

Outdoor Kindergarten: Achieving Outcomes with A Place-based & Land-based Approach to Emergent Curriculum

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Abstract

Many educators have come to realize the value of including the outdoor environment in their pedagogy and curricula. This article aims to contribute to the growing field of research on how children may learn through emergent creative outdoor play, and considers the benefits and needed re-emergence of this nature-based approach in society for all children in primary school education. The Outdoor Kindergarten model is an approach that is both current and authentic in its practice of place-based education and land-based learning. Potential benefits associated with implementing an Outdoor Kindergarten model in urban areas, which celebrate land-based teaching are discussed. In addition, Indigenous students in particular have had many challenges, beyond much of their control, connecting with the Canadian school system, as many do not see themselves nor their culture reflected within the current curriculum. Indigenous children have experienced their environment through teachings, ceremonies, exploration, and outdoor play for centuries before colonization and the eventual implementation of residential schools. Outdoor Kindergarten and play-based concepts offer particular value to these communities. In this article we provide powerful vignettes illustrating how Outdoor Kindergarten concepts can meet Newfoundland and Labrador curricular outcomes while addressing cultural curriculum and also develop inspiring inquiries on the land. In our article, we show how emergent land-based programming can support a strong sense of self, place, and community. It is the view of the authors that the Outdoor Kindergarten model also has the opportunity to support First Nations, Métis, and Inuit children culturally, socially, and academically.

Keywords: place-based learning, kindergarten, emergent learning, creative play

Introduction

More and more parents and educators have become deeply concerned about the amount of time young children are spending on-screen or with other electronic devices. Recent polls suggest that on an average weekday “31% percent of Canadian kids spend one-to-two hours staring at a screen, 34% take in between two-and-four hours of screen time, 14% stare at their phones and computers on average four-to-six hours, and 8% of children in Canada spend more than six hours on an electronic device each day” (Lupick, 2019, para. 5). Many teachers and parents would argue that these numbers are conservative, and in fact their own anecdotal experiences would suggest that children’s use of electronic devices is even higher.

As an antidote to this worrisome trend, many countries have embraced an emergent model for outdoor education: in Sweden they are called *Ich ur o skur* (Rain or Shine Nurseries), *friluftsbarnhage* (Outdoor Nursery) in Norway, *Waldkindergartens* (Forest Nursery) in Germany and are referred to as Nature Kindergarten, Outdoor Kindergarten, Forest School, and Forest Kindergarten in North America and the United Kingdom. All models essentially strive to provide an opportunity for children in their early years to “learn in an everchanging environment where the colors, temperature, textures, sounds and wildlife within their outdoor classroom change daily, creating a more sensory and stimulating learning experience and offering great challenge” (Latta & Simmers, 2011, p. 1). For the purpose of this article, we consider using the term Outdoor Kindergarten to be inclusive of tundra and other outdoor ecosystems. The goal of this qualitative narrative single case study was to better understand the Outdoor Kindergarten concept and how it might provide insight and inform current kindergarten curriculum for Newfoundland and Labrador and further Indigenous communities. The use of a qualitative narrative case study offered a fine-grained account of Breanne Card’s work with Erin Kenny’s Cedarsong Nature School in Seattle, Washington, as a model and more specifically its place-based approach to learning. In looking more closely at emergent and play-based curricula, research questions were devised to inquire more deeply to uncover hidden themes through children’s play experiences and voices to address how Cedarsong Nature School’s approach to literacy learning would benefit a traditional kindergarten class.

