Becoming a Nature-Inspired Teacher: Pollination of the Mind Through Nature-Inspired Pedagogies

An Autoethnographic Narrative Inquiry

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ABSTRACT

Becoming a Nature-Inspired Teacher: Pollination of the Mind Through Nature-Inspired Pedagogies

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This autoethnographic narrative inquiry traces my journey toward becoming a nature-inspired educator, using the concepts of *becoming, plateaus, and lines of flight* from Gilles Deleuze and Félix Guattari to frame my investigations. I draw on the metamorphosis of a caterpillar into a butterfly as a metaphor to encapsulate key life experiences—my *plateaus*—that have shaped my teaching philosophy. These experiences include my religious upbringing, global travels, engagement with Indigenous epistemologies, analysis of adolescent nature narratives, and a 30-year tenure at the alternative high school I founded. Through autoethnographic narrative inquiry, I describe, analyze, and interpret how these personal and scholarly experiences shaped my evolving role as an educator and led me to question conventional teaching models. The theory I propose, Nature-inspired Pedagogy of Becoming (NIPB), contends that being a nature-inspired educator is not a fixed identity but an ongoing evolution shaped by a series of *plateaus* and *lines of flight*. Similarly, I operationalize *pedagogy* as Deleuze and Guattari treat identity; always in flux, always evolving, always becoming. This process unfolds through dynamic interactions between teachers, students, and the natural environment, where each participant develops unique narratives and engages in their own forms of becoming. I aim to offer fellow educators an alternative pathway beyond traditional, teacher-centred approaches, advocating for a nature-inspired, holistic, and immersive teaching model. By challenging the notion of a fixed teacher identity, this work offers new insights into how educators and students co-evolve through shared experiences in natural environments.

Keywords: Nature-inspired pedagogy of becoming, Deleuze and Guattari, Rhizomatic education

I don’t know if we each have a destiny or if we’re all floating around accidentally-like, on a breeze. But I think maybe it’s both, maybe both are happening at the same time.

Forrest Gump

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I am deeply grateful for the time, energy, and patience extended by Dr. Caroline Cambre, my supervising teacher, whose guidance did not follow a linear path but unfolded through a series of interconnected moments—each branching into new ways of thinking and becoming. I also wish to thank my advisory board members, Dr. Julie-Soleil Archambault and Dr. Christine Jamieson, whose insights formed a dynamic network of ideas, continually opening lines of inquiry and possibility.

This journey has never been a solitary act but rather a collective movement, a weaving of relationships and affect. My wife, Kim, has been a constant companion in these assemblages—her unwavering encouragement flowing like a vital current, sustaining me through multiple plateaus and lines of flight. Our shared moments—sometimes still, sometimes chaotic—have kept me attuned to the emergent nature of this work.

And at the heart of it all are our children, Sophie and Micah, whose boundless curiosity and unrestrained wonder remind me that knowledge does not grow in straight lines. Their presence infuses my journey with spontaneity and life, continually propelling me toward new territories of thought and feeling.

DEDICATION

For learners yet-to-come.
For those whose questions will create new paths,
whose wonder will reach beyond what is known,
and whose journeys will unfold in ways yet unimagined.

May you move freely through lines of flight,
not with fixed destinations,
but in ever-emerging landscapes of thoughts and becomings.

This work is but one thread in the vast web of learning—
a spark, a seed, a beginning—
waiting for your contribution to grow, shift, and transform.

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CHAPTER 1

Identifying Research Questions

Standing in the school parking lot, I observe my adolescent students as they scatter and cluster, mirroring the movements of the ants they are studying. Earlier, I strategically placed four scoops of vanilla ice cream on the asphalt, now transformed into puddles of sugary cream, 20 meters apart. The assignment asked students to observe ant activity and document findings. The Ministry of Education of Québec mandates that teachers facilitate the exploration of small business hierarchies and supply chains in its Entrepreneurship curriculum. Some teachers employ virtual scenarios via YouTube, while others organize field trips to local businesses. Orchestrating numerous ant outings, I've witnessed varied student reactions. Initially dismissive— "Sir, it's just ants"—they soon engage deeply in their tasks when urged to select an ant to track visually and physically. Enthusiasm builds as they discern communication patterns among the ants and note the diminishing ice cream supply. Physically and intellectually engaged, these teens squat, crawl, record observations, and make deductions. Later, they synthesize their field notes into blueprints for potential businesses. These observations of ants not only captivate my students but also spark my curiosity about the broader implications of nature-inspired learning. This leads me to the purpose and importance of my research, which aims to explore how such experiences can transform educational practices.

I, too, take notes. Each session of this course reveals new student approaches to ants, prompting me to refine and innovate their learning experiences continuously. Most importantly, I reflect on how this approach continually transforms me as I remain in a perpetual state of becoming a nature-inspired educator. During these moments of reflection, two key guiding questions developed for my research: What significant events in my life have influenced my connection with nature? And how have these experiences shaped my pedagogical approach? This autoethnographic narrative inquiry draws from my religious upbringing, global travels, experiences in Indigenous communities in Canada's North, research into Indigenous epistemological literature alongside my study of adolescents' nature narratives, and a three-decade tenure at an alternative high school I established. Each transformation in my evolution influences the next, sometimes in zones of intensity or *plateaus*[1] and at other times in escape pathways or *lines of flight*. This dissertation traces my development as a teacher, highlighting my training, education, and evolving experiences, from traditional teacher toward becoming a nature-inspired educator.

The Purpose and Importance of my Research

My dissertation focuses on my evolution from traditional teacher to *becoming* a nature-inspired teacher. Analyzing my foundation, training, and life experiences develops a travel guide for other curious teachers who want to develop new approaches to teaching. I briefly review the teacher-training programs offered by Québec Universities to explain my pathway toward being licensed as a teacher. Although many programs are seen as progressive with technology, they do not offer substantive courses in nature-inspired education. I reflect on my experiences at the private alternative high school I founded, where we adapt pedagogical approaches to create an

[1] Definitions of vocabulary developed by Deleuze and Guattari are found later in this chapter

immersive, nature-inspired learning environment, while adhering to the curriculum requirements set by the Ministry of Education of Québec. Finally, I include my research with adolescent camp counsellors in Québec to show how time in nature correlates with transformation. Their nature-experience stories reveal various kinds of transformations, from overcoming personal fears and building confidence to developing empathy and a stronger sense of responsibility. Their stories highlight shifts in identity (becoming), as they move from feeling uncertain about their abilities to embracing leadership roles, often discovering a deeper connection to themselves, others, and the natural world.

Research on this topic requires a caring approach. van Manen (1990) argued that researchers must care about the phenomenon they study. Similarly, Goethe (cited in van Manen, 1997) wrote that deep knowledge comes from a powerful and vivid love and passion for the subject. This caring approach is essential for my study through which I articulate my journey toward becoming a nature-inspired teacher. Burgess and Mayer-Smith (2011) suggested that nature-based educational reform starts by listening to children's ideas about nature. Descriptions of adolescent experiences interacting with nature supplied empirical support for the design of resources I provide for educators and curriculum developers that can be used for nature-inspired approaches to learning. These descriptions also supply educators with a current understanding of how some adolescents in Canada perceive their experiences in nature. Intertwining my journey and life experiences with their narratives, I develop a theory of nature-inspired learning that posits teachers and students are in a continual state of *becoming* as they engage together in nature-inspired pedagogy. This theory embraces uncertainty, fluidity, and interconnectedness. It challenges traditional, static education models and offers a view of learning as an ever-evolving process shaped by relationships with the broader ecosystem. My research also has implications for social change, including nature-based approaches to pedagogy that encourage affinities with nature. Exploring the exchange between humans and nature and the potential for nature to be a didactic and transformative environment can lead to improved environmental stewardship.

Establishing a philosophical framework

During the early days of my PhD studies, my supervising teacher introduced me to Deleuze and Guattari's (1987) concept of *becoming*. In this framework, *becoming* refers to the ongoing, transformative processes integral to experiences as a nature-inspired teacher. In Deleuze and Guattari's terms, I am an *assemblage* of my DNA, life experiences, and interactions with others in a state of ever-*becoming*. The various *plateaus*—the stable, continuous phases of *becoming*—connect *with lines of flight* that move or *deterritorialize* me, developing new connections, ideas, and pedagogical approaches.

Gilles Deleuze and Félix Guattari's (1987) philosophy radically rethinks concepts like identity, politics, and learning. Central to their work is the idea of becoming, which challenges static notions of selfhood and linear progress. I rely on this conceptual framework throughout my dissertation to scaffold my experiences towards becoming a nature-inspired teacher and for my proposal a of Nature-inspired Pedagogy of Becoming. Next, I describe their framework, exploring the implications of their ideas for contemporary education while contrasting their vision with neo-liberal and critical pedagogical traditions.

Deleuze and Guattari vocabulary

In *A Thousand Plateaus* (1987), Deleuze and Guattari introduced a distinctive vocabulary to articulate their complex views on reality, subjectivity, and the process of *becoming*. To grasp the philosophical framework underpinning this study, it is essential to understand the specific vocabulary introduced by Deleuze and Guattari. These terms provide the foundation for the concepts discussed throughout this dissertation. Below, I define key concepts that I use in my dissertation.

Becoming: This term describes a state of continual change where everything is fluid—specifically identities—where individuals are constantly influencing and being influenced by others' experiences. Composed of plateaus and lines of flight, these rhizomes interconnect, and the only constant is change. Brian Massumi (1987), in the forward of his translation of *A Thousand Plateaus,* described arriving at a plateau as

> when circumstances combine to bring an activity to a pitch of intensity that is not automatically dissipated in a climax. The heightening of energies is sustained long enough to leave a kind of afterimage of its dynamism that can be reactivated or injected into other activities, creating a fabric of intensive states between which any number of connecting routes could exist. (p.15)

For example, a person studying nature might experience becoming by immersing themselves in the environment and attuning to its rhythms and movements, such as observing and embodying the migratory patterns of birds—not to mimic them physically, but to form a deeper connection and understanding of their existence. Another example drawn from nature is an artist working in a dense forest who might experience becoming-forest by engaging deeply with the ecosystem—not by trying to replicate or represent the forest in their art but by attuning to its sounds, textures, and rhythms. This experience might involve letting the forest's patterns and energies influence their creative process, forming a connection that blurs the boundary between humans and nature. It's not about becoming a literal tree but entering a relational state where the human and the forest co-create meaning.

Deterritorialization: This term refers to breaking free from a structure, whether social, cultural, geographical or conceptual. Such change may happen through *ruptures*—symbol/meaning-laden breaks or disruptions—or *a-signifying ruptures*—breaks or changes in direction that only alter direction. Deterritorialization is usually brief, as reterritorialization is inevitable. Deleuze and Guattari (1987) labelled this an operation of a line of flight whereby "they change in nature and connect with other rhizomes" (p. 30). For example, deterritorialization in a forest is the spread of invasive plant species that disrupt the native ecosystem. These invasive species often outcompete native trees for resources like sunlight and nutrients, changing the structure and function of the forest ecosystem. In my research, I deterritorialized physically from Canada to Africa, from school to school, and between pedagogical frameworks.

Lines of flight: These are pathways for creative transformation, resistance, and the possibility of constructing new ways of thinking, living, or being. They break from existing structures. *Lines of flight* can happen at any time but are accelerated by ruptures. Deleuze and Guattari (1987) wrote that there is "nothing imaginary, nothing symbolic, about a line of flight" (p. 225) and that they "never consist in running away from the world but rather in causing runoffs, as when you drill a hole in a pipe" (p. 225). An example from nature is the migration of a population of butterflies as they move from their traditional habitat to new regions with more

favourable conditions, they are enacting a "line of flight." The migration disrupts the former territorial boundaries of the species, creating new dynamics in ecosystems and potentially leading to new evolutionary pathways. In my research, some ruptures were of necessity, and some were by choice. At the time, the direction of the line of flight was not always intentional, but reflectively, each, like a plant's rhizomes, was strategic.

Plateaus: These are horizontal, non-stationary regions of movement and sustained growth. There may be many plateaus where sustained change happens in parallel. These areas of growth may interconnect. Deleuze and Guattari (1987) defined plateaus as "a continuous, self-vibrating region of intensities whose development avoids any orientation toward a culmination point or external end" (p. 43). An example from nature is the behaviour of a river. A river is constantly shifting its course, eroding its banks, and depositing new material downstream. This ongoing activity of movement and change is a natural example of a plateau in the sense that it's not a fixed state but an active, transformative process. My research focuses on my plateaus, the times and places with "vibrating regions of intensities" (Deleuze & Guattari, 1987, p. 43) in each part of my development. Between plateaus, lines of flight—or inter-plateaus—emerge in a rhizomatic manner, precipitated by ruptures. Within a plateau, or intra-plateaus, my experience suggests a strategic blend of rhizomatic and sequential movements, much like the metamorphosis of a caterpillar or the progression through grade levels in school.

Deleuze and Guattari's concept of *becoming*

As presented in A Thousand Plateaus (1987), Deleuze and Guattari's concept of *becoming* challenges static identities and fixed categories. Rooted in their broader philosophy of *desire*, becoming is not about imitation or transformation into something else, but rather a dynamic process of connection and mutual change. Desire, for them, is not a lack or a need, but a productive force that drives assemblages—temporary alignments of entities that co-create one another.

A central metaphor they use to illustrate becoming is the relationship between the wasp and the orchid. The orchid produces a structure mimicking the female wasp, attracting the insect and facilitating pollination. But this interaction is more than mimicry; it forms a symbiotic assemblage where both wasp and orchid are transformed through their encounter. The orchid becomes-wasp as it expresses itself through the wasp's desire, and the wasp becomes-orchid by participating in the orchid's reproductive process. Neither entirely becomes the other, but both are altered in the process—a hallmark of becoming as a relational and creative force.

Deleuze and Guattari's (1987) philosophy also introduces the ideas of deterritorialization and reterritorialization, which describe how change occurs. Deterritorialization involves breaking away from established structures or norms, while reterritorialization refers to creating new forms or systems in response to these ruptures. They also propose rhizomatic thinking, inspired by the structure of rhizomes, which emphasizes decentralization, interconnectedness, and adaptability. Rhizomatic thinking encourages a view of knowledge and existence that is non-linear, unpredictable, and open to constant reconfiguration. Having established the concept of becoming, it is now important to explore how this idea can be applied to the field of education, transforming traditional teaching models into dynamic, evolving processes.

