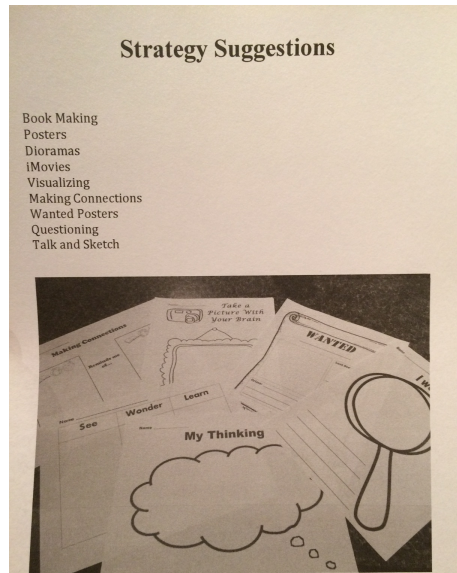


Figure 4. Reading Comprehension and Critical Literacy Strategies.

An important element in developing reading comprehension and critical literacy skills is the inclusion of interesting texts for students to engage in (Guthrie and Cox, 2001). The next step is to set up the classroom library with books at various levels that will accommodate all levels of learners in the classroom. For the purpose of this workshop, participants will be given a suggested book list for topics related to their local environment. Please see figure 5 for a sample book list.

Sample Book List for a Forest Setting

Forest Food Chains by Bobbie Kalman
 Forest By Laura Godwin
 Forest By David Burnie
 Forest Animals by Francine Galko
 Salmon Forest by David Suzuki
 In the Forest by May Elizabeth Salzmann
 What is a Forest? By Bobbie Kalman

Life in the Forest By Hailey Mitchell Haugen
 Forest Animals Guided Science Readers By Scholastic
 Over in the Forest By Marianne Berkes
 Baby Bear Climbs a Tree By Beverly Randall (PM Reader)
 Hedgehog is Hungry By Beverly Randall (PM Reader)
 Mushrooms For Dinner By Beverly Randall (PM Reader)
 Trees, Leaves and Bark By Diane Burns
 The Gruffalo By Julia Donaldson
 Versions of Little Red Riding Hood or Hansel and Gretel
 Frog and Toad Series by Arnold Lobel
 Where the Wild Things Are by Maurice Sendak
 The Busy Tree By Jennifer Ward
 A Log's Life By Wendy Pfeffer
 Looking Closely Through the Forest By Frank Serafini
 Our Tree Named Steve By Alan Zweibel
 Owl Moon by JaneYolen
 Owl Babies By Martin Waddell
 Time to Sleep by Denise Fleming

Figure 5. Sample Book List.

During the planning phase it is also possible to create some interesting texts for early readers using an iPad. Pictures taken of the environment during the planning phase can be used to create pattern stories for children to read on the iPad or to print off and include in the classroom library. Please see figures 6 and 7 for sample stories created using an iPad app.



Figure 6. Sample Story on iPad.

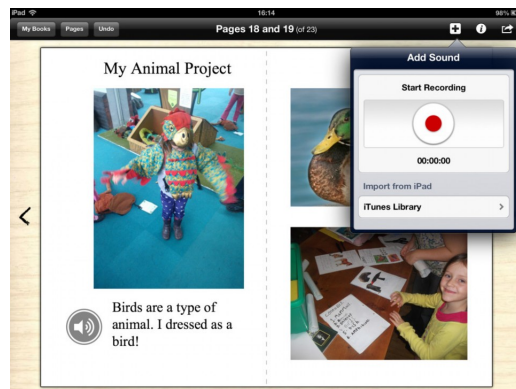


Figure 7. Sample Story on iPad.

Participants will be asked to consider prompts, phrases and questions to use when interacting with students that would support critical thinking. See figure 8 for suggested prompts.

Prompts, Questions and Phrases to Support Critical Thinking
<ol style="list-style-type: none"> 1. Questions that ask “Why?” they have thought or said something while exploring. 2. Questions that have students consider how they might solve a problem. 3. Phrases such as “Did you notice?” “Does that remind you of anything?” 4. Prompt students to think about previous experiences, “Has anything changed?” “What happened when...?” 5. Phrases that have students consider the thinking of others. 6. Prompts that have students defend their thinking.