The richness of the data and accompanying captured vignettes revealed how the practice of Outdoor Kindergarten can meet and exceed all specific curriculum outcomes for Newfoundland and Labrador, in particular how the concept and practice could be a successful model for schools with Indigenous children. This article discusses how the findings opened a unique window for educators to re-affirm their curricular priorities in terms of outcomes, cultural values, and cultural responsibilities. Kindergarten curriculum outcomes have been seen to be successful in an environment that is stimulating, student centered, interest-driven, flexible, and supportive of various learning styles and abilities (Burke, 2019). However, a notable characteristic of Outdoor Kindergarten is that the program is committed to nature

immersion (i.e., spending 100% of their time outside while attending the program), emergent curriculum, and privileging children through an inquiry-based teaching style (Card, 2012). During a typical day at an Outdoor Kindergarten, students may engage in nature crafts, sensory –based play, engineering/ strategic building (dams, nests, forts, iglu), active play, tree climbing, meditation, self-regulation, balancing, nature theatre, singing and dancing, imaginative and creative play, nature hikes, science experiments, and the enjoyment of preparing and eating healthy snacks. In our article, we consider how Breanne’s study has much to contribute to our understanding of the concept of children learning on the land.

Literature Review

Land-Based & Place-Based Education

As so much entertainment, learning, and social interaction has moved online, many parents and educators are concerned about the deep disconnect between our youth and their natural world. This has been particularly enhanced by the restrictions created by the Covid-19 pandemic. Barbara McKean, an educator at the Royal Botanical Gardens in Hamilton argues that, “our connection with nature can feel like it’s slipping away right now” (Schaffer, 2020, *Hardwired for Nature* section, para. 4). Such a gap is beginning to show to have potentially devastating effects on our world, economy, and ourselves if not addressed. Charles Jordan from the Conservation Fund believes that “what they do not know, they will not protect, and what they do not protect, they will lose” (Merrill & Schei, 2010, 2:05). This quote is significant as it addresses the importance of an early introduction to environmental education for children. The practice of Outdoor Kindergarten learning is one way of ensuring a child will develop a strong sense of self, place, and community, which will in turn close the growing gap in society and allow us to protect what we know and understand. Place-based education, when viewed through the curricular lens of Outdoor Kindergarten programming, creates a strong sense of community, sense of a place, and sense of self through creative play-based learning. As researcher David Sobel states, it also emphasizes “hands-on, real-world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community...and...enhances students’ appreciation for the natural world” (Skoutajan, 2013, para. 1). Further, place-based education provides a solid foundation for implementing the pedagogical practices of Outdoor Kindergarten in Indigenous communities. We endeavor to show greater understanding of the concept of children learning through outdoor emergent creative play and land-based education. Globally there is a push to view place-based education as a child’s basic human right. Vickers and Matthews (2002) stated that environmental educators have a reasonability to ensure that “all children have the opportunity to develop relationships with wild places right in their communities to develop this critical sense of place” (p. 16). The facilitation of place-based education is a human right and seen as a

revolutionary step forward to “articulate an educational theory that is responsive to the interconnectedness of cultural and ecological life” (Gruenewald, 2003, p. 6). In this article, we take steps to create an educational model that supports a student in achieving a stronger sense of self, place, and community, with encouraging learning on the land to be a critical input when considering and designing current kindergarten curriculum.

Blanchet-Cohen and Elliot (2011) suggest how place-based education can be beneficial in early childhood education in their study of four early childhood programs and the value of learning possibilities outdoors. Their findings suggest that direct knowledge is obtained by such place-based activities as “experiencing the effects of weather and seasons firsthand, finding bugs under logs and rocks, or watching a creek dry up or ice over” (Blanchet-Cohen & Elliot, 2011, p. 759). Additionally, Blanchet-Cohen and Elliot’s (2011) research reveals that outdoor community-based learning provides a “holistic education” found in children’s relationships to their environment through exploration of kinesthesia, socialization, and creativity (pp. 773-774). The practices and model of place-based education are quite broad and applicable and can be associated with “experiential learning, contextual learning, problem-based learning, constructivism, outdoor education, Indigenous education, environmental and ecological education, bioregional education, democratic education, multicultural education, community-based education, [and] critical pedagogy” (Gruenewald, 2003, p. 3). With an encompassing model, the possibilities are endless and could be quite impactful. Sobel (1996) suggests that the curriculum of place-based education can be used to “mirror the expanding scope of the child’s significant world, focusing first on the home and school, then the neighborhood, the community, the region, and beyond” (p. 19). Again, the place-based model fosters a strong sense of self, place and community, and takes on a self-directed learning style that increases the chances of involvement, ownership, and success—all qualities that see communal opportunities and contributions as part of the sense of self to the place.