Application of *becoming* to education

In nature-inspired pedagogies, the concept of *becoming* resonates deeply, particularly when understood through Deleuze and Guattari's (1987) framing of desire as a generative force. Desire and attraction—whether toward a natural phenomenon, a question, or a way of being—mark the beginning of a transformative process. Just as the wasp and the orchid co-create each other through their encounter, the teacher, learner, and natural world also participate in an assemblage where all have equal agency. Learning becomes a mutual act of becoming: the student is drawn to the vitality of the natural world; the unfolding inquiry reshapes the teacher and nature itself becomes pedagogical through the attention it receives. This triadic relationship resists hierarchy and instead embraces a co-evolutionary dynamic, where learning is not transmitted but generated through interconnection and shared transformation. Deleuze and Guattari's philosophy (Semetsky, 2008) redefines education as a dynamic and creative process. This approach challenges traditional education models, which often prioritize conformity, standardization, and measurable outcomes. Instead, education is seen as a process that fosters creativity, exploration, and new possibilities. In the context of education, rhizomatic learning is a key concept. Rhizomatic learning encourages students to follow non-linear pathways, breaking traditional disciplinary boundaries and promoting interdisciplinary inquiry. This approach allows for a more holistic and interconnected view of knowledge that mirrors the complexity of real-world problems. In this sense, education becomes an open field of possibility where students can engage with ideas in a flexible, exploratory manner.

Deleuze and Guattari (Semetsky, 2008) also argue that education is inherently political. It operates on both the micro level—through individual interactions—and the macro level—through the societal structures that shape knowledge and learning. Within this framework, education becomes a space for resistance, where students and educators can challenge and subvert dominant ideologies, creating new spaces for thought and action. Their philosophy prioritizes creativity and experimentation over rote learning, encouraging educators and students to embrace uncertainty and explore uncharted territories of knowledge and self-expression.

One of their central arguments is that education should not merely prepare students for a predetermined future but instead create the conditions for the emergence of new possibilities. Education should be about fostering the capacity for creative and adaptive thinking, equipping students to navigate and shape an unpredictable world. They also highlight the concept of deterritorialization in learning, where education becomes a site of breaking free from rigid structures. In this context, students and teachers reimagine what knowledge is and how it can be applied. This process of reterritorialization—creating new forms of knowledge and practice—is integral to the philosophy, as it encourages continual reinvention within educational systems. They emphasize the importance of non-hierarchical structures in learning. By adopting a rhizomatic model, education becomes decentralized and interconnected, resisting traditional top-down systems of knowledge transmission. In this model, learners co-construct knowledge through collaboration and mutual influence, rather than having it dictated by a single authority.

Implications for contemporary education

Deleuze and Guattari (Semetsky, 2008) offered profound insights into contemporary education. Their philosophical stances support a vision of education that breaks away from

traditional models and creates a dynamic, inclusive, and politically engaged learning environment. One of the major implications is the potential for breaking down disciplinary silos. Rhizomatic learning promotes interdisciplinary approaches, reflecting the complexity of real-world problems, allowing students to approach issues from multiple perspectives and think more holistically about solutions. Their approach encourages educators to develop environments that promote creativity and innovation. By valuing experimentation and becoming, educators can provide spaces where students are free to explore new ideas and create original solutions. This shift from a focus on rote memorization to creative thinking allows education to be a space of transformation and invention.

The empowerment of critical thought is another important aspect of Deleuze and Guattari's educational framework. Students are encouraged to challenge dominant ideologies and envision alternative futures. This approach encourages a mindset of continuous transformation, where students are not merely passive recipients of knowledge but active agents of change who can resist oppressive systems and work toward more equitable futures. Understanding the implications of Deleuze and Guattari's philosophy for contemporary education requires a comparison with existing pedagogical traditions, such as Neo-Liberal and Critical Pedagogy, to highlight the unique contributions and challenges of their approach.

Comparison with Neo-Liberal and Critical Pedagogical traditions

Deleuze and Guattari's (1987) philosophy contrasts neo-liberal and critical pedagogical frameworks. Neo-liberal education, which dominates many contemporary educational systems, prioritizes efficiency, standardization, and market-driven outcomes. In such systems, education is often reduced to metrics such as test scores and employability, with a focus on preparing students for the job market. In contrast, Deleuze and Guattari (1987) rejected the commodification of education. They argued that learning should not be reduced to a transactional process but should instead embrace creativity, relationality, and the transformative potential of knowledge. Their model values process over outcomes and celebrates complexity and diversity over uniformity.

Deleuze and Guattari's (1987) ideas share some common ground with critical pedagogy, especially in their commitment to social transformation. Critical pedagogy, influenced by thinkers like Paulo Freire (1970), focuses on empowerment, social justice, and the development of critical consciousness. However, while critical pedagogy emphasizes dialogue and specific political goals, Deleuze and Guattari's (1987) approach is more open-ended. They emphasized the importance of creating conditions for new possibilities without prescribing a particular political agenda. Their focus is on non-linear and open-ended processes of becoming, as opposed to the more structured and goal-oriented methods of critical pedagogy. Moreover, the rhizomatic model they advocated promotes decentralization and multiplicity, which contrasts with the dialogical methods often found in critical pedagogy, which typically prioritize structured discussions and collective action.

Critique and practical challenges of Deleuze and Guattari's concepts

Despite the radical appeal of Deleuze and Guattari's (1987) proposal, it presents challenges for practical implementation. The abstract nature of their philosophy raises questions about how it can be translated into concrete educational practices. For instance, how can educators balance the demand for structure and accountability with the call for creativity,

fluidity, and openness? How can these ideas be adapted to diverse educational contexts, particularly in systems where standardized testing and performance metrics dominate? While these challenges are significant, the text's radical reimagining of education offers valuable insights for rethinking contemporary educational practices. It encourages educators to move beyond conventional frameworks and opens new possibilities for dynamic, inclusive, and politically engaged learning environments. Despite the challenges of implementing Deleuze and Guattari's concepts, their philosophical framework aligns well with autoethnographic narrative inquiry. This connection offers an ideal structure for exploring dynamic and interconnected experiences.

Deleuze and Guattari connecting with Autoethnographic Narrative Inquiry

Deleuze and Guattari's conceptual framework, particularly their notions of becoming and rhizomatic thinking, aligns with autoethnographic narrative inquiry, offering an ideal structure for exploring dynamic and interconnected experiences. Their philosophical emphasis on fluidity and relationality reflects the emergent, lived nature of narratives, where I can be subject and participant in meaning-making processes. Within the context of nature-inspired pedagogies, I am part of an evolving assemblage of relationships with the environment, culture, and community. Narrative inquiry, similarly, foregrounds the unfolding and co-constructed nature of stories, making Deleuze and Guattari's rhizomatic thinking particularly resonant. By rejecting hierarchical structures in favour of interconnected and non-linear growth, this framework allows me to embrace the fragmented, exploratory, and layered realities of experiences. In the next chapter, I examine several qualitative projects that effectively incorporate Deleuze and Guattari's concepts into their autoethnographic narrative inquiry, showcasing the practical application and potential of this theoretical framework in research. Drawing on Deleuze and Guattari's philosophical framework, which emphasizes fluidity, transformation, and relationality, I find a compelling parallel in the metaphor of the caterpillar transforming into a butterfly. This metaphor encapsulates my journey as a nature-inspired teacher, illustrating the ongoing process of becoming and the dynamic interactions that shape my pedagogical approach.

Developing: Butterfly metamorphosis and nature-inspired teaching[2]

In *Narrative Inquiry*, Clandinin and Connelly (2000) highlighted metaphors used in narrative inquiry research: a parade (p.16), soup (p. 155), a lathe (p. 26), and a journey (p. 157) "in an attempt to establish common ground between ourselves and our readers" (p. 26). Kathleen Absolon used a plant with roots, stems, and petals in *Kaandossiwin: How We Come to Know* (2011) to visually represent her research. In my case, I connected with the metamorphosis of a caterpillar into a butterfly as it mirrored my journey of becoming a nature-inspired teacher. This cycle begins with the seeds planted by previous generations, which I identify as my family structure and upbringing. During my larval stage, I explored various jobs and educational pursuits, experiencing emotional and intellectual growth. I wandered nomadically and aimlessly at times, unaware that I was meant to teach. My chrysalis phase emerged during my academic and early teaching years when my thoughts and philosophies began to solidify. Finally, eclosion marked my transformation as I designed and launched my alternative, nature-inspired high

[2] All scientific caterpillar to butterfly references are paraphrased from Butterfly Food Chain: Ecology & Life Cycles. https://butterflyboogie.com/butterfly-food-chain-ecology-life-cycles/

school. I trace this trajectory to the development of nature-inspired teaching and learning environments.

The butterfly's life cycle often appears as a linear process: an egg hatches into a caterpillar, forms a chrysalis, and eventually emerges as a butterfly. However, this seemingly predictable sequence conceals the complexity and adaptability of the process. Viewing the life cycle through the lens of rhizomatic development reveals a dynamic, interconnected journey shaped by external factors like temperature, food availability, and predation. This perspective highlights development as fluid and deeply tied to its ecosystem. Similarly, the development of a nature-inspired educator stems from diverse, interrelated factors. For instance, a butterfly's role in pollination links it to the plants it visits, contributing to the broader ecological cycle. Likewise, a teacher's journey reflects experiences, interactions, and relationships—with students, environments, and past events. The caterpillar's feeding phase, critical for building energy for metamorphosis, parallels the formative experiences that laid the foundation for my evolving identity as a nature-inspired educator. Each stage of a butterfly's life—egg, caterpillar, chrysalis, and butterfly—holds equal significance, just as each of my life experiences, from my religious upbringing to my travels and teaching, shaped me as an educator. From a linear perspective, a butterfly's emergence from the chrysalis might seem like the final stage of its development. However, in rhizomatic terms, it initiates a new phase that continues to evolve. As the butterfly pollinates plants and contributes to the ecosystem, it engages in ongoing cycles of transformation. Similarly, my development as a nature-inspired teacher remains an evolving process. Daily interactions with students and the environment continually shape my pedagogical practices and philosophies. Just as the butterfly influences its ecosystem, my work as an educator contributes to the cycle of nature-inspired teacher development, especially as I witness former students becoming teachers. The butterfly metaphor isn't about a simple, linear transformation, but about mutual becoming. Just as the butterfly and flower co-constitute each other, nature and humans are in a constant state of entanglement. It's not that we pass through nature unchanged; rather, nature flows into us — through the air we breathe, the scents that trigger memory, the textures underfoot that inform our sense of place. Simultaneously, we impress ourselves onto nature — through our movements, our presence, and even the ways we name and narrate the natural world. This bi-directional movement dissolves the boundaries between "self" and "environment," showing that becoming is not a solitary act but a dynamic, reciprocal process.

Rhizomatic development frames transformation as an ongoing process influenced by internal forces and external conditions. Reflective practice, central to the theory of becoming, fosters the continual growth of the teacher, who, in turn, guides students through their own processes of learning and change. As I grow, my methods and interactions with learners evolve. The transformations I experience through engagement with nature and students demonstrate how past experiences inform my teaching and understanding of the world. This rhizomatic approach embraces a holistic, experiential pedagogy that makes learning immersive and embodied. It encourages hands-on engagement that connects learners physically, emotionally, and intellectually with their environment and peers. Students fully immerse themselves by exploring nature, interacting with materials, and participating in sensory activities. In this model, there are no fixed steps or identities. Just as the butterfly's metamorphosis is dynamic and interconnected, the journey of becoming a nature-inspired educator unfolds through continuous interaction with the environment, learners, and a network of transformative influences. In this dissertation, I use the metaphor of transformation to illustrate my development as a nature-inspired teacher, my

relationship with my students, the evolution of my school, and to frame adolescent nature narratives.

Drawing on Deleuze and Guattari's philosophical framework and the metaphor of the caterpillar transforming into a butterfly, my dissertation intentionally shifts between two forms: sometimes following what appears to be a linear, sequential structure, and other times adopting a more rhizomatic approach. This interplay includes repetition and unresolved connections, or "dangling rhizomes," such as the tension I find between my religious upbringing and the new insights gained through my current experiences. I engage with the metaphor, particularly when highlighting processes of transformation, such as my development as a nature-inspired teacher and the changes I interpret in adolescents' nature narratives. In the final chapter, I explore how these moments of transformation—these *plateaus*—are interconnected through *lines of flight*, forming a rhizomatic network that traces my ongoing *becoming* as a nature-inspired teacher. The metaphor of butterfly metamorphosis beautifully encapsulates my journey as a nature-inspired teacher. To further illustrate this transformation, I will now locate myself within the research, detailing the significant life events that have shaped my pedagogical approach.

Locating Myself in the Research

Below is an overview of my development as a nature-inspired teacher. It introduces nature as an influence in my life. In the chapters 3 and 4, I expand on these significant life events and others to describe in detail the transformative impact of each of these experiences. Each of these *plateaus* significantly informs the development of my nature-inspired pedagogical approach.

Egg: DNA with potential

The journey of a butterfly begins with the egg. During this stage, the egg undergoes a process of embryonic development. The embryo grows and develops inside the egg, eventually preparing to emerge as a larva. This stage can last from a few days to several weeks, depending on environmental conditions such as temperature and humidity. The location of the egg, its parentage, and the ecosystem shape a caterpillar's evolution. Similarly, my development is influenced by my DNA, my family structure and home environment, and the circumstances surrounding my birth.

Born in Montréal, I am a third-generation Canadian with British, Irish, and Scottish ancestry. My father, Clive Watts, was a carpenter for the Canadian National Railway, while my mother, Noreen House, was a registered nursing technician from rural Ontario. Their union, forged at a Christian summer camp, resulted in a family of seven children, of which I am the third eldest. Growing up, I attended public schools in Montréal and engaged deeply in church activities, including communion, Sunday school, gospel meetings, Bible studies, and prayer gatherings. My family's affiliation with the Exclusive Brethren denomination, an offshoot of the Plymouth Brethren, played a significant role in shaping my understanding of the world. Pivotal events marked my childhood journey. I skipped sixth grade due to academic advancement, but this achievement was overshadowed by the tragic loss of one of my younger brothers. In response, my parents dedicated themselves to supporting underprivileged youth through gym nights and a summer camp in the Laurentian Mountains. Another profound loss occurred when my mother passed away from cancer when I was 16, followed shortly by my father's heart

attack. These experiences spurred a period of self-exploration and growth. I worked and travelled extensively across North America, the Caribbean, Europe, and East Africa. Living in remote communities, including a Cree reserve in Moose Factory and the Inuit town of Kuujjuaq, broadened my perspective and laid the foundation for what would evolve into my nature-inspired pedagogical approach.

Larva (caterpillar): My first experiences with teaching

Once the egg hatches, the larva emerges as a caterpillar. This stage is characterized by rapid growth and focuses primarily on feeding and accumulating energy. Caterpillars are voracious eaters; they consume large quantities of leaves and other plant material, which provide the nutrients required for their growth. As the caterpillar grows, it undergoes a series of moults, shedding its old skin to accommodate its expanding body. Each moult results in a larger and more developed caterpillar. This growth phase is crucial, as it prepares the caterpillar for the next stage of metamorphosis. Caterpillars often have vibrant colours and patterns that serve as camouflage or deterrents against predators. Some species even exhibit defensive behaviours or structures, such as spines or toxins, to protect themselves during this vulnerable stage. In my situation, this was a pivotal period of academic growth and cultural enrichment, where I not only gained knowledge but also developed a deeper understanding of myself, values, and the world around me. It was at this time that I first became aware that my pedagogical approach was unconventional and diverged from traditional methods, as I began to integrate holistic and immersive learning, nature-inspired principles, and a focus on personal growth into my teaching practice. At 21, I embarked on my studies in English literature at Concordia University. After completing my degree, I married my high school sweetheart, and we had two children. Early in our marriage, we lived in Ghana for two years, where I taught at an international school. This experience solidified my passion for education and teaching. Upon returning to Montréal, I focused on working with marginalized students, which eventually led me to found Education Plus High School. It became clear that my teaching philosophy was evolving—shaped by metamorphic and rhizomatic processes, mirroring natural models of growth. Currently, I serve as both a teacher and principal at Education Plus, where my professional journey continues to unfold. My experience is marked by significant plateaus, ruptures, and moments of breakthrough, each contributing to my growth and evolution as an educator.