Figure 8. Suggested Prompts, Phrases and Questions to support Critical Thinking.

It is also useful for participants to anticipate what children might be drawn to and what their questions may be to help teachers feel more prepared. Participants will also consider how they can encourage the children to engage with each other and the importance of repeated visits, daily or weekly will be considered. Some activities, resources and materials can be used outdoors, and some can connect their outdoor experiences indoors. Discuss how materials and technology can be used in both settings to support growth in comprehension and critical literacy skills. During this phase educators should be aware of changing interests and inquiries of students. In this way, educators can gather more resources or texts to support the child’s interests.

Walking participants through the framework allows them to see the real-world context in action and the four themes come together. Students have the autonomy to explore and engage in the natural setting under guidelines established for safety. Natural groupings and social interactions transpire based on personal and common interest. Students practice comprehension and early critical literacy skills through connections they make to past experiences (affirming the importance of repeated visits), in student generated questions and inferences as they explore and interact. Technology such as iPads and cameras, interesting texts and other supplemental resources and activities allow students to extend the meaning making back into the classroom and further support the development of reading comprehension and early critical literacy skills.

Summary

The framework and two-part workshop highlights the benefits of learning in nature-based settings and identifies factors that support the growth of reading comprehension and critical literacy skills in these settings. The purpose of the workshop is to help teachers overcome barriers that may hinder them from engaging in nature-based settings with their students and support teachers in a practical way to plan and implement the use of nature-based settings into their literacy programs. The workshop includes important planning considerations, suggested activities and resources and engages teachers in an experiential approach to grow in comfort and confidence to utilize nature-based settings effectively.

Chapter Four: Reflection

This capstone project began as an inquiry into how nature-based settings could support growth in reading comprehension. Several factors played a role in inspiring this inquiry. Personal observations of my students interacting with nature were particularly powerful because I witnessed higher levels of engagement in discussions, deeper thinking and questioning and a natural transfer of learning and motivation within the classroom setting following these outings. When considering these observations in light of the renewed BC Curriculum (2015) and its emphasis on the educated citizen, critical thinking, personalized learning and attention to place I wondered how local nature-based settings around my school could support our schools growth plan which focuses on the development of reading fluency and comprehension.

This capstone project is situated within a broad range of research around nature-based learning and is significant because of growing concerns around the lack of time children spend in nature and the impact this trend has on a child's physical, intellectual and social-emotional development (Kellert, 2002; Louv, 2008). Research on nature-based settings identifies a number of benefits for children including improved concentration, motivation, and self esteem; the development of social, language and communication skills; and the growth of knowledge and understanding (O'Brien, 200).

My review of literature focused on experiential learning (Dewey, 1938), critical literacy (Chambers & Radbourne, 2015; Freire & Macedo, 1987; Mulcahy, 2010), and reading engagement theory (Guthrie & Cox, 2001; Guthrie & Klauda, 2014; Guthrie, McRae, Coddington, Klauda, Wigfield, & Barbosa, 2009; Unrau, Ragusa, & Bowers, 2014; Wigfield, Gladstone & Turci, 2016).

Experiential learning (Dewey, 1938) considers the value of educational experiences and the importance that learning be relevant and meaningful to the everyday lives of children. Dewey (1938) also identifies the social aspect of learning and suggests students need autonomy to engage more actively, to make personal connections, and to feel like they can make a meaningful contribution to their social group. This puts the teacher in the role of guide rather than director and allows learning experiences to be more authentic and individualized for students.

Critical literacy (Chambers & Radbourne, 2015; Freire & Macedo, 1987; Mulcahy, 2010) also emphasizes the social aspect of literacy suggesting that reading requires more than simply decoding words, rather, it involves the ability to consider personal experiences and background knowledge to identify injustices and inequalities, think creatively and use higher level thinking to question and effect social change. In the world of young learners, becoming critically literate involves the development of foundational comprehension skills such as making connections, visualizing, inferring, questioning and synthesizing all within a social context and the autonomy to connect to their learning personally.