Place-based education can also be linked to land-based learning and a sense of cultural responsibility, especially when participating students are from Indigenous communities. It echoes the basis of understanding of Indigenous cultures and belief systems. Kutsunai and Au (2013) discuss the successes of implementing culture within the curriculum in their article, “Culturally Responsive Instruction: Listening to Children.” Their study looked at *culturally responsive instruction* which leverages cultural and linguistic expertise in the classroom and how teachers should utilize this type of instruction to facilitate classroom learning that might otherwise create a gap in academic achievement for students from culturally diverse backgrounds (Au, 2007; Kutsunai & Au, 2013). Inclusion of cultural elements in the classroom provides students with an opportunity to feel represented in the curriculum, through artefacts (Kutsunai & Au, 2013), songs, and storytelling (McCullum Baldasaro et al., 2014). The relationship between storytelling, place, and memory could very well heighten a child’s

sense of self and community. A sense of belonging and attachment influence successful educational experiences for Kindergarten students, while embracing land-based, place-based education, through the delivery of culturally responsive instruction.

Importantly, land-based and place-based education, beginning with Outdoor Kindergarten, can be a bridge that helps to reconnect First Nations, Métis, and/or Inuit students to their land, themselves, language, and community. Barnhardt and Kawagley (2005) submit that “the importance of linking education to the physical and cultural environment in which students and schools are situated has special significance in Indigenous settings, where people have acquired a deep and abiding sense of place and relationship to the land in which they have lived for millennia” (p.19). Tragically, Indigenous groups are disconnected from and are ostracized by the Western institution of school (Barnhardt & Kawagley, 2005; Wildcat et al., 2014). Addressing this disconnect requires schooling experiences enriched through pedagogical approaches that give time and space to reconnect students with their land and culture. Land-based pedagogy provides a traditional foundation for Indigenous students through an affirmation of learning approaches supported by Elders and community members. Such Land-based learning approaches have been instrumental in providing safe and positive spaces to heal from the effects of Residential Schools, colonization, relocation, and intergenerational trauma. This type of community approach and support provides the safe spaces needed to, “reconnect Indigenous peoples to land and the social relations, knowledges and languages that arise from the land” (Wildcat et al., 2014, p. 1). Children’s early beginnings in school need to begin with and build on these formative experiences. An enriching Outdoor Kindergarten land-based cultural curriculum program would provide multiple opportunities to ensure that a child sees oneself and culture reflected in learning that is based in a foundation of a strong sense of self, place, and community.

Power of Play

Outdoor Kindergarten provides children the chance to experience learning through the act of creative play (Warden, 2010). It is clear that such affordances in nature do have impressive benefits for children, and research has found that nature-based landscapes, or “play-scapes” do present many educational opportunities and are in fact more stimulating than those riddled with concrete and plastic (Fjørtoft, 2001). Kane and Kane (2011) describe how imaginative play is employed in play-scapes to promote a social and creative environment:

Some children have found evergreen branches and are pretending to paint a tree, using the branches as imaginary brushes. The branches are then transformed into brooms, and the children clean the forest floor. One child pushes a knob on a tree to sound an imaginary fire alarm, and others run for safety! (p. 17)

Children feel more comfortable when in a natural environment, and their knowledge

about nature, the world, and themselves increases. It has been proven that green natural environments like forest schools actually lessen the occurrence of behaviour and mental health disorders and improves self-awareness and self-confidence (Moser & Martinsen, 2010; Bredekamp, 2011; Beyer et al., 2015). The environments in which Outdoor Kindertartens tend to operate invite children to use their critical thinking, problem solving, and imagination to make connections to the modern world and the world beyond the green setting (Melhuus, 2012). Indigenous culture in general also places a premium on lived experiences— “the importance of listening, watching and waiting is something the First Nations elders have taught the generations after them to ensure that experience was not detached from knowledge” (Hyder, 2017, p. 9).