Pupa (chrysalis): My university training

Once the caterpillar reaches a sufficient size and maturity, it enters the pupa stage, also known as the chrysalis. This phase marks a dramatic transformation, where the caterpillar undergoes a profound reorganization of its body. Inside the chrysalis, the caterpillar's body undergoes a complex process of metamorphosis. This operation involves the breakdown of the caterpillar's tissues and the reorganization into the structures of an adult. It is a period of intense change where the caterpillar's body essentially restructures into a butterfly. My cocooning experience happened in the context of university classrooms. Exposure to pedagogical theories illuminated for me what I was already doing in my classroom and offered new pathways to explore. In my pursuit of deeper knowledge, I earned a bachelor's and then a master's degree in education, from Concordia and McGill, respectively. These degrees further refined my understanding of education and supported my commitment to ongoing professional growth and

more importantly, offered me peer-reviewed research that supported my emerging nature-inspired pedagogical approach.

Eclosion: Founding my school

The butterfly emerges when the chrysalis splits open in the final stage of metamorphosis over several hours. Initially, the butterfly's wings are soft and wet, making it vulnerable to predators until they harden, at which point it is ready to begin pollinating and mating in adulthood. My life experiences, coupled with my teaching career, led me to develop a nature-inspired pedagogical approach at Education Plus, leveraging Québec's educational flexibility to innovate while meeting provincial standards.

In contrast, becoming a nature-inspired teacher is an ongoing process and unlike the butterfly, my transformation is never complete. After thirty-four years of teaching, I find myself being moulded and remodelled as I spend time teaching, with students, and in nature. As I describe my development and transformation in this dissertation, I highlight, analyze, and interpret life events that impacted my journey towards developing pedagogical insights as a nature-inspired teacher. Like the butterfly, my educational path involves a process of pollination vis-à-vis future teachers, and students at my school.

The Context of my Research

My story spans 60 years, beginning in 1964, and analyzes my teaching experiences in Ghana, West Africa, and Montréal, Canada. Most of my teaching experiences and evolution as a nature-inspired educator flow from my time teaching at Education Plus High School, the private, alternative high school I founded in 1995. This research is autoethnographic, and I include a chapter featuring stories collected from staff at two summer camps in Québec. As a teacher, understanding students' perceptions is essential for effectiveness, and these narratives offer valuable insights into the broader educational experience. Additional narratives play a crucial role in enhancing autoethnography by providing multiple layers of context, perspective, and depth to the research. According to Ellis et al. (2011), autoethnography is inherently a narrative method, blending personal experience with cultural analysis. Including additional narratives allows researchers to situate their personal experiences within broader social, political, and historical contexts, enriching the findings. As Denzin (2014) suggested, these supplementary narratives offer opportunities for reflexivity, developing a deeper understanding of the researcher's positionality and the influence of external factors on their experiences. By incorporating diverse voices and perspectives, autoethnography becomes a more collaborative and dialogical process, as noted by Anderson (2006), who highlighted the importance of layered storytelling to draw connections between the individual and the collective. The narratives I have included strengthen the rigour and relevance of my autoethnographic research, contributing to a more nuanced and comprehensive analysis of the personal and cultural dimensions of becoming a nature-inspired teacher. My students' acceptance of and adaptation to a different way of learning, among other factors, such as the environments we share, the challenges we encounter, and the growth that emerges from holistic, immersive, nature-inspired education, also influence my evolution as a nature-inspired educator. I discuss this more in my methodology chapter.

The epistemological assumption of this research is that knowledge is constructed through experiences and social discourse, as Creswell and Creswell (2018) outlined. Qualitative research

is particularly useful in offering a snapshot of a particular moment in time and space. Merriam (1991) further argued that reality is not a fixed phenomenon that can be easily observed and measured; instead, it is multi-dimensional and constantly evolving. Autoethnographic narrative inquiry (Ellis et al., 2010; Golba, 2022) allows me to record and analyze my experiences and develop new interpretations and meanings. Additionally, analysis of the narratives collected from adolescents' essays produces a new understanding of adolescent experiences and the role of nature in their learning. Having both sources reinforces the theory I build of Nature-inspired Pedagogy of Becoming, which suggests that in a nature-inspired pedagogy, teacher and learner are continually engaged. Having established the context of my research and its significance in exploring nature-inspired pedagogies, it is essential to define key concepts such as Nature and Land. These definitions will provide a foundational understanding for the subsequent discussions and analyses.

Defining Land and Nature

Land: In many Indigenous writings and research, "Land" conveys "all creation" (Absolon, 2011, p. 57). It embodies a connection with the sentient world, guiding Indigenous systems of relationship-based knowledge development (Fast & Kovach, 2019, p. 23). Beyond its physical and tangible attributes, Land holds spiritual, emotional, and intellectual dimensions (Bang et al., 2014, p. 37). Indigenous worldviews often embrace both urban and rural environments, seeing them as interconnected rather than oppositional (McCoy et al., 2016). When I use the term "Land," I reference this broader Indigenous understanding. Recognizing these paradigms is crucial to comprehending my journey as an individual and teacher. Through my research, I explore transformative events—plateaus—that have shaped my evolving perspectives on pedagogy.

Nature: Central to my research is the often-contested concept of nature. Before delving into nature-inspired teaching, it is essential to clarify how I use this term. Nature is an evolving and abstract idea, interpreted differently across science, politics, conservation, and daily life. It is widely regarded as a panchreston—a term so broad and variable that it loses theoretical precision (Zimmerman & Cuddington, 2007). Discussions about protecting what I call nature shift depending on context. Scientific knowledge of nature remains incomplete, relying on mental representations and theoretical constructs that require clear definitions (Demeritt, 2002). Thus, nature is not a fixed reality but a fluid, context-dependent concept.

A Judeo-Christian perspective traditionally views nature as all that God created, excluding humans, who are believed to transcend nature by being made in God's image (Callicott & Ames, 1989). In this worldview, humans are instructed to subdue and rule over nature: "make the earth full and be masters of it; be rulers over [...] every living thing moving on the earth [...]: they will be for your food" (Genesis 1:28). Furthermore, nature is seen as ultimately transient, destined for destruction by fire, with only a remnant of believers surviving (2 Peter 3:10). Conservation and stewardship of nature become secondary to its exploitation as a resource. I delve deeper into this when discussing the influence of Christianity on my upbringing and my shift toward an Indigenous worldview that acknowledges our interconnectedness with nature.

In August 2019, I stood on a sandy promontory in Skagen, Denmark, where the Baltic and North Seas converge. The collision of these waters sent fountains of salty spray into the air.

At the atomic level, both seas contain hydrogen, oxygen, sodium chloride, magnesium chloride, and trace minerals, underscoring their shared origins. Under a microscope, their molecular composition appears identical, yet to the naked eye, their distinct shades of turquoise reflect their separate journeys. As they meet, their differing salt densities dictate their movements—colliding, swirling, parting—each molecule touching and altering the next, forming new patterns and currents. The merging of these waters creates a fleeting balance of chaos and harmony, where boundaries blur and identities shift. This metaphor captures the dynamic relationship between humans and nature. Just as the seas do not remain unchanged upon contact, neither do humans or nature. Their interactions are not passive; they generate transformation. Human actions alter ecosystems, while the rhythms of nature shape human behaviour, culture, and thought. This relationship is a reciprocal process of becoming—fluid, unfixed, and emergent. Rather than viewing humans as separate from nature, I embrace a dialectical understanding, recognizing both our integration within and our reflective stance toward the natural world. This allows space for Freire's (1970) concept of humans as "beings of praxis" (p. 98)—those who theorize, understand, and act—while acknowledging the immersive, often messy process of becoming.

What follows is an exploration of how these intertwined ecological and philosophical threads inform my approach to nature-inspired teaching. Many scientists, including James Hutton, Charles Darwin, and Carl Sagan, have emphasized that non-human nature existed long before humans emerged. The relationship between human and non-human nature is complex, marked by both similarities and distinctions. As part of the natural world, humans evolve alongside other organisms, shaped by the same ecological forces that govern all life. This interdependence is evident in our reliance on natural resources—food, water, air, and shelter—and our eventual return to the ecosystem as food, water, and CO2 for non-human nature.

Importantly, my research also considers the perspectives of the adolescent participants in my study. Most were raised within a Western worldview that delineates nature and not-nature as separate realms. Their narratives reveal how time spent in each space feels distinct, how physical experiences in nature carry unique qualities, and how relationships with the Transcendent—whether God or Nature—are often shaped by their surroundings.

While determining whether nature includes or excludes humans is not the focus of my research, I use the metaphor of converging seas to illuminate my perspective. Humans and nature, like these bodies of water, meet and transform one another through constant interaction. This reciprocal relationship fosters a continuous unfolding of new forms and understandings. My journey toward nature-inspired teaching is not about separation or dominance but about entanglement, transformation, and shared growth. I root my practice in this ever-evolving interplay, inviting both myself and my students to embrace the fluid, emergent relationship we share with the natural world.

Connection and dialogue between part of this research

This thesis unfolds as a series of interconnected becomings, shaped by Deleuze and Guattari’s philosophy and grounded in the metaphor of the caterpillar’s metamorphosis. Each chapter emerges from and returns to this central idea, forming a rhizomatic structure rather than a linear progression. Chapter 1 situates my own pedagogical journey through an auto-ethnographic lens, setting the stage for the entanglements between my experiences, those of adolescents, and the more-than-human world. This personal grounding raises questions about the nature of teaching and learning, which are explored further in Chapter 2 through a review of relevant

literature on nature-based and land-based pedagogies. Here, I develop the theoretical scaffold of becoming, drawing from Deleuze and Guattari to reconceptualize teaching and pedagogy as a dynamic, relational process. These theoretical insights directly shape the approach I take in Chapter 3, where I describe the methodology and methods used to interpret both my own narratives and those shared by adolescent summer-camp counsellors. The methodology, in turn, informs the interpretive lens through which I explore my evolving identity as a nature-inspired teacher in Chapter 4, illustrating how teacher, student, and nature continuously shift roles in a symbiotic pedagogy. Building on this, Chapter 5 deepens the inquiry through adolescent narratives that offer textured accounts of nature-based experiences—not as data to be dissected, but as moments of learning, transformation, and reciprocal teaching. These stories reflect and extend the relational insights developed in previous chapters. The final chapter draws together the threads of theory, narrative, and reflection to propose a nature-inspired pedagogy of becoming—one in which authority is de-centralized and redistributed through shared decision-making, flexible roles, and peer-to-peer collaboration. This pedagogy envisions teachers, students, and nature evolving together—at times sequentially, at times rhizomatically—within holistic, immersive, unpredictable, and relational learning environments. Wonder and curiosity, rather than definitive answers, drive inquiry, while an eco-pedagogical stance encourages stewardship and sustainable living. Rather than existing as discrete parts, each chapter informs and reshapes the next, contributing to an ongoing, emergent dialogue that enacts the *becoming* it describes.

Chapter Summary

Having introduced the context and background for this research and my role within it, I next present a review of the literature underpinning this study. In the following chapter, I explore key theories, concepts, and studies relevant to nature-inspired education, as well as the ways in which Deleuze and Guattari's (1987) philosophical framework has been engaged by others. By critically analyzing existing scholarship, I aim to establish a foundation for understanding the intersections of pedagogy, nature, and personal transformation, thereby setting the stage for the methodological framework discussed in the subsequent chapter. I also address a gap in the research by conducting an autoethnographical narrative inquiry that thinks through Deleuze and Guattari's concepts alongside a metamorphosis metaphor to explore the processes of becoming a nature-inspired teacher.

CHAPTER 2: Literature Review
The Evolution of a Nature-based Teacher

The literature on nature-based education reveals a dynamic interplay between pedagogical theory, evolving classroom practices, and historical influences, all shaping the journey of educators pursuing nature-based teaching. In examining this evolution, I draw connections between established research and my 34-year teaching experience, to enrich my understanding of nature-based pedagogies and identify areas where further exploration could advance the field.

A significant body of research (Adebukola et al., 2024; Contrino et al., 2024; Azevedo et al. 2004) supports the importance of creating learning environments that are adaptive and conducive to students' diverse needs. For educators, maximizing teaching impact requires thoughtful adaptation to student abilities within environments that encourage engagement and growth. Scholars in nature-based education, for instance, have increasingly recognized Indigenous methodologies, drawing on traditional unwritten practices and oral traditions as well as contemporary academic contributions (Cajete, 1994; Wildcat et al., 2014; Absolon, 2008; Wilson, 2008). Many Indigenous perspectives on Land-based teaching show ways to encourage student connection to nature, informing my ongoing pedagogical practices, especially in the Canadian context where these methodologies resonate with local environments and histories.

Indigenous contributions form a cornerstone of the current discourse on nature-based education, emphasizing learning that is relational and place-based. Later in this research, I write about Land-based pedagogies and my encounters with Indigenous life and epistemologies in Canada. Examining the theoretical underpinnings of nature-based education reveals the profound influence of figures such as Paulo Freire, whose work on eco-pedagogy advocates for an educational model that is socially just and ecologically centered. Freire's *Pedagogy of the Oppressed* (1984) proposed an eco-centric approach that requires critical thinking and social awareness, concepts which inform my teaching philosophy.

The landscape of nature-based teaching is also shaped by shifting educational philosophies, highlighting challenges educators face operating within rigid, standardized systems. In response, contemporary research examines methods that help teachers transcend these constraints, particularly when working with students diagnosed with autism. In my practice, teaching students on the autism spectrum within a nature-based framework has involved adapting instructional methods to meet diverse sensory and cognitive needs, a task made more rewarding and effective by nature's inherent capacity to engage multiple senses.