The level of engagement in reading is significant for the success of reading comprehension (Unraru et al., 2015) and the review of literature on reading engagement theory suggests seven conditions that support higher levels of engagement in reading. The conditions are found in Concept-Oriented Reading Instruction (CORI) (Guthrie & Cox, 2001) and include: learning and knowledge goals connected to a conceptual theme, real-word interactions, interesting texts related to the theme, student autonomy, specifically taught reading strategies, student collaboration and meaningful evaluation. Common themes to support growth in reading comprehension were identified in experiential learning, critical literacy and reading engagement theory. Relevance and real-world contexts, social interactions, student autonomy and interesting

texts were all important aspects of authentic literacy practices and contribute to the growth of reading comprehension. The real-world context of nature-based settings provides opportunities for students to engage in learning in social contexts and to have the autonomy to investigate personal inquiries that foster meaningful engagement with related interesting texts.

The importance of relevant, real-world contexts for learning places the responsibility on teachers to provide access to these meaningful experiences. This responsibility can be overwhelming to educators as they navigate curriculum demands and district and government testing for accountability, however, the redesigned BC curriculum (2015) places emphasis on place-based real-world experiences giving educators the flexibility to engage children in different learning environments. Other considerations that can be barriers for educators include concerns over student safety, the need for social interactions, lack of access to nature, attitudes of adults and lack of related interesting texts. These concerns are addressed in the professional development workshop and the proposed framework for including nature-based settings in literacy learning.

Supporting Educators

The creation of a professional development workshop supporting the use of nature based settings as a context for the development of reading comprehension and critical literacy skills evolved naturally from a desire to better understand how I could make regular use of these settings in my own classroom. In considering the research, I identified four key points: real-world contexts, student autonomy, social interactions and related interesting texts and created a framework to engage in nature-based settings that included these aspects. The barriers identified are found in research and were evidenced in my own practice as hindering me from engaging more regularly in nature-based settings. The biggest hurdle I faced personally was my own

attitude toward nature-based settings. While I often desired to spend more time in nature I felt constrained by meeting curricular standards, lacked resources to support these interactions, and did not have the experiences in nature as an educator to feel confident in using them as a learning context. In acknowledging these barriers in my own practice I was able to consider more deeply how I could develop and use a framework to help me overcome these barriers. The introduction of the redesigned BC curriculum (2015) was also helpful to me to be able to step back and reconsider how I was delivering reading instruction and encouraged me to consider how I might better engage my students in reading comprehension and critical literacy skills in different ways. It is my hope that the professional development workshop can be helpful to other educators, who like myself, are interested in utilizing nature-based settings but feel pressured by curriculum demands or are concerned about safety, resources, or personal ability. The workshop is presented in two parts. The first part includes a PowerPoint presentation of the theoretical frameworks around nature-based learning and the development of reading comprehension and critical literacy skills. It also introduces the framework for including these settings as part of literacy instruction. Integral to this framework is the planning stage that allows teachers to ensure they have considered and provided opportunities for a range of social interactions, included choice in how students participate in the environment and engage in personal inquiry, and have provided an ample resource library of interesting texts to support reading engagement. Part two is an interactive component that allows teachers to be guided through the framework and support them as they begin planning for implementation in their own classrooms. This hands-on approach is intended to allow teachers to experience their local setting and develop in confidence in nature-based experiences.

Future Considerations

As I reflect on this capstone project, I wonder how the inclusion of nature-based settings can go beyond an individual teacher and classroom to include an entire school community. My school has recently included nature-based learning in the school's growth plan to reflect the goals of the redesigned BC Curriculum (2015). While some teachers have been more purposeful in using the local environment not all staff members have taken the initiative. Additionally, there has been no discussion about how the environment may be impacted by the use of all fifteen classrooms nor have we had conversation in how we can share and care for the local natural environment collectively. These are important conversations to have in order to have a common vision to care for and preserve the environment for sustainability and future learning.