Educators and researchers continue to encourage play to be a part of educational curriculum development and planning: “as children play in their physical environment, they learn to use the world to advantage”, allowing children “to learn and take risks” (Burke, 2019, p. 135). While immersed in nature, children are experiencing creative, sensory, and scientific play to name a few and a variety of skills that accompany such play. These skills include making predictions, developing critical thinking and problem-solving, physical fitness, fine and gross motor development, safe risk assessment, self-regulation, self-advocacy, recording findings and documenting discoveries, and positive risk-taking (Björge, 2015, Fjørtoft, 2001; Mjaavatt & Fjørtoft, 2008; Sandseter, 2010). Another attribute found on the part of children through outdoor play and participation in Outdoor Kindertartens is an enhanced sense of empathy, kindness, and environmental sensitivity for natural spaces (Elliot et al., 2014). Students learn to have respect for all living beings and are taught to think about the impact of their actions before stepping on a bug or removing the moss from a rock. One small example: children are taught how to touch small insects and worms with care, and the concept of trapping is discouraged because of the stress that might cause the living creature (Enid et al., 2014). This sort of respect for nature and holistic approach to understanding life is also in line with Indigenous approaches to education and personal development, as an “individual who is in harmony values nature and respects elders...being out of balance with nature is believed to cause sickness” (Hyder, 2017, p. 9). Outdoor environments as learning spaces afford children an opportunity to understand how harmful actions may affect themselves, others, and the natural world and develop empathy (Enid et al., 2014; Kane & Kane, 2011; Kenny, 2012). Safe risk-taking is a topic of high priority among parents and educators in an increasingly busy world where outdoor free play in urban landscapes comes with its own problematic factors. Playing in an outdoor setting presents risk-taking opportunities for children where they can navigate, assess and confront risks (Kane & Kane, 2011; Kos & Jerman, 2013; Sandseter, 2009). Outdoor Kindertarten educators and facilitators also must model the practice of safe risk assessment to support the development of critical thinking, problem solving, and self-confidence.

The experience of outdoor play in a natural environment can help to inspire a safety ethic that promotes safe risk assessment, ownership, leadership, and self/peer care.

It must be noted that there exists in education those who believe that making snow forts or playing in a puddle are not conducive to academic learning. Finding time for play-based learning is a barrier for many teachers who are also consumed with expectations for student assessments (Fesseha & Pyle, 2016). More resources are needed to support educators on how to successfully incorporate play-based learning in the curriculum and policy (Fesseha & Pyle, 2016). Even though a play-based curriculum has been implemented in some Kindergarten programs there is still an argument that school should be a place where you sit at your desk quietly and learn, and that children have more than enough time for play once they are home (Miller & Almon, 2009). The idea of the school as a regulator of young children is quite prevalent in Western society and remains a controversial topic. This has resulted in a major push to teach elementary curriculum at the early childhood level, with nursery schools following suit and focusing largely on literacy and math skills. This traditional idea of schooling leaves little time for play-based learning (Burke, 2019). Wait et al. (2013) propose that “in outdoor spaces, there appears more ambiguity surrounding discourses of teaching, and that ambiguity allows for more playful child-initiated learning” (p. 256). Even with the educational emphasis on activity in outdoor spaces, however, there has been a major decline in the opportunities for outdoor play for pre-school children in many Western countries during the last century due to the “institutionalization of childhood, over-organization and a culture of fear, all of which imply changes to the nature of child play” (Kos & Jerman, 2013, p. 190).