Components Supporting Learning Environments

Effective learning environments are widely recognized as engaging spaces that facilitate active participation and collaborative interactions. My role in developing these dynamics involves creating opportunities for students to explore and question, nurturing their intellectual curiosity and social awareness (Pianta, 1999). Experiential learning, as advocated by scholars such as Vygotsky (1978) and Mezirow (1997), aligns with nature-based practices by emphasizing environments that accommodate individual learning differences and enhance group dynamics, critical thinking, and sensory engagement. The rise of experiential and environmental education in the 1960s and 1970s provided a cultural and ideological foundation for nature-based education. Environmental awareness movements, propelled by works like Rachel Carson's *Silent*

Spring (1962), instigated broader discussions about ecology and education. During this period, outdoor learning gained traction as teachers adopted inquiry-driven approaches that encouraged students to engage directly with their natural surroundings (Dyment & Bell, 2008). Miller and Twum (2017) asserted that the benefits of place-based education, as highlighted in the literature and affirmed by teachers, underscore its importance, building on the work of David Sobel (1996), place-based education has solidified the role of local environments in learning, shifting the perspective of nature from a mere backdrop to an active, integral component of the curriculum. Yet, the integration of environmental education into traditional school systems has faced challenges. In Québec, for example, curriculum mandates on environmental education have largely adhered to conventional textbook-driven approaches, foregoing opportunities to leverage outdoor learning as a core pedagogical tool. These limitations underscore the tension between nature-based and standardized educational models, with the former advocating for immersive, experiential learning that extends beyond classroom walls. My experiences in Montréal and at my school, Education Plus High School affirm that students thrive when learning extends into the natural world. Students often produce more detailed, sensory-rich journal entries when writing outdoors, suggesting that nature encourages greater reflection and creativity.

Outdoor learning enables and supports a paradigm shift from banking methods of education, which deposit knowledge, to more dialogic and participatory approaches (Shor, 1986). Freire (1984) described traditional education as,

> The "banking" concept of education, in which the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits. They do, it is true, have the opportunity to become collectors or cataloguers of the things they store. But in the last analysis, it is the people themselves who are filed away through the lack of creativity, transformation, and knowledge in this (at best) misguided system. (Friere, 1984, p. 72)

Taking inspiration from ancient Greek peripatetic schools and the Socratic method, I incorporate outdoor learning by encouraging students to explore questions and draw insights from their surroundings. The natural environment thus becomes a catalyst for inquiry, enhancing traditional lesson structures with opportunities for unexpected discovery. Such experiential learning encourages curiosity and resilience, as students confront the unpredictability of outdoor settings and engage in problem-solving within real-world contexts.

Studies by Bunting (1989) highlighted the physical and psychological benefits of active outdoor engagement, promoting a holistic approach to student health and wellness that indoor settings cannot replicate. Pretty et al. (2006) wrote, "Our findings suggest that exercise in pleasant environments may have a greater effect than exercise alone on blood pressure, an important measure of cardiovascular health, and on measures relevant to mental health" (p.334). In art, students are inspired to recreate natural forms, while language classes benefit from sensory-based descriptive assignments that capture the experience of nature. Broda (2007) found that in science and math classes, natural applications in the outdoors provide students with hands-on experience in calculating, observing, and analyzing.

All learning is necessarily experiential. However, the rise of concepts around experiential education not only align with evolving institutional understandings of student learning but also reflect the unique challenges posed by an increasingly digital and high-stress environment. Contemporary nature-based education advocates, such as James and Williams (2017), noted that

outdoor experiences reduce classroom management issues while enhancing student engagement and motivation. They wrote,

> As teachers, we need to strive to immerse our students in concept learning of this nature whether in the classroom or in the field. Outdoor education that effectively bridges classroom and field learning is also beneficial. Pairing dynamic in-class learning with authentic contextualized application of scientific concepts is extremely valuable in engaging the most apathetic and unmotivated students in minds-on learning. (p.71)

Their research confirms that nature can offer a versatile and multi-dimensional learning environment that cultivates autonomy, critical thinking, and personal growth.

Land-Based Pedagogies and Indigenous Paradigms

Land-based pedagogies, deeply rooted in Indigenous paradigms, emphasize the importance of learning directly from/with and in/on the Land. These approaches are informed by Indigenous research methods, epistemologies, and ontologies, which view Land as an active teacher. Engaging in outdoor education reveals diverse ways to learn, often extending beyond curriculum guidelines. Students consistently report learning more holistically in natural settings, a trend supported by Vella-Brodrick and Gilowska's (2022) systematic review. Their study of 12 research projects across Europe, the USA, and Canada found a positive relationship between time spent in nature and "enhanced cognitive functioning" (p. 1217). In this context, teachers act as facilitators, guiding students toward self-led discovery, while the true teacher becomes the Land, encompassing elements like water, air, and all of nature.

Education professor Raffan (1993) outlined four main components of Land-based learning: experiential, toponymic, narrative, and numinous. These principles enable students to explore the world using all their senses, developing a unique engagement that prompts activities like taking close-up photos of nature or noticing patterns like the Fibonacci sequence in pinecones. Such activities encourage students to shift from merely learning *about* the Land to learning *from* the Land. Land-Based Education, influenced by Indigenous approaches, further emphasizes the reciprocal relationship between people and Land, a theme prominent in Gregory Cajete's work. Cajete (1994) advocated for an educational approach that integrates ecological and cultural knowledge, bridging community learning with ecological education.

Absolon's (2010) work, *Kaandosswin: How We Come to Know*, challenges Western paradigms by presenting Indigenous methodologies as holistic and relational. Her research critiques the Western approach to knowledge, which often views learning as the accumulation of facts, and instead presents it as an interconnected process that respects relational accountability. Absolon argued that researchers must engage ethically with Indigenous communities, ensuring mutual benefit and respect. Her work advocates for decolonizing research methodologies, critiquing traditional methods that often overlook Indigenous perspectives. Absolon's contributions offer practical insights for educators on integrating Indigenous methodologies into their practice, emphasizing participatory research, storytelling, and community engagement, all of which are essential components of Land-based learning. Indigenous land-based learning, emphasizing the interconnectedness of people, land, and culture, fosters a deep respect for ecological systems and the knowledge passed down through generations. It is not merely an educational practice but a way of being, where students engage with the land to cultivate a sense

of belonging and responsibility. This holistic approach, rooted in ancestral wisdom, offers profound insights into sustainability, stewardship, and community. While Indigenous land-based learning offers a rich, culturally embedded model of environmental education, Western nature-based learning, though emerging from a different historical and philosophical context, shares common goals of fostering environmental awareness and personal growth. Drawing on principles of experiential learning, Western approaches focus on utilizing nature to enhance academic outcomes, well-being, and ecological literacy.

Nature-Based Pedagogies and Western Paradigms

The literature forming the foundations of nature-based education in Western contexts have been influenced by key educational theorists. Friedrich Froebel pioneered the idea of outdoor, active learning as essential for child development, viewing nature as a fundamental part of education (Strauch-Nelson, 2012). His ideas, though transformative, did not achieve widespread application in mainstream education, which remained focused on structured, indoor learning environments. John Dewey expanded on these concepts in the early 20th century, positioning nature as integral to experiential learning. Dewey's research laid the groundwork for nature-based education by encouraging students to engage actively with their surroundings (Dewey, 1938). David Sobel (1996) built upon Dewey's ideas, with Sobel emphasizing place-based education and advocating for ecological literacy. Together, these theories underscore the evolving role of nature-based educators, who now navigate the intersections of ecological, cultural, and educational imperatives.

Research in nature-based learning primarily focuses on early childhood, with settings like outdoor daycares and forest schools. Larimore (2016) found that most studies on outdoor science education focused on primary schools, while nature-based preschools dedicate substantial time to outdoor activities. Ayotte-Beaudet et al. (2017) wrote, "we presumed that we would find more studies that deal with the secondary level (high school). We suspect that the low number of studies reflect the limited use of outdoor teaching at these levels" (p. 5354). Though adolescent nature-based programs are rare, a few schools in Ontario have successfully integrated outdoor learning into high school curriculums, balancing standardized provincial requirements with immersive experiences that promote critical thinking and adaptability. These programs show the value of nature-based education, which emphasizes experiential learning and holistic growth over traditional, structured assessment methods. Some schools encounter the challenges of balancing curriculum requirements with the diverse needs of their students, whose unique life experiences inform how they interact with the natural world. Patchen et al. (2024) discussed several challenges to nature-based learning including "concerns about health and safety; teachers' lack of confidence in teaching outdoors; school schedules and curriculum requirements; shortages of time, resources and support; and wider changes within the education sector including rising student/staff ratios and greater focus on assessing learning outcomes" (p. 18). Nature-based learning develops individual learning paths, as students adapt to the unpredictability of natural environments. Traditional assessments often fail to capture these learning outcomes; instead, teachers can use qualitative methods like journaling, storytelling, and photojournalism to assess personal growth. For instance, students might be assessed not only on their ability to identify plant species but also on their demonstrated care for the environment, as reflected in their writing. Such assessments value learning as an ongoing process, allowing for emergent learning goals that arise through interaction with nature.

Examining Diverse Perspectives on Nature-based Pedagogies

Studies from varied cultural contexts underscore the sensory and cognitive benefits of nature-based learning. For instance, Kahriman-Pamuk and Ahi's (2019) study of a forest school in Turkey reveals how young students perceive the forest as a multi-functional space for learning, activity, and discovery. This finding aligns with Merleau-Ponty's (1968) theory, which views the body as central to experiencing the world, and is supported by Brown et al. (2016), who highlighted the interconnected roles of senses, emotions, and cognition in the learning process. Studies by Beery and Jørgenson (2018), Linzmayer et al. (2014), and James and Bixler (2008) further illustrated how tactile, sensory interactions with nature promote curiosity and discovery in ways that traditional classrooms cannot easily replicate.

Hooksum Outdoor School in British Columbia offers a model for integrating nature-based learning within specific Indigenous frameworks. Banavage's (2013) research on this setting highlighted non-academic, skill-based learning, providing a model that can be adapted to other educational contexts. Hooksum's offerings include CPR and waterfront safety with content and framework from the Lifesaving Society, and Place-based learning as described by Woodhouse and Knapp (2000). Despite the successes of nature-based learning, some researchers remain skeptical. Nicol (2014) and Ward-Smith et al. (2018) critiqued the assumption that nature-based education inherently fosters sustainable living or avoids colonial perspectives. However, with careful and respectful integration of Indigenous knowledge, as exemplified by schools in Indigenous communities in Kahnawake and Kanesatake near Montréal, students engage with the Land in a way that decolonizes their understanding and cultivates environmental stewardship. Both locations have schools recognized by the Ministry of Education of Québec that employ educators who teach the required curriculum and Indigenous language and culture courses.

Bridging Land-based and nature-based pedagogies

Land-based education, rooted in Indigenous knowledge, has emerged as a powerful paradigm that intertwines ecological awareness with cultural values. This approach, which gained prominence in the late 20th century, invites educators and students alike to become co-learners and stewards of ecological knowledge. Indigenous scholar, Gregory Cajete (1994) described Land-based education as "learning about life through participation and relationship in the community, including not only people, but plants, animals, and the whole of Nature" (p. 26). Scholars such as Wildcat et al. (2014) documented how Land-based education encourages students to develop reciprocal relationships with nature, promoting both ecological literacy and cultural resilience. According to Wildcat et al. (2014), students must move "from talking about the land within conventional classroom settings, to studying instances where we engage in conversations with the land and on the land in a physical, social and spiritual sense" (p. II). Land-based and nature-based approaches to learning agree that there must be a time when learners leave the classroom and become holistic, immersive students.

Indigenous knowledge provides invaluable insights into the relationship between people and the natural world, often described as "intimate and inseparable" (Takano, 2005, p. 475) and "spiritual" (Wilson, 2008, p. 86). Cree scholar and educator, Shawn Wilson (2008) posited that knowledge is relational, a concept that is integral to understanding Land-based pedagogy as a practice where knowledge creation occurs through connections with the Land, plants, animals,

and the cosmos. This perspective underlines the importance of direct, embodied experience over remote intellectual engagement (Wulff, 2010), raising questions about what defines a close connection with nature. For instance, can Canadian farmers claim a relationship with the Land similar to an Indigenous connection, or does Indigenous knowledge inherently carry a distinct relational quality?

Land-based and nature-based pedagogies converge in their shared focus on the environment, although Land-based approaches incorporate culturally specific and spiritual elements tied to Indigenous heritage. Following the Truth and Reconciliation Commission's recommendations (2015), educators are increasingly working to bridge these paradigms, fostering a more inclusive approach that respects Indigenous cultural heritage while promoting environmentally sustainable practices (Paraschak & Heine, 2019; Tahsin, 2021). I have witnessed the benefits of nature-based learning, and I believe it can serve as a bridge toward a more comprehensive, Land-centered pedagogy that supports both academic and personal growth.

As a teacher adopting nature-based practices, I recognize the influence of specific Indigenous approaches on my pedagogical approaches. To avoid cultural appropriation, I strive for authenticity and respect, seeking guidance from Indigenous peers at schools including a Mohawk School on a reserve south of Montréal and another school Mohawk School, near Cornwall, Ontario. Through this approach, I aim to cultivate a learning environment that equally values Indigenous perspectives and nature-based education, presenting Indigenous and Western knowledge systems as equally valid.

Nature-Based learning for students with autism

Research on nature-based learning for students with autism[3] remains limited, particularly concerning the sensory impact of natural environments. Individuals with autism face mental health challenges at significantly higher rates than their neurotypical peers due to factors including both traumatic school experiences and social challenges. Students with autism are more prone to bullying in school (Rowley et al., 2012) and often find traditional classroom settings overwhelming due to sensory overload (Goodall, 2018; Sproston et al., 2017; Wood, 2019). For many, the sights and sounds of a typical classroom can be overstimulating, suggesting that both content and the learning environment should be thoughtfully designed (Tsuji et al., 2022; Hazen et al., 2014).

Nature-based learning offers an alternative approach, fostering engagement through sensory-rich yet less structured settings. In my experience at Education Plus High School, students with autism thrive outdoors when experiences are predictable and well-supported. Preparations like equipping students appropriately and providing adult supervision transform outdoor learning into a beneficial experience. Supporting this approach, Li et al. (2019) demonstrated that nature-based experiences promote sensorimotor, emotional, and social growth for students with autism. Similarly, Friedman et al. (2024) found that while not universally effective for all students, nature-based learning can be especially impactful when teachers prioritize safety, inclusivity, and rapport-building. Conversely, Friedman et al. (2024), and Bradley and Male (2017), reported that various elements in nature-based education including

[3] Education Plus adopts a neurodiverse paradigm in our pedagogical approach to students with ASD. (They are not autistic students; they are students with ASD.) Autism is not something to be changed or fixed. We emphasize natural variations when considering how our brains function (Chapman, 2019).

transitioning from indoors to outdoors, boredom, uncertainty, peer-conflicts, being stung by nettles, and feeling obliged to participate in activities, required educators to rethink their pedagogical approaches to outdoor education for students with autism. As students with autism form an increasingly recognized demographic, ongoing research is essential to refine and expand pedagogical approaches in nature-based learning.

Eco-pedagogy as a pedagogical approach

Eco-pedagogy builds on the ecological worldview, aiming to instill ecojustice through active, experiential learning. Advocates like Kellner and Kneller (2010) and Freire (1970) argued that eco-pedagogy requires confronting political and economic forces that perpetuate ecological harm, envisioning a grassroots movement to reconnect students with nature. Western nature-based education, which has evolved into a dynamic approach for reconnecting students with nature, aligns with eco-pedagogical goals of fostering environmental awareness and activism. Students readily engage with causes related to ecojustice, especially when they perceive tangible benefits. Barrón et al. (2022) referenced Nobel Peace Prize winner Wangari Maathai when they wrote, "Our experiences confirm Maathai's description of young people. Recent climate change actions such as Fridays for Future, Extinction Rebellion, and Earthjustice42 led by committed members across the globe show us that they have the strength and creativity needed to prompt global action on climate change" (p. 228). Encouraged to avoid traditional presentation methods, students prefer leading peers on field trips, discussing local ecosystems, and engaging directly with natural spaces. This approach requires a holistic, inquiry-based form of ecological engagement that supports both individual and collective environmental action.