Areas for Further Research

There is ample research that examines the general benefits of nature-based settings on the physical, intellectual and social-emotional development of children. Research on authentic literacy practices and reading engagement theory can be applied to nature-based settings but there is little research that specifically considers the impact nature-based settings have on reading comprehension and critical literacy skills. It would be interesting to see research that looks at what kinds of interactions in nature support reading comprehension, and how the role of the educator influences the value of the experience on learning. In particular, I would consider the question, "In what ways can educators support meaningful interactions in nature that positively influence the growth of reading comprehension skills?" This question might consider different kinds of social groupings, the role of the educator, questioning techniques or scaffolding practices. Additionally research could also consider how the experiences in nature can transfer

into classroom settings in a meaningful and authentic way that specifically supports reading comprehension and critical literacy skill development.

Summary

It is evident in research that nature-based settings can have a positive influence on the development of reading comprehension and critical literacy skills when certain factors are present. The opportunity to engage in local, natural settings in an ongoing way allows children to develop meaningful connections to the environment. Student autonomy in the form of choice in how a child engages with the environment and in how they extend their learning through activities and strategies gives children ownership and purpose that is intrinsically motivating. The opportunity in nature to interact with peers and the teacher in a variety of meaningful ways is also highly motivating and creates a community where all everyone can learn from each other. The provision of interesting texts that are related to these nature-based experiences provide an important link to develop reading comprehension and critical literacy skills. When students can self-select books based on personal interests and experiences in nature they are more likely to be engaged in reading. The related texts provide a source of information for their personal inquiries or are deeply connected to personal experiences that make them meaningful and purposeful to read.

Including nature-based settings in an ongoing basis as part of regular literacy practice can be a powerful force for developing reading comprehension and critical literacy skills. It is my hope that more educators will take advantage of the wonderful benefits nature-based settings offer students by engaging more regularly in their local natural environment.

References

- British Columbia Ministry of Education. (2015). Introduction to British Columbia's Redesigned Curriculum. Retrieved from:
https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/curriculum_intro.pdf
- British Columbia English Language Arts Curriculum (2015). Retrieved from:
<https://curriculum.gov.bc.ca/curriculum>
- Chambers, J.M. & Radbourne, C.L. (2015). Developing critical literacy skills through using the environment as text. *Language and Literacy*, 17(1), 1-20.
- Comber, B. (2013). Critical literacy in the early years: Emergence and sustenance in an age of accountability. In Larson, J. & Marsh, J. (Eds.), *The Sage Handbook of Early Childhood Literacy* (pp. 587-602). London, SAGE Publications Ltd.
- Dewey, J. (1915). *School and society*. Chicago, Ill: The University of Chicago Press.
- Dewey, J. (1938). *Experience and Education*. USA: Kappa Delta Pi Publications.
- Duke, N.K., Purcell-Gates, V., Hall, L.A., Tower, C. (2007). Authentic literacy activities for developing comprehension and writing. *The Reading Teacher*, 60(4), 344-355.
- Eick, C.J. (2011). Use of outdoor classroom and nature-study to support science and literacy learning: A narrative case study of a third grade classroom. *Journal of Science Teacher Education*, 23, 789-803.
- Freire, P. & Macedo, D. (1987). *Reading the Word and the World*. London: Routledge.
- Guthrie, J.T. (1996). Educational contexts for engagement in literacy. *The Reading Teacher*, 49(6), 432-445.