Children have a sensory-based need to feel the cold mud in between their toes or to smell and taste their surroundings. Children often place great value and meaning in items that may not interest adults, such as rocks, seashells, leaves, or feathers. However, an adult’s positive reaction to a child’s interest can have implications for the child’s development (Elkind, 2003; Kos & Jerman, 2013). This is something all parents and teachers should be aware of when working with early years students in any setting. A study by Voce (2012) revealed that even though parents are aware of the importance of play, they are not providing sufficient play opportunities for their children. Children’s use of technology has been a voiced concern by many researchers with the Covid-19 pandemic, children are spending more time with media and technology rather than spending time in green spaces (Bredenkamp, 2011; Charles et al., 2009; Singer et al., 2009; Voce, 2012).

Our Narrative Qualitative lens

Breanne (first author) had been working with Anne (second author) on a number of research projects at Memorial University. Breanne has had extensive experience working in the north and with Indigenous communities, and is a co-founder of the Nuna School (land-based learning and cultural curriculum) in Apex,

Nunavut. As Anne and Breanne were conducting research in schools and childcares on play-based pedagogies for early years children, Breanne, an outdoor education/kindergarten specialist and Certified Forest School Practitioner, often questioned why teachers did not always see the value of taking children outside for opportunities for play-based learning. Her discussions with teachers revealed a misunderstanding of the value of outdoor learning as lacking in academic rigor, and thus not offering the same opportunities as afforded through play-based learning in a classroom setting. The research questions for the case study explored the process by which play-based curriculum objectives for literacy in a kindergarten classroom could be rendered through an outdoor learning classroom. The use of different types of texts and pedagogical approaches both inside and outside of school brought forth a compelling narrative sharing account (Card, 2012) as witnessed with data captured in the form of free-play interviews, observations, field notes, artifacts, photographs, audio and video recordings, while students were experiencing the land on which they were learning. The choice of Cedarsong Nature School as the research site was well paired with a qualitative research lens because in this case study the “qualitative research is used to understand phenomena from the perspective of a particular population group” (Denzin & Lincoln, 2000). Ethical approval was given by Memorial University, as well as Erin Kenny’s Board of Directors at Cedarsong Nature School in Seattle, Washington, for the six-week study with four families and Erin Kenny herself. In the next section, we share the rich themes gleaned from the data in the study.

Possibilities for Emergent Curriculum and Creative Problem Solving

Emergent curriculum is a child-centered model that encourages learning and child development through creative and imaginative play in or outside of the classroom. Many examples of creative play-based learning when viewed through the model of emergent curriculum and nature immersion were found to benefit young children immensely in this study. One participant, Clive (pseudonym), thrived academically, emotionally, and socially while being supported through a land-based approach to learning. Raised by parents who were environmentally conscious, six-year-old Clive had a vast knowledge of the forest in comparison to other children his age. Daily observations saw him barefoot and eagerly exploring the forest surroundings as his learning classroom. The benefits of this outdoor learning classroom presented first as a safe space for Clive to conduct his own inspired inquiries about the land. Then, as a place-based classroom for learning this space offered many opportunities for Clive to regulate his emotional output through playful opportunities: learning to be calm and meditative, learning through socialization with other children, learning to be loud and boundless, learning to be creative with problem solving, while remain active, focused, or even quiet and contemplative. These outcomes were all seen as the benefits for Clive by his parents, and in conversation

they explained how happy they were to have a child who shared their same love of nature. Previously, they had not thought much about how comparatively formal school curriculum was being addressed on a daily basis through Clive's inspired inquiries. In an interview, Clive's parents shared an observation of the growing social and physical benefits as a result of the nature immersion program expressing they had not considered how the forest could be a space for this type of literacy learning: "They learn lots about plants, animals, and those things which is wonderful, but no reading and writing... I like this. I do not think it is the environment for reading and writing" (Card, 2012). Outdoor kindergarten is commonly perceived to only cover science, but it covers all areas of the curriculum. This admission on the part of Clive's parents was not uncommon as nature study is often seen as a science endeavor and not one that promotes the skills of literacy. Visual learning and oral communication experienced each day by Clive explore the underlying relationships found in further understanding of our world. In the following vignette, we share the value of an emergent curriculum that is based on the land as the teacher. In this picture, we see Clive has begun to build a dam and is calling out to his teachers.