Canadian perspectives on nature-based teaching

Canadian landscapes and Indigenous heritage deeply influence nature-based education, and Canadian research offers valuable insights into how educators embed environmental and cultural knowledge in their practices. Canada has a longstanding tradition of outdoor education, especially in areas with abundant natural landscapes, supporting the integration of environmental stewardship within educational settings. For example, research by Potter and O'Connell (2020) highlighted the role of Canadian educators in promoting sustainability through hands-on environmental engagement. Dyment and Bell (2008) demonstrated how green school grounds encourage physical activity and foster nature engagement, showcasing the role of Canadian educators as advocates for both local and global ecological issues. They wrote, "green school grounds invite children to get moving in ways that nurture all aspects of their health and development" (p. 960). Reflective of the increased awareness and concern for the natural environment is the rise in the number of Forest schools in Canada.

Forest schools (FS) in Canada

Zabe MacEachren (2013) examined the forest school model in Canada, tracing its origins to Scandinavia and highlighting its core principles: child-centered learning, experiential engagement, and outdoor curriculum integration. She highlighted the advantages, writing, "The social context created in an FS setting, which does not have the confinements of walls, offers a unique opportunity for interactions between nature and child, teacher and child, and classmates

and child" (p. 227). All these interactions offer a rich means to foster language and communication skills. This approach, tailored to Canadian educational needs, has been shown to enhance student engagement, well-being, and environmental consciousness. MacEachren (2013) also addressed challenges such as curriculum integration, resource limitations, and logistical barriers, which, while significant, underscore the potential of forest schools to enrich educational settings through nature-based learning. Hill et al. (2024) challenged educators to "examine our practice as the metaphorical blurring of the edges draws attention to spaces of not knowing, disrupts boundaries, suggests the potential for change, and invites us to 'shake up' our praxis as educators" (p. 3). They suggested educators further elaborate on the complexities of nature-based teaching, emphasizing relational attunement, a concept that requires them to cultivate deep connections with nature, students, and community. Effective nature-based teaching, they argue, involves an ethical responsibility that respects both the natural world and Indigenous knowledge. This relational approach, attentive to subtle aspects of nature and student interactions, challenges conventional pedagogies by inviting educators to foster a reflective and respectful approach to the natural environment.

Challenges and opportunities for Canadian nature-based teachers

Despite the demonstrated benefits, Canadian educators face numerous barriers, including institutional resistance, resource constraints, and rigid curricular standards (MacEachren, 2013). However, recent educational reforms, particularly in British Columbia, are creating more supportive frameworks for nature-based learning by incorporating environmental stewardship and Indigenous perspectives (Raptis, 2021). Peer-reviewed studies from the *Canadian Journal of Environmental Education* showcase successful programs integrating sustainability and experiential learning, pointing to promising directions for educational reform and the expansion of nature-based practices. I have examined current pedagogy and research in nature-based education literature. I now turn to the concept of *becoming*—specifically, the journey of becoming a nature-based teacher.

Becoming a Nature-based Teacher

In this section, I review current literature that uses Deleuze and Guattari's concepts as a theoretical framework. University education alone does not create a teacher; universities merely certify teachers who have completed formal training. The skills and dispositions necessary to teach effectively often emerge over time, becoming increasingly visible to both the teacher and others. In various professions, I have observed experts who struggle to communicate their knowledge, either overwhelming their audience with jargon or, conversely, lacking the depth of understanding needed to teach effectively. *Becoming* a teacher requires both content expertise and the skill to communicate it in a way that engages students.

Gilles Deleuze's (1987) concept of *becoming* is central to his broader exploration of movement, identity, and power dynamics, and it is pivotal to my research. Introduced in works like *A Thousand Plateaus* (1987), co-written with Félix Guattari, *becoming* transcends mere physical wandering to embody a philosophical stance that redefines human development. It creates plateaus, lines of flight, ruptures, and smooth spaces, where no boundaries—whether social, political, or conceptual—are fixed. Everything is fluid, and connections are rhizomatic. Rigid, hierarchical structures are flattened, and change is inevitable.

For example, a group of students in a classroom setting are following a rigid, hierarchical structure where the teacher dictates the lesson and students passively absorb information. Later, over lunch they begin to engage in a collaborative project that blurs the boundaries between teacher and student—imagine the teacher eats lunch with his students, because I do. The students take the lead, exploring different ideas, shifting roles, and contributing in diverse ways. The learning space transforms into a *smooth space*, where knowledge flows freely, and everyone's contributions are valued equally. In this environment, there are no fixed roles or rigid boundaries—just fluid connections between individuals, where ideas evolve and change as they interact. This process reflects the rhizomatic nature of *becoming*, where growth happens unpredictably, across multiple pathways, and is not constrained by traditional structures.

In *Nomadic Education* (Semetsky, 2008), Inna Semetsky extended Deleuze and Guattari's (1987) philosophy to education, expanding on the idea of "singularities" or seeds of change. Although much of this book investigates curriculum, in it, she treats each student as unique, viewing learning as a process where standardization is disrupted, outcomes are unpredictable, transformation occurs, and new connections are forged. Central to this approach is the concept of the apprentice—a learner who actively engages in becoming, embracing experimentation, creativity, and adaptability. The apprentice draws meaning and understanding from interactions with the world and others, requiring critical thinking that leads to original thought and innovation rather than mere replication.

I find this philosophical approach convincing because it resonates with my own experiences as a teacher. It is radical, challenging existing power structures and pedagogical norms. It disrupts traditional curriculum content and redefines schools, classrooms, and the teacher-student relationship. Instead of being static, education becomes a space for movement, freedom of thought, and creativity. The appeal of this conceptual framework lies in its alignment with an organic, nature-based model. Plant rhizomes, with their visible and tangible growth patterns, serve as a visual metaphor for this aspect of Deleuze and Guattari's (1987) philosophy.

However, translating this philosophy into praxis presents several challenges. For those accustomed to hierarchical, authoritative pedagogical frameworks, a rhizomatic approach may feel anarchic. Many North American educators find comfort in the defined boundaries of classrooms and the clear roles of student and teacher. Abandoning the teacher-centered "sage on the stage" model can feel like an abdication of responsibility. The greatest challenge, however, lies in assessment. If traditional evaluation methods are retained, they risk undermining the very essence of this new pedagogical approach. To truly embrace this model, it is essential to develop assessment systems that value the process of becoming, prioritizing growth, transformation, and creative exploration over static outcomes.

Darling-Hammond (2006) commented that "much of what teachers need to know to be successful is invisible to lay observers" (p. 300), yet her article, "Constructing 21st-Century Teacher Education," implies a view of teaching as an engineering project, suggesting that teachers can be built in university. This view emphasizes curriculum knowledge and pedagogy but does not account for a teacher's personal growth or prior life experiences, essential elements in the practice of teaching. Without continuous adaptation and growth, a teacher's practice risks becoming obsolete, like steam-powered factories. Flores and Day (2006) supported this dynamic view, finding that teacher identities "deconstruct and reconstruct over time" as personal histories interact with professional experiences (p. 230). Their work illustrated that becoming a teacher is an evolving, adaptive process that blends experiences from both school and life beyond it. Darling-Hammond's (2006) view that teacher education requires technical training is certainly

limited, yet it does provide an important foundation that helps teachers navigate curriculum design, classroom management, and child development. The balance between formal training and experiential learning warrants further discussion, especially regarding whether certain teaching skills can indeed be nurtured within university programs. Additionally, contrasting Darling-Hammond's approach with alternative educational models that prioritize experiential or apprenticeship-based learning could strengthen the critique by showing viable models of teacher development outside the university factory concept.

Flores and Day's (2006) findings on the influences of personal history and contextual factors in teaching development contribute to understanding that teacher identity is not static. However, while their longitudinal study emphasized the effects of biography and pre-service programs on teacher identity, it largely overlooked other potentially transformative factors—such as socio-political influences or shifts in personal values over time—that can also deeply shape teaching philosophies. Additionally, the study's narrow focus on past educational experiences as the primary context risked downplaying the role of continuous, self-reflective growth. Including studies that account for teachers' ongoing adaptation to external influences, such as societal expectations, could provide a more comprehensive view of how identity as a teacher evolves. This critical lens can offer insights into how teachers navigate the diverse expectations of their role, especially as nature-based educators.

Building on this view, Neville et al. (2023) explored teacher preparedness for outdoor education, observing that insufficient training and low confidence often limit outdoor teaching. Their model comprises three interrelated spheres—the teacher, the student, and the environment, each affecting the other. I argue that this triad is not merely interrelated but co-evolving; teachers, students, and nature dynamically shape and are shaped by one another. Neville et al.'s findings highlight the importance of teacher background as a factor in successful outdoor education, emphasizing that a teacher's own experiences influence their comfort and effectiveness in non-traditional settings. Their evidence-based recommendations provide valuable support for educators integrating outdoor learning into curricula, though they stop short of exploring how nature itself might act as an educator—an approach often discussed in nature-based education. Neville et al. (2023) provided valuable insight into why outdoor learning might not be widely implemented, particularly pointing to gaps in training and confidence. However, while their three interrelated spheres model effectively illustrates the interdependence of teacher, student, and environment, the model's limitations lie in its focus on the educator's personal background and training without accounting for systemic barriers. The authors could enhance their analysis by exploring factors such as administrative support, curriculum constraints, and resource availability, which can impact a teacher's ability to deliver outdoor education effectively. Additionally, while they recommended Rowland et al.'s (2005) study of elementary teachers' math lessons for guiding teachers in outdoor settings, they do not address how the environment itself can play a more active role in teaching, an element frequently emphasized in nature-based education philosophies. They conclude that nature plays a critical role in outdoor learning. They advocate for teachers to thoughtfully select and utilize diverse outdoor settings to enrich educational experiences. They write that their model outlined above, "will support teachers in planning and facilitating outdoor learning experiences that motivate and inspire students, whilst addressing formal curricular and aspects of an informal curriculum" (Neville et al. 2023, p.16).

My travels to Iceland, first in winter along the southern coast in 2020 and again along the north coast in summer 2024, offered me a firsthand view of the integration of outdoor education.

According to Norðdahl and Jóhannesson (2016), Icelandic educators use natural landscapes like forests and beaches for educational purposes, perceiving learning as inseparable from these environments. Unlike Canadian educators, who often focus on structured outdoor play spaces (Herrington, 2008), Icelandic teachers consider natural environments essential educational spaces. Outdoor learning there has become an intrinsic part of school culture rather than a field trip, aligning with my experience, as I often take my students outside without preamble, making outdoor learning a natural part of our day. The comparison between Icelandic and Canadian outdoor education practices provides a valuable cross-cultural perspective on nature-based teaching. However, while the Icelandic model's integration of natural spaces into everyday learning is inspiring, the analysis could be enriched by exploring whether such an approach could be culturally or logistically feasible in other educational settings, such as urban Canadian schools. Iceland's model may be uniquely supported by societal norms and a strong cultural connection to the environment, whereas Canadian teachers might face institutional limitations or differing expectations. Adding perspectives from additional Nordic or Land-based educational studies, especially Indigenous Canadian perspectives, could highlight alternative ways to achieve a comparable integration of nature-based learning in other contexts. This would allow for a richer understanding of how teachers in diverse settings might implement similar practices or adapt them based on local constraints and cultural values.

Becoming a rhizomatic teacher

Drawing on Deleuze and Guattari's (1987) concept of "rhizomatic" becoming, I view the process of becoming a teacher as non-linear and shaped by an accumulation of diverse experiences. Malka Gorodetsky and Judith Barak (2016) expanded on this notion by highlighting the fluidity of teaching and learning as processes "loaded with uncertainty" (p. 97). They argued that the boundary between teacher and learner should be blurred, advocating instead for mutual commitment and collaborative engagement. Gorodetsky and Barak's (2016) exploration of the nomadic teacher identity illustrated how teaching and learning are interconnected, dynamic, and open to new possibilities. Through their study of first-year teachers, they developed a community where participants used drawings to share their experiences before and after participating in a learning environment that encouraged the erosion of traditional teacher-student hierarchies. Their three case studies concluded that educators should shift focus from teachers' activities to the processes of teaching and learning, emphasizing that the boundary between these roles is more imagined than real (p. 97). While their research effectively challenges the rigid duality of teacher and learner roles, it overlooks the role of the environment as an active participant in relational learning. Although they stress the importance of collaborative, open learning spaces, they do not consider nature as a central and relational force within these dynamics. I argue that nature must be acknowledged as a co-teacher in the dynamic interplay between teacher and student.

By incorporating nature into this rhizomatic framework, particularly within the context of nature-based education, we can further enrich this model. Gorodetsky and Barak (2016) could enhance the applicability of their findings by exploring how their ideas might translate into tangible practices for teachers working within structured educational systems. Integrating David Sobel's (1996) place-based education framework, for example, could offer practical strategies for implementing a rhizomatic, nature-inclusive approach in real-world classrooms. Sobel's (1996) emphasis on connecting education to local environments aligns with a vision of nature as

an active participant in teaching and learning, reinforcing the fluid, interconnected, and co-creative nature of this pedagogical model.

Kathryn Strom and Adrian Martin's (2017) application of Deleuze and Guattari's rhizomatic theory to teaching provides an innovative lens through which to view the complex and evolving nature of teacher identity. Their examination of how teacher practices are shaped by entrenched systemic forces is particularly insightful, underscoring the challenges of enacting change within the rigid educational system. The authors argue for non-linear approaches to research. For example, they write "In the classroom, conceptualizing a teacher identity construction process enables us to focus on what teachers do and are capable of doing in their assemblage, rather than what their identities are. Attending to teacher identity as becoming allows us to move away from the idea of a teacher as a stable, encapsulated body and instead toward an amalgam" (Strom & Martin 2017, p. 8). However, they do not propose concrete strategies for navigating these entrenched structures or translating rhizomatic ideas into actionable steps for new teachers. A deeper exploration of practical applications, particularly regarding how educators can work within existing systems while fostering adaptive, evolving teaching practices, would enhance the usefulness of their study. Addressing how rhizomatic approaches could support nature-based educators in managing both classroom complexities and the unpredictability of outdoor learning could yield valuable insights for teachers in dynamic environments.

Jason Wallin's *A Deleuzian Approach to Curriculum* (2010) and Matthew Carlin and Jason Wallin's *Deleuze and Guattari: Politics and Education: for a people yet to come* (2014) reimagine curriculum and education through Deleuze and Guattari's (1987) philosophy, emphasizing creativity, relationality, and transformation over rigid, outcomes-based models. Wallin critiques the tendency of contemporary education to reduce learning to quantifiable outputs, stifling inquiry and creativity. Central to Wallin's approach is the concept of *becoming*. He envisions curriculum as a non-linear, evolving network, valuing emergent and unpredictable aspects of learning. This rhizomatic perspective resists standardization, highlighting affective dimensions such as emotions, sensations, and embodied experiences as integral to education. His vision aligns with nature-based pedagogies.