- Guthrie, J.T. & Lutz Klauda, S. (2014). Effects of classroom practices on reading comprehension, engagement and motivations for adolescents. *Reading Research Quarterly*, 49(40), 387-416.
- Guthrie, J.T. & Cox, K. E. (2001). Classroom conditions for motivation and engagement in reading. *Educational Psychology Review*, 13(3), 283-302.
- Guthrie, J.T., McRae, A., Coddington, C.S., Lutz Klauda, S., Wigfield, A. & Barbosa, P. (2009). Impacts of comprehensive reading instruction on diverse outcomes of low-and high-achieving readers. *Journal of Learning Disabilities*, 42(3), 195-214.
- Hassett, D.D. (2008). Teacher flexibility and judgment: A multidynamic literacy theory. *Journal of Early Childhood Literacy*, 8(3), 295-327.
- Kellert, S.R. (2002). Experiencing nature: Affective, cognitive, and evaluative development in children. In P. H. Kahn, Jr. & S.R. Kellert (Eds.), *Children and Nature: Psychological, Sociocultural and Evolutionary Investigations* (pp. 117-151). Cambridge, Mass: The MIT Press.
- Kellert, S.R., & Wilson, E.O. (1993). *The Biophilia Hypothesis*. Washington, D.C.: Shearwater Books.
- Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder*. New York, NY: Algonquin Books of Chapel Hill.
- McLaughlin, M. & DeVogd, G. (2004). Critical literacy as comprehension: Expanding reader response. *Journal of Adolescent and Adult Literacy*, 48(1), 52-62.
- MacQuarrie, S., Nugent, C. & Warden, C. (2015). Learning with nature and learning from others: Nature as setting and resource for early childhood education. *Journal of*

- Adventure Education and Outdoor Learning*, 15(1), 1-23. DOI:
10.1080/14729679.2013.841095
- Mulcahy, C.M. (2010). *Marginalized Literacies: Critical Literacy in the Language Arts Classroom*. Charlotte, NC: Information Age Publishing, Inc.
- O'Brien, L. (2009). Learning outdoors: The forest school approach. *Education 3-13*, 37(1), 45-60.
- Ontario Ministry of Education (2009). Capacity Building Series: Critical Literacy. Retrieved from:
http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/Critical_Literacy.pdf
- Ormond, C.G.A. (2013). Place-based education in practice. In D. Zandvliet (Ed.), *The Ecology of School* (pp. 19-28). Rotterdam, The Netherlands: Sense Publishers.
- Purcell-Gates, V., Duke, N.K., & Martineau, J.A. (2007). Learning to read and write genre-specific text: Roles of authentic experience and explicit teaching. *Reading Research Quarterly*, 42(1), 8-45.
- Rogoff, B. (1998). Cognition as a collaborative process. In W. Damon (Ed.) *Handbook of Child Psychology, Vol. Two: Cognition Perception, and Language* (5th Ed.). (pp. 679-744). New York, NY: John Wiley and Sons.
- Rogoff, B. (2003). *The Cultural Nature of Development*. Oxford: Oxford University Press.
- Sobel, D. (2004). *Place-Based Education: Connection, Classrooms & Communities*. Great Barrington, MA: The Orion Society.
- Sorin, R. (2005). Changing images of childhood-Reconceptualising early childhood practice. *International Journal of Transitions in Childhood*, 1, 12-21.

- Stephenson, A. (2003). Physical risk-taking: Dangerous or endangered? *Early Years*, 23(1), 35-43. DOI: 10.1080/0957514032000045573
- Taboada, A., Tonks, S.M., Wigfield, A., Guthrie, J.T. (2008). Effects of motivational and cognitive variables on reading comprehension. *Reading and Writing*, 22, 85-106.
- United Nations. (1989). Convention on the Rights of the Child. Retrieved on June 20, 2016 from http://www.unicef.org/crc/files/Rights_overview.pdf
- Unrau, N., Ragusa, G. & Bowers, E. (2014). Teachers focus on motivation for reading: “It’s all about knowing the relationship”. *Reading Psychology*, 36(2), 105-144.
- Vygotsky, L. (1978). *Mind and Society*. Cambridge, Ma: Harvard University Press
- Waite, S. (2008). ‘Memories are made of this’: Some reflections on outdoor learning and recall. *Education 3-13*, 35(4), 333-347. DOI: 10.1080/03004270701602459
- Waite, S. (2011) Teaching and learning outside the classroom: personal values, alternative pedagogies and standards, *Education 3-13*, 39(11), 65-82. DOI: 10.1080/03004270903206141
- Wason-Ellam, L. (2010). Children’s literature as a springboard to place-based embodied learning. *Environmental Education Research*, 16(3-4), 279-294. DOI: 10.1080/13504620903549771
- Wigfield, A., Gladstone, J.R., & Turci, L. (2016). Beyond cognition: Reading motivation and reading comprehension. *Child Development Perspectives*, 10(3), 190-195.