Clive (singing out to Breanne & Erin): I am working on my dam! This is my dam. Look. Look, I even have sticks on it. That dam is a little bit higher, but it isn't as strong.

Erin: What were some of the things that you used to make this dam so strong?

Clive: I used mud, piece of log, and a bucket.

Breanne: A bucket is in there?

Clive: It is right here... [Points down into the mud]

Erin: Ha. That is so creative!

Breanne: Wow! Why did you bury a bucket in the middle of your dam?

Clive: It helps hold the water because in the middle it is runnier than in other places. I need to get the mud out... I need to rake it and pull it out.

Clive: Oh no! There is a path!

Erin: Look at that, there is a place where it is leaking. I am glad you noticed that.

Clive: I am extra strong. That is why I can get mud in here in no time.

Breanne: What are you using your bare feet to do?

Clive: To pat it down. See...it is starting to go that way... I know a trick.

Breanne: What is your trick?

Clive: It is to get dry dirt and wet dirt and mix it together. It makes the dam stronger. Look...

Breanne: Yes, you stopped the water!

Clive: I will make some for later... I am keeping the water in. A dam must be strong to keep the water in.

In this excerpt, Clive is actively learning and experiencing key elements of engineering, water displacement, physics, gravity, and water erosion of his own accord. During his inspired inquiry, we witness his growing literacy learning through stages in the dialogue among him, Breanne, and Erin. He explains his preparations in the building of his dam, but shows critical thinking and problem solving along the way. He thinks more functionally about other possibilities and tests out a number of hypotheses, which makes this a very successful example of the emergent learning that characterizes how the land can be an active teacher. For instance, when he found a small leak he re-purposed his tools of repair to ensure the dam leak did not break through elsewhere. His decision making can be seen as innovative and preemptive, as he was making predictions of where the water might leak next and taking measures to ensure it did not occur. His actions naturally address science outcomes found in the Newfoundland Science Primary Curriculum as his experimenting by mixing wet mud and dry dirt together to create more of a paste or “concrete”. His second hypothesis later showed his reasoning as to why his second dam needed to be “squishy” and how he trapped the water in his buried and camouflaged bucket. Innovative and entrepreneurial actions on the part of Clive show he had a vision, and realized this vision within one morning through building two side by side functioning dams. The use of a place-based education had given the time, space, independence, and encouragement to learn through his play to achieve such success. Like so many play-based situations what “may appear chaotic to the on-looker, it is full of new understanding and learning on the part of the player” (Burke, 2019, p. 23).

Clive’s creative, academic, and social success in this project gave him a huge

sense of self-confidence. He was proud of himself, his accomplishments, and the other students were keen to join him in his innovative play. As seen in the dialogue above, this interest-led and inspired inquiry covers traditional curriculum science outcomes, and social skill expectations. Breanne and Erin's inquiry approach questions helped Clive to scaffold his learning about dam construction through an emergent curriculum.

Socialization and Community

Play, at its most elemental level, is the "means by which children develop their physical, intellectual, emotional, social and moral capabilities" (Gray, 2008). Play-based Outdoor kindergartens create an unstructured setting where children's exploratory excursions can take place. And importantly one in which children's social capabilities can be extended and enhanced. In this discussion with Breanne and Erin, we see how Clive and his peer work together, learning to co-operate and co-ordinate their play, with each child challenging the other's ideas, and using their shared learning to expand their own understanding.