Matthew Carlin and Jason Wallin's (2014) work extends these ideas, framing education as a political and ethical endeavour. They introduce the concept of "a people-yet-to-come," which envisions education as a catalyst for new modes of existence and collective becoming. This transformative vision challenges traditional models that reproduce existing social hierarchies, instead emphasizing creativity, experimentation, and the construction of new realities. Deleuze and Guattari's (1987) notions of deterritorialization and reterritorialization further disrupt hierarchical and linear curriculum structures, advocating for open-ended processes, prioritizing connection and multiplicity. This approach disrupts the rigid, hierarchical structure of traditional classrooms and redefines education as a dynamic, student-centered process. In this model, the teacher abandons fixed sequences and predetermined knowledge delivery, empowering students to engage in exploratory, curiosity-driven investigations, such as observing ecosystems firsthand in natural settings. Reterritorialization follows as organic connections arise through student collaboration, integrating diverse perspectives and disciplines. This web-like approach encourages collective meaning-making, focusing on relationships rather than isolated facts.

Wallin's (2010) work scaffolds nature-based pedagogies. Just as nature-based pedagogy values the dynamic, interconnected learning processes within ecological systems, Wallin's vision

embraces fluid, relational approaches that reflect the world's complexities. Alone and with Carlin (2010; 2014), Wallin challenges educators to move beyond static frameworks to inspire creativity, diversity, and ethical engagement. They extend pedagogy beyond the classroom. They "connect the concept of a 'people yet to come' to what we might call a 'planet yet to come" (p. 51) and suggest that "practices of sustainability are—ought to be—intimately linked to pedagogy and politics in so far as they require *transformation* in habitual modes of thinking and practice (p. 47). The aspirational idea of "a people-yet-to-come" resonates with the transformative potential of education to shape new ways of thinking, feeling, and acting. By integrating concepts like rhizomatic learning and affective engagement, Wallin (2010) encouraged educators to envision pedagogical practices that are intellectually rigorous, ethically grounded, and politically transformative, thereby redefining education's role in shaping the future. Wallin's vision seeks to leverage education as a tool for social change. While this vision may inspire political and social justice initiatives beyond the classroom, it surpasses the focus of my work on nature-based pedagogies of becoming. The paradigm I propose offers a pedagogical approach and curricular design that aligns with students' current needs, diverse interests, and capacities while equipping them with the skills and perspectives needed to navigate the challenges and opportunities of today's dynamic, ever-evolving society.

Deleuze and Guattari's concepts in an autobiographical narrative inquiry framework

The integration of Deleuze and Guattari's concepts into autoethnographic narrative analysis has been widely examined in qualitative research, especially in the field of education. In "Thinking with Deleuze in Qualitative Research," Lisa Mazzei and Kate McCoy (2010) highlighted how concepts such as rhizomatic thinking and becoming, inform innovative approaches to identity, learning, and knowledge production. They wrote that they are not "attempting to 'get Deleuze right' but are straining meanings and representations that may emerge through a rigorous engagement with the work of Deleuze and Guattari toward transformations of research practices and knowledge" (p. 503). Straining at meanings and representations describes my use of their concepts well—mostly I take a basic interpretation and employ it to create a new understanding of nature-based pedagogies. Similarly, Alecia Jackson and Lisa Mazzei (2008) explore the fluidity of identity in their article, "Experience and 'I' in Autoethnography: A Deconstruction," aligning with Deleuze and Guattari's rejection of fixed subjectivity. Their work emphasizes the dynamic and fragmented nature of personal narratives, advocating for a more nuanced understanding of subjectivity in research. They asked, "How would this 'becoming I' function in autoethnography?" (p. 309) and invoking Deleuze, respond, "Both who we are, and who our participants are, are in a state of becoming . . .we are to consider events as already interpreted experiences—as in a state of becoming" (p. 310). Throughout this dissertation I treat both myself and those I interact with, as fluid becomings.

The application of Deleuze and Guattari's framework within autoethnographic methodologies has also been demonstrated in Diana Masny's (2014) study, "Disrupting Ethnography through Rhizoanalysis." Here, the rhizomatic framework enables a critique of conventional ethnographic methods, embracing multiplicity and rejecting linear representations to better capture the complexities of educational contexts. True to Deleuze and Guattari's concepts, it is written in rhizomatic form. According to Masny, "This article is a rhizome. It spills out in the middle as we enter what has been a research study. There are multiple entries. As each entry is explored, the sense that emerges will take readers in unpredictable directions" (p.

347). This might work well for some who are versed in Deleuze and Guattari but could prove to be confusing for others. I chose a more traditional format for my dissertation. In Karyn McElroy's (2016) thesis, *Vagabond: Returning to Autoethnography as a Doctoral Nomad*, she used a "Deleuzian line of flight takes the reader through stories of vulnerability, challenges common sense assumptions, defines metanarratives, and questions certainty" (p. i). She recounted her doctoral journey with an agenda to inspire others to do the same. Johanna Boudina Maria de Jong (2014) in her thesis, *Always Becoming: (De-) (Re-)territorializing a Social Studies Autoethnography as 'Minor Literature*' aimed to move beyond Deleuze and Guattari's concepts. She wrote, "Methodologically my book is an effort to move from the conceptual art of Deleuze and Guattari to an exploration of a way of studying social relatedness through a form of autoethnography that is relational and descriptive" (p. 9). Combining autoethnographic narratives with Deleuze and Guattari's concepts she told her story—a Dutch girl in Qatar—outlining a series of plateaus and lines of flight that connect and interconnect with others. In her conclusion, she asked the reader "Did I succeed in my challenge to write engaging autoethnographical text, an affective social study, that recognizes Deleuze's cognitive art, but moves beyond it in a way that shows social relatedness in a relational and descriptive form?" (p. 119). In a similar way, my aim is to use Deleuze and Guattari's concepts, in relationship with autoethnographic narratives, to illuminate my role in relationship to my students and nature in the context of nature-based pedagogies.

Together, these studies highlight the synergy between Deleuze and Guattari's philosophical ideas and autoethnographic narrative inquiry. By prioritizing multiplicity, interconnectedness, and non-linearity, researchers can develop methodologies that not only reflect the dynamic and relational nature of education but also offer new ways of understanding and navigating the complexities of cultural, personal, and societal dimensions.

Synthesis of Literature Review

The literature on becoming a nature-based teacher underscores several key themes. First, there is a shift from traditional, information-dispensing roles to immersive, inquiry-based learning facilitation, aligning with student-centred approaches that promote critical thinking and engagement (Dewey, 1938). Another theme is integrating cultural and ecological knowledge, primarily through land-based education, incorporating Indigenous perspectives (Cajete, 1994; Wildcat et al., 2014). Other research I have reviewed demonstrates that *becoming* involves a continuous interplay of personal history, cultural understanding, and professional adaptability. While obstacles persist, especially in terms of institutional support, the literature suggests that with continued innovation and growth, nature-based education holds significant promise for educators and students alike. In the following chapter, I outline the methodology I used to contribute to the existing body of research. Using autoethnographic narrative inquiry, I weave my experiences with the nature stories shared by adolescent participants and theoretical insights to generate new knowledge. This approach enables a reflective and relational exploration of becoming a nature-based educator.

CHAPTER 3: Methodology and Methods

Research operates within four fluid and interrelated dimensions: ontology, epistemology, axiology, and methodology (Creswell & Poth, 2018). Ontology encompasses my conceptualization of reality. In the context of my research, ontology involves viewing reality as relational and interconnected, emphasizing the dynamic relationships between humans and nature. Epistemology concerns my perspective on how knowledge is generated and understood. In my research, knowledge is emergent, co-created through direct engagement with the natural world and reflective practices, aligning with experiential and transformative learning paradigms. Axiology reflects the values that shape the perception and transmission of knowledge, emphasizing respect for ecological systems, the intrinsic value of the natural world, and the ethical responsibility to foster sustainable practices. Methodology refers to the strategies I employ to investigate and disseminate knowledge.

I use autoethnographic narrative inquiry to capture the evolving relationship between learners and the environment. These dimensions are deeply interconnected and inform one another throughout the research process. Ontology shapes epistemology by grounding the belief that reality is relational, which, in turn, informs how knowledge is generated through co-creative and experiential practices. Axiology weaves through ontology and epistemology by providing the ethical framework that values the natural world and guides my approach to engaging with it. This methodology practically applies these interrelated dimensions, translating ontological beliefs, epistemological approaches, and axiological values into concrete research practices. Together, these dimensions create a cohesive framework for exploring and understanding the transformative potential of nature-inspired pedagogy of becoming, ensuring that every aspect of the research reflects its relational, ethical, and experiential foundations. This chapter chronicles the journey that led me to adopt an autoethnographic narrative inquiry as the methodology for gathering and presenting my research. I examine autoethnographic frameworks and explain the power behind narratives. Then, I show how I use this methodology to describe, analyze, and interpret my research.

For this dissertation, my first inclination was to focus on students learning in nature. I was fascinated with the difference between what adolescents produced in a classroom and what they created outdoors. Given a similar writing or art assignment, the students in a forest setting or sitting on the grass consistently produced more detailed and creative essays and drawings than those sitting at desks and on chairs. My initial attempts to investigate this phenomenon did not produce a clear understanding of the subject I was investigating. Clandinin and Connelly (2000) suggested that my experience is not unique. They wrote, “Before we began to think of our research as narrative inquiry, we sought out other methods as possibilities for studying experience” (p. 127). Flipping the script and focusing on my experiences as an evolving nature-inspired teacher led me to explore autoethnographic narrative inquiry as described and outlined by Carolyn Ellis (2010) as well as Jean Clandinin and Michael Connelly (2000).

My dissertation weaves an analysis of my experiences (autoethnography) with an interpretation of stories shared by participants (narrative inquiry) at a summer camp. Together, they offer a comprehensive understanding of how immersive, holistic, nature-inspired environments shape personal and collective learning experiences, while continuing to guide my development as a nature-inspired teacher. Guided by Ellis’ (2010) and Clandinin’s (2013) research, I studied autoethnography and narrative inquiry as research approaches by reading research theses that employed the same methodology. Ellis (2010) explained that the goal of

autoethnography extends beyond sharing personal experiences; it seeks to challenge existing paradigms and advocate for socially just solutions. Building on this perspective, my research examines the current state of high school education in Québec and advocates for a systemic shift to address the needs of students in 2025. Clandinin and Connelly's (2006) idea that "humans, individually and socially, lead storied lives" (p. 477) resonated with me and suggested that I had found a methodology that would frame, describe and interpret the shared stories by participants as well as inform my experiences of *becoming* a nature-inspired teacher. In my final chapter, I propose a nature-inspired pedagogy designed to challenge and disrupt the prevailing model.

Autoethnographic Research Framework

Autobiographical and autoethnographic research both use personal narratives as a central form of inquiry, but they differ significantly in their theoretical underpinnings and goals. The ontological foundation of autobiographical research (Clandinin, 2013) builds on the individual as a unique, self-contained being whose experiences and reflections are central to understanding. The epistemological foundations of autobiographical research are rooted in humanistic and phenomenological traditions, emphasizing subjective experience as a valid and rich source of knowledge (Clandinin, 2013). The primary purpose of the autobiographical approach is to explore personal life experiences, often to understand identity, memory, or the meaning of specific events in the author's life. The researcher's story is the primary object of inquiry, with less explicit emphasis on linking personal narratives to broader societal or cultural constructs. It focuses on concepts like self-actualization, personal identity, and memory. It is less overtly political than autoethnographic research, though it may engage with universal themes (e.g., love, loss, resilience).

Autoethnography is a qualitative research method (Ellis, 2010) that involves analyzing personal experiences to understand cultural, political, and social meanings. In autoethnographic research, ontological views of the self are inherently embedded within and shaped by broader cultural, social, and historical contexts. Epistemologically, the autoethnographic approach is grounded in critical and postmodern paradigms. It emphasizes the interplay between personal experience and collective structures, challenging traditional notions of objectivity. Its purpose is to illuminate cultural phenomena, social norms, or systemic issues by analyzing the researcher's personal experiences about the larger cultural or societal framework (Clandinin, 2013). Personal narratives serve as a lens to critique, question, or explore broader sociocultural phenomena, emphasizing how collective forces shape individual experiences. The research often focuses on concepts like power dynamics, intersectionality, and the role of discourse in shaping experience (Christensen & Jensen, 2012). It seeks to democratize research by valuing marginalized voices and challenging hegemonic knowledge systems. Denzin (2014) wrote, "autoethnographic work must always be interventionist, seek to give notice to those who may not otherwise be allowed to tell their story, or who are denied a voice to speak" (p. 22). In his thesis, *Together our Voices will Strengthen the Weaving* (2022), Devon S. Isaacs used autoethnographic narrative inquiry to weave seven Indigenous narratives to develop an "Indigenized model of belonging" (p. iv) to benefit Indigenous students in institutions of higher learning. His research implications are explicitly activist-oriented (looking to provoke change) and political, as they expose flaws in current systems. I use this framework to spark a dialogue about Western pedagogical approaches and to propose a transformative shift that better supports students struggling within an outdated system.

Autoethnographic research is unique, as it blurs the line between knowledge and knowing. The researcher analyzes and describes a conversation with himself about the knowledge he believes he has or is developing. Clandinin (2013) described research writing as having a quality of unexpectedness. During this research, I interrogated my narratives and often surprised myself by creating new or unfamiliar metanarratives. For example, I began thinking about transformation and change, so the stages of butterfly development initially provided an applicable framework. As I reviewed my narratives and the adolescents' nature stories, I realized that although there are times when life unfolds in stages, there are others when people and events interact with our lives rhizomatically (Deleuze & Guattari, 1987).

I used to think that building a career was like climbing a staircase—one job leading to the next, each step predictable and clear. But my journey has been anything but linear. At one of my first teaching jobs, my principal suggested that I present some of my ideas at a staff meeting. A principal from another school was in the audience, and she asked me to speak to her staff. One of her teachers volunteered at her church and asked me to talk at a youth conference. At one of the youth gatherings, I met a teenager from a group home. I started volunteering to do homework assistance at the home. Suddenly, my career wasn't a staircase but a rhizome, with opportunities sprouting in multiple directions. Teaching became intertwined with presenting, advocating, and counselling.

I also noticed that within the stages, changes and developments rarely followed a pattern and that there are *ruptures* where new *lines of flight* emerge (Deleuze & Guattari, 1987). For example, in my experience with teaching outdoor education, I noticed that the students' engagement didn't always follow the typical progression I expected. At times, a student would struggle with the physical demands of an outdoor activity, only to suddenly shift gears and take on a leadership role in guiding others through the challenge. These unexpected moments ruptured their usual learning patterns, leading to new insights and a deeper connection with the environment and their peers that hadn't been anticipated. Anderson (2006) outlined five key elements found in autoethnography—the first being that the ethnographer must be part of the culture being analyzed who plays a "dual role as a member in the social world under study and as a researcher of that world" (p. 284). In this research, I am a teacher analyzing teaching methods.