Appendix A

Workshop Presentation:

Reading Comprehension and Critical Literacy Skills in Nature-based Settings



Reading Comprehension and Critical Literacy Skills in Nature-Based Settings

Christina Giesbrecht

Title Page

Welcome and introductions



Think about your experiences with students in nature-based settings...

- Frequency?
- Student or teacher directed?
- Classroom connections?

Engage the participants in discussion either in small groups or all together depending on the size of the group.

The following statement guides the discussion:

Think about your experiences with nature-based settings.

Additional prompts as the participants share:

How do you feel about spending time in nature?

How often do you take your students into nature-based settings?

In what way do you use nature-based settings with your students?

Who directs the learning when you take your students outside?

Do the students have opportunities to pursue individual inquiries related to their outdoor experiences?

How do you transfer the learning into the classroom setting?

What does the research say about learning in nature?




- It is relevant and meaningful
- It is highly motivating and engaging
- Supports collaborative learning and social interactions
- Provides opportunities for autonomy and choice in learning
- Has social, emotional, physical and intellectual benefits

The rich sensory experience of nature-based settings provides a meaningful and authentic context for cognitive, physical, social, and emotional development (Kellert, 2002; O'Brien, 2009; Louv, 2008). Nature-based settings that students regularly engage in are personally relevant.


The experiential context is highly motivating, encourages collaborative, social interactions.

Nature-based settings provide many opportunities for autonomy and choice in how students interact in the environment. Students individually choose how they move about the environment, choose different aspects of the environment to engage in, study, and be curious about.



Factors that support the development of reading comprehension and critical literacy skills:

- Relevant real-world experiences
- Autonomy and choice
- Social interaction and collaboration
- Interesting texts



When there is a meaningful and relevant purpose for engaging in reading and critically literate thinking, then comprehension and critical literacy skills are supported and developed. For example, personally interesting observations spark interest and desire to ask questions and learn more. (See nest of spiders video). As previously mentioned autonomy and choice are highly motivating factors in engaging in and developing comprehension and critical literacy skills. (Guthrie & Cox, 2001; Taboada et al., 2009). Autonomy and choice also improve the transferability of learning from outdoor settings to indoors (Waite, 2011). Texts are an important link between real-world experiences and reading comprehension skills (Wason-Ellam, 2010). Reading becomes more meaningful when it is connected to real-life experiences because it serves an authentic purpose (student interest, communicating further learning). Children should be provided with interesting texts at their reading level.



Image from: <http://www.clipartkid.com>

Image from: clipsart.co

Image from: clipartpanda.com

Overcoming Challenges

- Time
- Curriculum standards
- Safety
- Accessibility
- Availability of texts
- Teacher comfort

Time: Be well planned and prepared.

Curriculum Standards: The new BC curriculum (2015) supports the use of alternative learning environments.

Safety: Research tells us that students need opportunities to identify and engage in risk elements for healthy child development.

Accessibility: When you do not have direct access to a natural setting consider creating partnerships with groups that could support visits to settings a further distance from you school. Grants are available in BC to help with funding (GoGrants fro HCTF.ca)

Availability of texts: Be resourceful. Seek donations, use public library. Self-made books can be made for early readers.

Teacher comfort: Spend time outdoors on your own, get proper gear (boots, jacket etc.). Ultimately your attitude determines what kind of experiences your students will have outdoors.