Peer: This dam is strong enough for people to walk on.

Clive: This one is strong enough too.

Peer: But it is a little bit squishier.

Clive: Ya. That bit. Do you want me to tell you why it makes it stronger...the squishy? Because it kind of absorbs the water like a sponge. And it pushes it back out.

Peer: And this one holds its back. [referring to the dam above stream]

Clive: That one...yes that one has to be strong enough for the water to not push over it and this one absorbs it like a sponge and pushes it back out. That is why mine is a little stronger because this can go over there, but if it gets into mine it gets pushed back out.

Breanne: Cool, so it absorbs it, but it also pushes it back out?

Clive: Ya, when it goes over here it goes back into here.

Clive: If it goes over the top of this one, it sucks up water and pushes it back out.

Peer: Clive, what about this one?

Clive: It...kind of ... But it [water] can go over this one if you don't make it higher, but this one...if it goes over this one it sucks it up and pushes it back out.

Erin: That makes so much sense, Clive. So, this one is pushed down so hard that when we fill it up it spills over the top. The other one is squashier, so when you fill it up to the top instead of spilling over it soaks in. (speaking to Clive) We call this strategy building.

This dialogue reveals how the particular affordances of the land as a teacher in outdoor play entice the two children to explore, socialize, and theorize, reaching interesting and thoughtful conclusions about their experiments. Both Erin and

Breanne makes subtle enquiries, but neither creates or guides the experiment, just encourages further co-operation and explorations. The sense of freedom found on in this vignette through the boys inspired inquiries with the land as their teacher enhances both their learning and relationship with nature.

Critical Thinking and Problem-Solving

Creative and imaginative play can foster and encourage critical thinking and problem solving. Clive's critical thinking and problem-solving skills are quite mature for a child of his age. Making connections and understanding the interrelationships within our world are needed for children to reflect on the bigger questions in life.

Erin: Yes, but what does the sun do? How does it make the plants grow?

Elodie: The plants make sugar.

Erin: Yes, the plants need the sun to make sugar with the leaves. Good thing the plants have its leaves, right!

Erin: There is a big word called photosynthesis that explains how the plants need the sun to create sugars. Have we talked about this big word before?

Jane: Yes, it means change.

Erin: Good memory, Jane. Metamorphosis means change. What kind of animals do metamorphosis?

Jane: Butterflies.

Erin: Yes. Very good, what else?

Reiko: Frogs.

Clive: Salamanders.

Mary: Plants!

Erin: Yes! They metamorphose from a seed to a plant.

Mary: ...and then to soil.

Elodie: What about a carcass? Because a carcass turns into dirt.

Clive: When plastic decomposes all the way, it turns into petroleum oil.

This conversation was documented by Breanne while the students were eating their snack. Erin devoted 20-30 minutes during mealtime to talk about their morning and to ask what might be termed “big picture questions.” This vignette shares how the Cedarsong team scaffolded children’s understanding of the interrelationships in nature from photosynthesis to metamorphosis and decomposition—all sophisticated topics for this age group. All of the students show sustained critical thinking, with Clive demonstrating an even greater understanding of nature’s connective tissues. In sharing “when plastic decomposes all the way it turns into petroleum oil” sparked an entirely new conversation within the circle. Erin and the students began discussing the materials used in our day-to-day life and what naturally decomposes, what does not, what takes a long time, or needs help. Clive wasn’t wrong in his proclamation, as