For autoethnographic researchers, one of the first hurdles to overcome is believing your experience is worth sharing. Leavy (2013) proposed that all researchers are storytellers, and the impact on readers is the same if we use our own authentic stories or retell the experiences of others. The "use of narrative inquiry is inspired by a view of human experience in which humans, individually and socially, lead storied lives" (Clandinin, 2013, p. 13). Clandinin explains that narrative inquiry allows others to "rethink and reimagine the ways in which they practice and the ways in which they relate to others" (Clandinin, 2013, p. 51). Narrative inquiry locates the researcher within the research. The researcher's presence affects the research, if only by his presence, in an observational study. Developing a framework, including questions, descriptions, analyses, and interpretations, further impacts the purity of the research.

Clandinin's (2013) requirement for the value and necessity of qualitative social science research is that it responds adequately to the questions "who cares?" and "so what?" (Clandinin, 2013, p. 193). Testing my research topic and research questions with my PhD cohort, professors, and others outside of the academy, suggested sharing my "knowing" (Cardinal, as cited in Clandinin, 2016, p. 187) would be an important and valuable contribution to the academic community. In my review of previous research on becoming a nature-inspired teacher, I identified a gap that my research could address.

Another hurdle I experienced initially as an aspiring autoethnographic researcher was trying to recall, shape, and tell the story. Recalling events and details from years past is complicated. Descriptions of people and places are never a substitute for the original experience—although the reflection and the analysis can bring to the surface qualities that were initially unnoticed. In his song *Anthem*, Leonard Cohen (1992) wrote, "Forget your perfect offering / There is a crack, a crack in everything / That's how the light gets in," encouraging me to be authentic and forthright but not obsessed with perfection or the quest for flawlessness, to present my narratives to the best of my ability, and to expect my dissertation to illuminate a yet unexplored area of research.

The Power of Story

Narrative research places a high value on stories. Stories help us understand our experiences and the experiences of others, which are not like ours. Stories develop empathy, raise awareness and form communities by spanning the gap between these experiences. Vera Caine, Andrew Estefan, and Jean Clandinin (2013) asserted, "Narrative inquiry is how we perceive human experience" (p. 584). Narrative inquiry focuses on people's daily lives and investigates the social, cultural, linguistic, and institutional narratives that form them (Clandinin et al., 2010). Clandinin and Connelly (2000) asserted that "experience happens narratively. Narrative inquiry is a form of narrative experience. Therefore, educational experience should be studied narratively" (p. 19).

In my research, I share my stories, analyzing the stages and rhizomes in each. Then I analyze the adolescents' nature stories, paying attention to their transformations and lines of flight. Clandinin and Connelly (2006) added a nuanced definition, suggesting that narrative inquiry is not only about collecting, describing, analyzing and interpreting stories. The use of narrative and its framework are primarily the phenomenon studied in the inquiry. "It is a way of understanding experience" (Clandinin & Connelly, 2006, p. 20). As I write my narratives and read those of the adolescents, I am continually surprised by the new perspectives that emerge, reshaping my understanding of these experiences. One of the strengths of the narrative is its ability to develop rich, contextualized insights into how people make sense of their lives and experiences. In my research, particularly in the adolescents' nature narratives, I am struck by their diction and the care with which they describe their experiences. One participant, Kelly, wrote about her time on a dock at night. Her choice of words captures her emotions so vividly that her metaphysical experience transports the reader to the dock where she is sitting.

While acknowledging the subjectivity of storytelling, a narrative has the power to capture an event's complex and nuanced aspects. It can bring hidden layers of meaning to the surface. Presenting stories creates forums for discussion and opens subjects and themes for multiple interpretations, allowing for differing opinions while highlighting relatable changes that can help further the study of developments and evolutions. However, stories are inherently subjective and are open to bias by the storyteller and the reader(s)/listener(s). Qualitative studies have often been challenged that they lack the rigour, structure, and validity claimed by quantitative researchers. Devoid of summary charts, graphs, and tables, some claim narrative research is too time-consuming to produce and read. However, many have shown that qualitative and quantitative research are snapshots of an event or events in time, and both approaches are equivalently open to bias and interpretation (Guba & Lincoln, 1994; Creswell & Plano Clarke, 2018).

According to Clandinin (2006), there are three dimensions of the narrative inquiry space: personal and social (interaction); past, current, and potential (continuity) or time; and location and place (situation)" (p. 47). We are never alone, even in autoethnographic research. We are retelling stories about our interactions with others and we share those stories with others to perpetuate the social interaction (Clandinin & Connelly, 2000; Li, 2004). In this research, the stories and experiences are primarily mine as I share time, space and relationships that influence me as I *become* a nature-inspired teacher. Clandinin (2013) stated that narrative inquirers should start with personal justifications, explaining the inquiry based on their own experiences. In the next chapter, I present a series of my life experiences that explain the web that has brought me to becoming a nature-inspired teacher. Clandinin (2013) furthered this, writing, "our past experiences are embodied in our lived and told accounts (p. 196). When writing, I am aware of the shared time and space within which the experience happened. In retelling and analyzing stories, one of my aims is to understand and share how time and space framed the experience and guide my development as a teacher.

In the following chapter, I describe and interpret my story of being brought up in a strict Christian environment and how the Christian/colonial worldview influences my perspectives on nature and my pedagogical approach as a teacher to analyze how my thinking was moulded and why, at times, I struggle in *becoming* a nature-inspired teacher. Next, I describe and interpret my numerous trips to native reserves and Inuit villages in northern Canada. My interactions with people at that time in their spaces impacted my worldview and continue to influence my pedagogical approach. Then, I outline the chronological development of my school, Education Plus High School. In the caterpillar-to-butterfly paradigm of transformation, Education Plus represents the eclosion stage. It has enabled me to act on my transformation and continue to develop as a nature-inspired teacher. Anderson (2006) identified five key features of autoethnography, with the third being "dialogue with informants beyond the self" (p. 385), which involves analyzing descriptions provided by others within the culture being studied. In my research, education is the culture, with adolescents in nature playing a crucial role in this microcosm. To enhance my self-analysis, I include and reflect on stories written by adolescents about their experiences in nature.

Methods for creating meaning in my stories

In my autoethnographic research, the processes of recalling, reflecting on, and verifying the validity of my experiences were deeply entwined with my autobiographical journey and informed by the principles of narrative inquiry, as outlined by Clandinin and Connelly (2000). Their emphasis on personal experience as a foundation for knowledge construction provides both philosophical grounding and methodological direction, helping ensure that my research remains rooted in lived experience.

Revisiting earlier life events is deeply introspective. As Clandinin and Connelly (2000) note, "narrative inquiry is a way of understanding experience" (p. 20). My old journals became entry points into the emotional and cognitive landscapes of my past, offering unfiltered reflections that is supported by their view that the researcher's own experience - "livings, tellings, retellings, and relivings" (p.70) - is central to this type of research. Photographs served as visual prompts, triggering memory and deepening recollection—echoing their assertion that "photographs taken by participants or researchers are . . . field notes" (p. 106). Conversations

with those present during key events provided relational insight, offering alternate perspectives that both affirmed and extended my understanding.

While reflection was foundational, writing allowed me to shape these recollections into scholarly narratives. Writing, as Clandinin and Connelly (2000) observe, is a way of making meaning out of experiences. Through this process, I identified themes, emotions, and patterns within my memories of formative events - travels, upbringing, and teaching. Writing became a dialogic process—an ongoing engagement with the past.

Editing was similarly recursive and reflective, and I returned frequently to my journals and images to ensure narrative coherence and emotional authenticity. Each revision clarified key themes and strengthened the overall flow of the work.

To support the validity of my account, I employ strategies grounded in the relational ethics of narrative inquiry. Engaging in dialogue with those who shared the experiences allowed me to revisit and refine my interpretations, often uncovering details I had overlooked. Clandinin and Connelly's (2000) framework enabled me to integrate personal texts, images, and relationships into an emotionally resonant and methodologically sound narrative. Through this approach, I honour the depth of personal insight while contributing to a broader scholarly conversation.

Participants and Setting

There are eighty-five English sleepaway camps in Québec. Some of these camps have religious foundations (e.g., Christian, Jewish) or a specific charter (e.g., special needs, music, sports). Research narratives were collected from two summer camps—Border Camp and Camp Mountainside.[4] John W. Creswell and Cheryl N. Poth (2018) suggested that multiple-sourced data allows for triangulation and reduced data bias. Their commonality of being sleepaway summer camps and their different missions and approaches factored into selecting these two locations. The boards of directors and the camp management of both locations acknowledged the value of research and its potential to inform future decisions concerning camp management and vision casting. At both locations, directors facilitated the research by allocating ample time for staff to participate without pressure. Most staff at both locations submitted written accounts of their experiences in nature. Using the age-range criteria[5], 28 participants from both camps qualified for this research.

Recruitment of participants

The participants were the camp staff, comprising the kitchen crew, counsellors, waterfront staff, and maintenance crew. Similar research projects report a 50% participation rate (Hayman et al., 2012). My study had a 95% participation rate at both camps. Most of these young people come from the Montréal area. The camp recruits them to work and pays them between $1,000 and $2,000 CAD for the summer. They represent a range of social and economic strata. Generally, there is an equal number of those who identify as male and female. Most camp staff are students. I used a writing activity to have participants interpret their experiences in their own words. Once each camp agreed to participate in this research, I supplied them with the

[4] Pseudonyms for camp names have been used throughout this document to maintain confidentiality.

[5] World Health Organization's definition of adolescence (NCBI, 2003).

Informed Consent Form for parents to sign for staff who were younger than 18. All participants with valid parental consent forms received an informed assent form to complete before starting the writing activity. I was introduced by the camp director at the daily morning meeting of each camp staff. I presented my project and aims and described the participants' roles in the research. The director allowed the staff time to participate. Once participants submitted assent forms, I handed out materials (lined sheets and pens/pencils). I wandered around the camp as they wrote their stories, answering questions, beginning discussions, and conducting observations. After submitting their essays, a random draw for a monetary prize took place. At each location, four individuals won $25. All participants had $5 added to their tuck accounts.

Commonalities between the two camps

Beyond the camp's administration, both have four core staff groups: kitchen, maintenance, waterfront, and counselors. My research intentionally welcomed the participation of all staff members, regardless of role or function at the camp. Because I focused on adolescents, I relied only on the nature stories from participants aged 14–19.[6] Both locations run weekly sleepaway sessions for campers aged 5-14. At Border Camp and Camp Mountainside, campers, including supervisory counsellors, sleep in rustic cabins and have clean and functioning bathroom facilities.

Distinctions between the two camps

Border Camp is a Christian sleepaway camp in the Eastern Townships of Québec. Founded in 1936, the camp moved each year until it found a permanent home on a lake, 10 kilometres from the U.S. border. Its mission is[7]

> to create a secure setting that fosters meaningful experiences for youth, nurturing a strong sense of identity, belonging, and purpose, helping them gain a deeper understanding of their unique creation and salvation.

There is an effort to balance evangelistic Christian values and messaging with an outdoor camp experience. Border Camp distinguishes itself from Bible Camps, focusing on bible-based experiences and teaching. Several churches in Québec are socially linked to the camp. Overnight campers come mainly from Montréal, and the day camp attracts children from nearby towns. Parents pay to have their children attend, and financial assistance is available for families who cannot afford fees. The mean age of the 11 eligible participants in this research at Border Camp research was 16.6. Seven participants identified as females, two as males, and two chose not to indicate their gender.

This camp is undergoing a series of large construction projects to refurbish older buildings and rebuild a gym facility. Donations and bequeathments provide the capital to modernize and expand structures. The lake is the focal point of the camp, as it runs the length of the property. The waterfront has docks, boats, two water trampolines, and a water slide and activities include sports, archery, water activities, arts and crafts, and a campfire.

[6] https://www.who.int/health-topics/adolescent-health#tab=tab_1

[7] Paraphrased from their website.

Camp Mountainside began in 1944 as a project of the Ladies Benevolent Society on a lake, north of Montréal, Québec. Its mission statement is:

> To offer economically accessible outdoor experiences to children facing adversity, where they can enhance self-esteem, form positive connections, and acquire important life skills in a supportive group setting that values individual growth[8].

Most campers come from lower-income families in the Montréal area and pay only a nominal fee to attend. The camp is socially and financially linked to several family social services in Montréal. Campers aged between five and fourteen stay for fifteen days and participate in camp activities including a swimming pool and lake waterfront. Each camp session has up to 150 campers. Staff has been trained in trauma-informed care, as many of the campers have experienced some level of social distress. The structures are older than those at Border Camp and are being refurbished, beginning with the necessary components, such as roofs and doors, with a long-term plan for new bathroom facilities and a dining hall. There are approximately 70 staff members, including some from countries such as the UK and Australia, of which sixty-nine percent are 19 or older. The mean age of the eligible participants in this research is 17.5. Seven identified as female, seven as male and three chose not to indicate gender. The campfire is at the centre of the camp, with the pool and lake a short walk from the cabins. A new and growing area of the camp is the farm where campers grow crops (tomatoes, eggplants, herbs, and garlic). It has a wood-burning clay oven where campers learn to make food such as pizzas.

Story writing activity

First-person accounts and journaling are excellent sources when recording specific experiences in natural contexts (Simmons-Mackie & Damico, 2001). Usually, challenges include poor participation, a sense of exposure or vulnerability, and staying on task (Hayman et al., 2012). In my research, participants welcomed the activity and, in many cases, requested feedback. There was almost 100% participation at both locations. I introduced the story-writing activity to the participants. The guiding instruction was: “In approximately 300–400 words, write the story of an experience you had in nature—either here at camp or elsewhere.” I provided participants with writing materials (pens/pencils and paper) to complete this activity. (Participants were permitted to write their stories on phones or computers/ iPads, but only one chose to do this.) Because the participants were students and are used to being graded on their written work, I clarified that there would be no academic or other evaluation of the story writing. The word “activity” is used to describe the writing as it is consistent with the nature of the event. It is also a familiar term used to describe daily camp events at summer camps.

Camp observation as it operates

[8] Paraphrased from their website

After collecting their stories, I remained at the camp to have individual discussions with participants, record observations and take detailed field notes when participants connected with the natural world in activities such as hikes, swimming, outdoor maintenance, campfire, and free play. I participated in these activities with campers and staff to be close to the experience. "The best way to enter a person's lifeworld is to participate in it" (van Manen, 1997, p. 69). I heeded van Manen's caution that this type of close observation must maintain a "hermeneutic alertness" that allows us to retreat and "reflect on the meaning of the situation" (p. 69). I recorded general observations about staff participants in field notes and did not identify individuals where I included sensory perceptions about the physical camp environment. These notes frame and give context to the written stories.