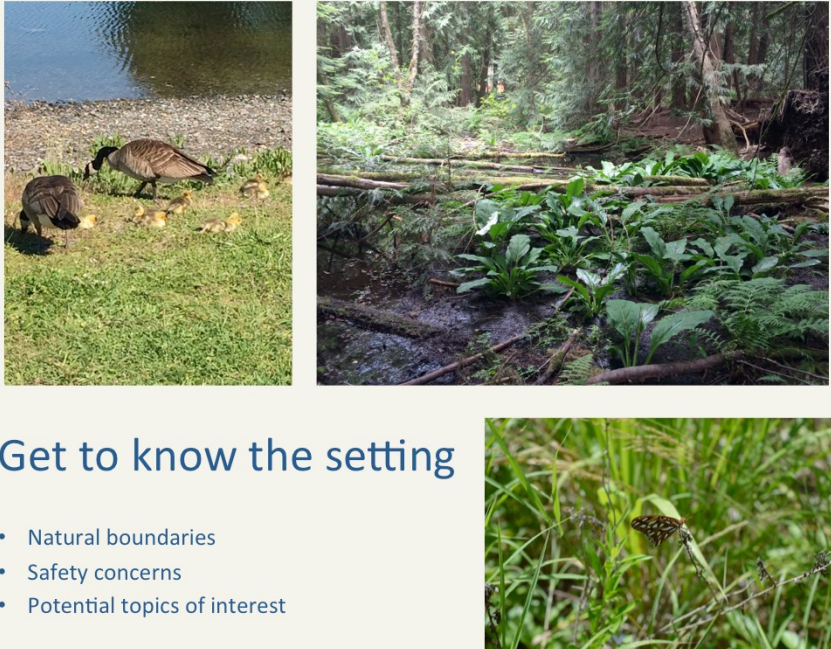


A Framework For Literacy Learning in Nature

Summarize the purpose of the framework to participants.

Provides a guide to help prepare and plan for nature-based interactions that will support the growth of reading comprehension and critical literacy skills.

Intended to help identify and overcome any specific challenges or barriers faced by teachers.



Get to know the setting

- Natural boundaries
- Safety concerns
- Potential topics of interest

The slide features three photographs: a pond with two geese and their goslings, a forest stream with large green plants, and a monarch butterfly on a grass stem. The slide has a light beige background with a vertical orange and blue bar on the right side.

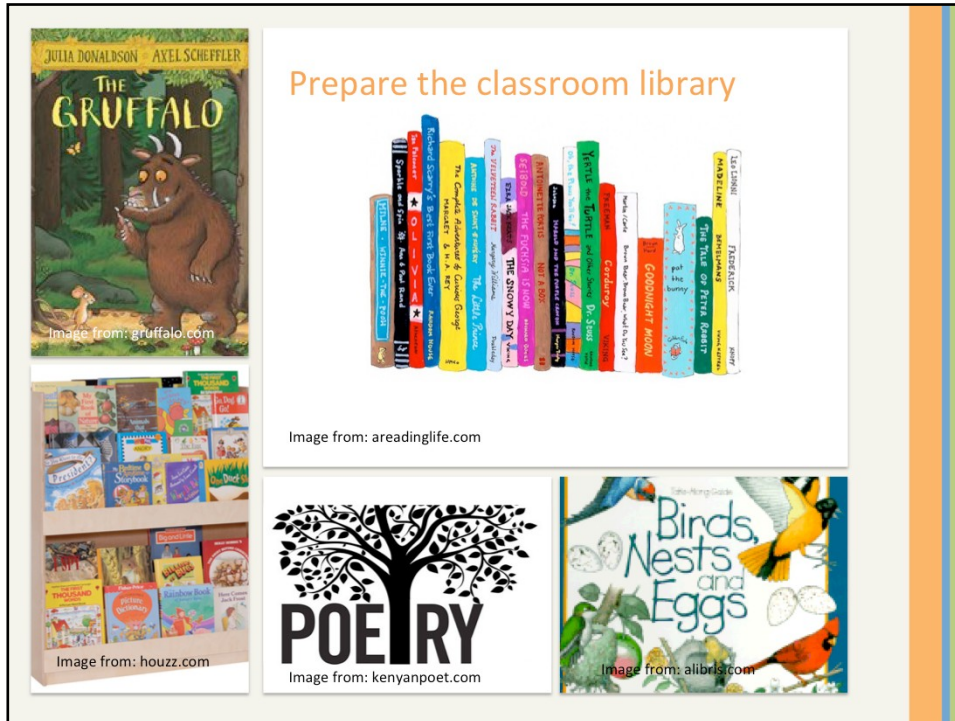
Spending time in the natural setting before you take your students allows you to identify natural boundaries, potential safety concerns and considerations for respecting and maintaining the environment. Take photographs for potential classroom activity extensions and making books for emerging readers. Note possible topics of interest (plant and animal life, environmental features, seasonal changes, human impact etc.). These topics will be used to build the class library, create science explorations tables and sensory activities in the classroom.