plastic can be changed into crude oil or other types of liquid fuel through a high heat process—it just doesn't happen naturally. By the end of snack time, the students had concluded that everything made by nature fully and naturally decomposes. Critical thinking on the part of Clive could be associated with his experiences in the outdoors, a holistic natural learning environment. In Breanne's field notes, she noted Erin asked the students a philosophical question: What came first, the seed or the plant? She shared "there is actually no answer to that question...another is what came first, the chicken or the egg...that is what is called a philosophical question. A kind of question that you ponder and ponder and ponder...you think and you think, but that no one really knows the answer to" (Card, 2012, p. 127). Imagination and creativity was sparked with the children wondering if there was a magic seed, a golden seed, maybe the seed and plant arrived at the same time, and one even said that God put the seed there. All of their thoughts were respected, heard, and considered by the group. It was a safe environment in which to share — one where contributing was about listening. Clive sat and ate his snack and did not contribute to the conversations until he had heard what others were thinking. While it appeared that maybe he was too busy eating his apple slices, in truth he was very aware and absorbed in the discussion. When he was ready, Clive shared his thoughts with the group:

"I think it came from a kind of metal or rock in space. I was thinking there was a special rock in space that broke open and it fell on to our planet and all the seeds fell out and started all kinds of plants on our planet, so it started out like that" (Card, 2012, p. 128). Erin responded "So, the origins of all the plants are from outer space? Wow. That is a good idea" (Card, 2012, p. 128).

Clive's space idea is actually a very real theory: Cambridge University's International Journal of Astrobiology has published an article postulating that "the first 'seeds of life' were deposited on our planet from space 3,800 m years ago...microbes from outer space arrived on earth from comets, which then 'multiplied and seeded' to form all life on Earth" (Hough, 2010, para. 2); Wickramasinghe, 2010). Clive's outdoor play and connections with the land encouraged a free flow of imagination and creative thinking show new and real possibilities.

Outdoor Play Space – Opportunities

The Outdoor Kindergarten presents many educational advantages and opportunities, not least of which is its practical use of nature as its teacher. Advocates believe that a nature approach model is the answer to a growing list of numerous childhood anxieties and social concerns. Rather than seeking complex medical and psychological therapies, advocates for land based play simply believe that "a kid who suffers from anxiety doesn't necessarily need medication, a child who can't pay attention doesn't need a computer program to reshape her development...one who

struggles to keep up physically doesn't need a targeted summer-camp experience...instead, what they need is more time outdoors" (Williams, 2018. Para. 6). With the exception of a handful of urban schools within the province of Newfoundland and Labrador there are very few primary schools that do not have access to outdoor spaces. This would be even more true of schools in Indigenous communities, very few if any of which are located in dense urban areas. It seems a true disadvantage when children are not afforded their right to learn on the land.

Outdoor Kindergartens have a critical structural advantage in that they do not require expensive equipment, or manufactured toys. The Cedarsong Nature School's guiding philosophy and success was built on the premise that an Outdoor Kindergarten needs to take place "outside the fence" ("Cedarsong", n.d.), i.e. not in a playground or confined yard, and one that does not need any particular tools or equipment other than warm outdoor clothing. An Outdoor Kindergarten is not a concrete school playground, with the usual apparatus, chain-link fence, square-ball courts, etc. It must simply be a natural space, where children and nature can interact, free from artificial and unnatural devices. Newfoundland and Labrador and its Indigenous communities abound in such land-based learning opportunities, and even in the province's urban schools, natural areas are easily available and accessible.

As we find ourselves in a very uncertain time and place for children as a result of the pandemic. This case study provides evidence of the power of nature as a teacher in children's inspired nature inquiries. We invite educators and policy advisors to take notice of the possibilities for land-based learning through our fine grained account of Cedarsong Nature School's pedagogical approaches to learning on the land. Outdoor Kindergarten may have an important role to play in Indigenous communities in Canada. A land-based approach and the nature immersion concept would meet both cultural and curricular outcomes, as it would support First Nations, Métis, and/or Inuit children to connect with their sense of self and place through emergent place-based programming. With our invitation comes an understanding that investment in an Outdoor Kindergarten program would be a bridge between traditional education and culture—while all children show demonstrable health and educational advantages from outdoor play, Indigenous students in particular would see themselves and their culture reflected in this nature based emergent curriculum.

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