Gather and prepare resources

- Hands on materials
- Explore table
- Sensory bin
- Bulletin board
- Posters

Gather and prepare resource for use both in the classroom and in nature-based settings. For outdoors it is useful to have clipboards, writing utensils, iPads or cameras, magnifying glasses, etc. To extend the learning indoors provide hand on learning opportunities such as science explore tables, access to a variety of related materials. Prepare a bulletin board for students to share their thinking and learning.




Discuss with participants the potential challenges to providing a wide selection of texts. Possible resources for more texts include the public library, garage sales, discount bookstores, donations, online and electronic sources and self-made books using apps like Book Creator. Discuss the use of a variety of texts including fiction, non-fiction and poetry. Encourage participants to share suggestions of books that would suit their local environment. Provide a suggested book list as a resource.

Prepare complementary comprehension and critical literacy strategies

Image from: <http://www.wssd.org/Page/8728>

The key to becoming critically literate is by developing foundational comprehension skills such as making connections, visualizing, inferring, questioning and synthesizing (Hasset, 2008).

In addition to questions and conversations that arise during experiences in nature, prepare activities that will help bridge their learning to texts and deepen understanding and support foundational comprehension skills. These activities could include writing and drawing activities, activities that involve group or partner discussions, artistic and dramatic activities and hands on explorations.



Time to go outside...

- Safety
- Boundaries
- Appropriate gear
- Behaviour expectations and stewardship

Image from: forestsongnatureschool.com

Image from: nj.com


Before taking the children on their first exploration it is important to discuss together the rules and expectations. Safety and boundaries can be discussed and then reinforced when outside. Involving children in the process of developing the safety rules and boundaries allows them to feel ownership. Beginning conversations around stewardship of the environment is also helpful to ensure the setting is preserved for future visits. It will also be important to prepare students for outdoor visits by ensuring they have appropriate clothing and footwear. Communication with parents will be important.

The First Visit



- Children become familiar with the setting and the expectations
- Free exploration
- Informal

This visit simply sets the stage for future visits and allows students to become familiar with the environment and understand the boundaries, safety rules and overall expectations.



Going Back Again

- Build on prior experiences
- Make connections
- Deepen understanding
- Collaborate
- Bond with the environment

Repeated visits are important because they allow students to make connections to previous learning. It allows them to make inquiries, change their thinking, practice flexibility, engage with a variety of groupings and develop a bond with the environment.

Connections to the Classroom

- Interesting texts
- Technology
- Talk
- Writing
- Provocations

Connections to the Classroom

Nature-based experiences can be extended in the classroom in a variety of ways. Science discovery tables and provocations with related topics can engage children to ask more questions, make inferences and synthesize their learning. The outdoor experiences will give children prior knowledge when they engage with texts supporting their comprehension development. Sensory and nature tables allow children to engage in aesthetic, artistic and creative activities. Group discussions, sharing and brainstorms can deepen understandings and improve communication and critical literacy skills. Writing activities related to experiences and supporting interesting texts help children practice comprehension and critical literacy skills and writing skills. Technology can be used in a variety of ways both in nature and in the classroom. Apps such as Book Creator or iMovie allow children to make connections, visualize, and synthesize their thinking.



Image from: <https://childrenandnaturenetworkasia.wordpress.com>

Reflections
And
Resources

Children learn through
self-directed, hands-on,
real-world experiences

Participants discuss important 'take aways', ask questions, and resources identified in presentation will be shared (blackline masters, book lists, and references to useful website such as hctf.ca).