Semi-structured discussions with participants

I led an informal, audio-recorded discussion at Camp Mountainside two weeks after collecting stories. The group discussion (six participants) was almost an hour long. The participants focused on reflections on their writing activities. I used prompts such as, "tell me more about what you wrote about." When necessary, I requested elaborations and examples. The discussions took place in the staff lounge, and they helped clarify participants' written texts and triangulate the written texts. Elements from the transcript of the discussion frame, clarify, and support the analysis.

Process for interpreting adolescent nature stories

I aimed to collect "naive descriptions of the experience as it is lived rather than collect embellished and narrative accounts, based upon what the participant believes is expected by the researcher" (Osborne, 1994, p. 171). For these reasons, narrative inquiry is an appropriate method for exploring adolescents' experiences in nature, as it encourages participants to describe their unedited perceptions of these experiences. Narrative inquiry is a methodology that encourages and enables participants to record their expressions of their experiences without deconstructing or explaining them (Clandinin & Connelly, 2000). In my study, participants retold stories about their experiences in nature without instruction on what kind of story, negative or positive, recent or in the past, or any definition of what nature meant—forests, lakes, mountains, air, or animals.

Qualitative research aims to produce rich and comprehensive depictions of participants' interpretations of their experiences. The researcher must commit to respecting the meaning of the experience from the participant's perspective and reinterpreting the texts as a whole. Once the stories are collected, the researcher must develop rich, thick descriptions of the stories and interpret them. To do this successfully is to manage moving parts: from the unique individual stories toward a collective story; from the comprehensive narrative to the researcher's understanding of the story; from understanding to interpretation and meaning-making (Cooper et al., 2012). With the Camp Director's assistance, I organized a group to confirm that my understanding was an acceptable interpretation of each participant's story.

Analysis of texts

I transcribed all the texts that qualified for the study, immersing myself in the stories. Typing required reading and re-reading to verify transcription accuracy. I read all the stories to

gain an overview of the experiences, then re-read them, focusing on "highlighting significant sentences or quotes that provide an understanding of how the participants experience" the event (Creswell, 2018, p. 79). I attributed significance to notions that recurred and were repeated.

I viewed the texts—as I did with my life experiences and the evolution of my school—through the lens of a caterpillar's metamorphosis. The egg represented time and space, the larva connected to sensory observations, the chrysalis depicted the internal—emotional and spiritual—experiences reported by the adolescents, and eclosion framed the participants' relational narratives. This supports my premise, echoed in the *Forrest Gump* quote, that events are experienced rhizomatically, sequentially, or, at times, through both frameworks simultaneously. Similarly, the process of becoming — as I have experienced in my journey as a nature-inspired teacher and observed in the adolescents' nature narratives — follows a fluid, dynamic framework. It shifts between these modes of understanding, encouraging growth, adaptation, and interconnectedness, reflecting the ever-evolving relationships within nature itself.

To address the question, "Why should we care?" I interpreted the participants' understanding of their experiences through Deleuze and Guattari's (1987) lens of becoming. I also kept in mind the goal of reporting narrative inquiry: to contribute to the existing body of knowledge by providing insights into unique experiences (Clandinin & Connelly, 2000). During each phase, I compared their experiences to mine and, where relevant, supported their assertions with existing research. In this way, qualitative research distinguishes itself from quantitative methods through its ability to illuminate, describe, and interpret human experiences that cannot be summarized numerically.

In the next chapter, I begin my narrative by describing how I embarked on my journey toward becoming a nature-inspired teacher. I start by illustrating a contradiction between current research, which views teacher identity as a dynamic and evolving process, and the teacher training approach in Montréal, which operates under the assumption that teacher identity becomes fixed upon licensing—positioning certification as a lifelong status.

CHAPTER 4: Sharing my Story—Significant Plateaus

In this chapter, I explore key ongoing events—some linear, others more rhizomatic—that shape my journey toward becoming a nature-inspired teacher. I detail how a blend of formal teacher training, an exclusive Christian upbringing, immersive experiences on Indigenous land in Canada's North, teaching in Africa, and the creation of a unique high school that integrates a nature-inspired pedagogical approach. Through my narrative, I trace the evolution of my thinking, showing how exposure to natural environments and a growing affinity for nature deeply influenced my pedagogical philosophy and the way I apply it to curriculum development. Each experience, whether rooted in tradition or emerging from unexpected connections, has played a pivotal role in shaping my approach to teaching and learning in harmony with the natural world. Clandinin's focus is on life narratives, framing the chapter as a reflective journey (Clandinin, 2006; 2007; 2013; Clandinin & Connelly, 2000). Clandinin (2007) writes, "The most defining feature of narrative inquiry, as we have presented it, is the study of experience as it is lived" (p. 69). In this chapter, I connect my personal history with professional growth tied to Clandinin's (2006) idea of living and retelling stories as part of meaning-making.

Teacher Training in Montréal's Changing Educational Landscape

Drawing on Clandinin and Connelly's (2000) emphasis on life narratives, I frame this chapter as a reflective journey, weaving together personal experiences with professional growth. I integrate Clandinin's concepts of places and temporality to situate my stories within a broader institutional and cultural context. They write, "When we see an event, we think of it not as a thing happening at that moment but as an expression of something happening over time" (p. 29). For example, I contrast the teaching experiences of my mother-in-law with the evolving educational paradigms I encountered during my teacher training in Montréal's shifting educational landscape. This relational and temporal perspective highlights the interplay between my personal and professional identities, underscoring the transformative power of storytelling in making sense of my pedagogical journey. My mother-in-law is a teacher. She taught for 48 years, full-time and part-time, in public elementary schools in Montréal. After graduating from high school, she completed a one-and-a-half-year teacher training program at MacDonald College in association with McGill University and earned a lifelong teacher's license. She is currently 85 years old and is still licensed to teach in any elementary school in Québec. There have been many changes in the classroom and society; yet she is not required to update her training. In 1957, her first year of teaching, there were no computers, cellphones, or even handheld calculators. ADHD, ASD, and ODD, were letters in the alphabet, not diagnoses. Her classes in Montréal West were homogeneously white, English-speaking, upper class, Protestant, students. If she walked into the same classroom today, she would see that the structures have not changed—a teacher-centric layout with rows of desks and chairs, board (updated to a Smartboard), and bulletin boards displaying students' work. A change she would notice would be the demographic of the students and their IEPs[9]. Another is the number of students who take prescription medication. Approximately 23% of Canadian children and youth aged 3 to 19 years used at least one prescription medication each month between 2012 and 2017. The types of

[9] IEP - Individualized Education Plan. Students assessed with learning disabilities are given allowances such as extra time for tests and exams, a reader, large print, and a scribe.

medications commonly prescribed include treatments for asthma, attention deficit hyperactivity disorder (ADHD), mood disorders, and learning disabilities. Specifically, about 60% of children with ADHD, 71% with mood disorders, and 51% with asthma were prescribed medications during this period.[10] She would also notice the increased parental involvement in their child's education, the role of technology—iPads, computers, calculators, AI such as ChatGPT, cellphones, and access to good and bad sources of information, videos, and pictures. My mother-in-law began teaching at age 18. According to the McGill Policy Association (2023), the average age of high school teachers in Québec is between 30 and 49. Fewer people are going into university programs for teaching. In 2019, Serge Striganuk, Dean of Education at the University of Sherbrooke, noted a 20% decrease in applications for teaching degrees for elementary school teachers over the previous decade[11]. The dropout[12] rate for male high school students in Québec in 2009 was 24.6%.[13] For comparison, the average in Japan in 2021 was 1.27% and in Finland 3.4%[14]. I tell my mother-in-law's story to analyze constants and changes in teacher training programs in Québec. I next reflect on a formative experience with my elementary school teacher to illustrate how personal narratives inform professional identity. While Clandinin's (2000) narrative inquiry, grounded in Dewey's theories, emphasizes a three-dimensional space—where past, present, and future experiences unfold along a continuum—this framework does not necessarily contradict Deleuze and Guattari's (1987) rhizomatic approach. Rather than viewing temporality as a linear progression, we can see it as a dynamic entanglement where experiences are not neatly sequenced but constantly intersect and influence one another. The personal and social dimensions Clandinin describes resonate with the rhizome's interconnectedness, acknowledging that a teacher's becoming is shaped by multiple, overlapping influences rather than a singular, forward trajectory. Just as a rhizome grows in unpredictable directions, narrative inquiry can trace the lines of flight—moments of rupture or transformation—within a teacher's story, allowing for a more fluid, multidirectional understanding of professional growth. This synthesis invites us to see narrative as both structured by temporal continuity and fractured by moments of deterritorialization, holding both coherence and multiplicity in tension.

I next reflect on a formative experience with my elementary school teacher to illustrate how personal narratives inform professional identity. This reflection aligns with Clandinin's (2013) perspective on narrative inquiry, which emphasizes understanding how past experiences shape present and future practices.

My first introduction to the influence of a teacher began when I was in grade five. A young, recently graduated, enthusiastic teacher taught us geography. She had us memorize all the countries and capitals in Africa. By year end, we all knew regional climates, mountain ranges, lakes and rivers, and each of us was the classroom expert on one country. Due to her impact, I developed an insatiable desire to see Africa firsthand. When I was 18, I visited Kenya on a Canadian Government-sponsored (CIDA) business trip to present library automation technology at a conference in Nairobi. I extended my stay to visit Maasai villages and take a safari trip. At age 25, my wife and I visited Ghana, West Africa and decided to stay for two years. An International School became my first formal teaching experience. I attribute my desire to

[10] https://www150.statcan.gc.ca/n1/pub/82-003-x/2021003/article/00001-eng.htm

[11] https://universityaffairs.ca/news/news-article/teacher-supply-goes-from-glut-to-scarcity-in-a-few-short-years/

[12] Secondary graduation rate represents the estimated percentage of people who will graduate from secondary education over their lifetime.

[13] In 2021, the rate decreased to 17.4% (https://www.reseaureussiteMontréal.ca/)

[14] OECD indicators

experience Africa to the influence of my grade five teacher. I may have also adopted her model of enthusiasm for her subject and caring for individual students. I elaborate on my experiences in Ghana and their profound impact on my development as a nature-inspired teacher later in this chapter in the section titled *Teaching in Africa—A Whole New World.* In 1985, standing at the front of an auditorium in Windsor, Ontario, presenting the latest version of library automation software to Canadian librarians, I experienced my Damascus Road moment, that is, I saw the light - I became aware that I had a talent for sharing knowledge, and engaging an audience, and that my true passion lay in inspiring others, and decided to pursue a teaching career. The new Apple Computer Company had launched their Apple Plus and Apple 2e microcomputers. Simultaneously, printers and barcode scanners were developed, and library automation was born. My boss, the founder of a library supply company—catalogue cards and book covers—saw the future where books would be barcoded and scanned to track loans. I was hired, out of high school, to ship packages from a warehouse. Microcomputer technology was exploding, and I was quickly brought from the warehouse, into the office and trained to demonstrate this new technology to librarians. One benefit of this new position was that I had to travel around North America, Europe, and as previously mentioned, Africa.

At this point in the dissertation, I reflect on a turning point or epiphany, a hallmark of narrative inquiry that illuminates significant moments shaping identity (Clandinin & Connelly, 2000). They suggest that "Identity is shaped by the narratives of experience that are lived and told, retold, and relived. These moments are shaped by the personal, social, and institutional landscapes in which individuals find themselves" (Clandinin & Connelly, 2000. p. 95). Here my transition—*line of flight*—to teaching aligns with Clandinin's emphasis on critical life events in constructing professional identity.

For three years, I presented new technologies to librarians. In a pivotal moment, I realized that what I was doing was teaching—and I thrived on those moments when I could point people in a direction towards becoming more knowledgeable about a subject. That's when I knew I needed to pursue a career in teaching, though I was certain that my audience would not be librarians. After skipping grade six, I grew to dislike school. It was not difficult, just irrelevant. High school sports kept me engaged, but after graduation I vowed that I would never enter another school. Ironically, my first job took me into schools to demonstrate automation technology to librarians. With my desire to teach and my desire to live in Africa, I returned to Concordia University, to pursue a degree in English literature. Upon graduation, my wife and I moved to Accra, Ghana and I found a job teaching grade six students at an International School. Although I had taught Sunday School and librarians, this was my first classroom. Most teachers remember their first classroom experience—the good and the bad moments. For two years, I taught English to grade-six students who were 11 to 12 years of age. The school follows the British system, complete with the vestiges of colonization. I embraced this challenge without training in pedagogy, curriculum development or objectives, or classroom management. In my tin-roofed classroom with waist-high walls, the outdoors beckoned. Taking students outside to learn in and from nature was seen as a quirk of me being a white Canadian man because none of the Ghanaian teachers did this. I encountered pushback when I took my students outdoors when it was raining. In some traditional Ghanaian belief systems, (Akan and Ewe) deities are associated with rain (Tindan et al., 2024). Asaase Yaa (the Earth Goddess) is considered to be responsible for fertility and agricultural prosperity. Being outdoors during rainfall is thought to induce sickness as the rain carries spirits. Being an international school, my classroom was not monolithic. I was exposed to ideas from many African and European traditions. My experience

was affirming—I was a teacher who needed to figure out who, where, and what I was, in order to teach.

In 1989, the Berlin Wall fell, and East Germans flooded into Ghana with Russian and German as their only languages. My wife and I were hired by the German Embassy to develop an English language program for German immigrants. In evenings and on weekends, I found myself working with adults again. The students were keen and quick learners; however, the challenge I was looking for was absent.

Returning to Montréal, I knew I wanted to teach and that I needed a challenge. This awareness helped me focus my search for employment. I contacted a private school in Montréal to inquire about work. The private school in Montréal had an identity crisis. To survive financially, it could not specialize—accept only one kind of student. There were three identifiable groups in the cafeteria at lunchtime—international students, students with learning disabilities, and students with behavioural deficits. Occasionally, the lines were blurred by students from other countries who had either learning or behavioural difficulties. Being a private school with tuition fees of around $20k annually, it catered to a select socio-economic level. Originally only a high school, this school expanded its reach and built an elementary school only blocks away. The school did not ask for government funding so it could accept students who did not possess an English language eligibility certificate.[15] This allowed the school to accept many students from other countries—often diplomat's children and children of parents with short-term business contracts.

I was hired to teach "disruptive" adolescent students. I was given a classroom, and students who were deemed unmanageable were sent to me. I taught most of their courses. The administration gave me the latitude to test various approaches. Taking students to a park or on field trips was new. Many had never been horseback riding, and our trip to a ranch was educational for teachers and students. It was in this school that I introduced storytelling. Every Friday, ten minutes before the end of the lunch hour, students could sign up to tell a story to their peers in the cafeteria. Ten-minutes-on-Friday (TMOF) was a hit. Even with the opportunity that this setting afforded, within the framework of a school, it was difficult to run my program the way I felt would have the greatest impact. My students were still expected to wear uniforms and respond to bells. There was also the stigma for my students of being in the "special" program. Simultaneously, because the program appeared to be fun, some students became intentionally and strategically delinquent so they could join my classroom. In 1995, I pulled my program out of the private school and founded Education Plus High School. Founding my school is a rhizomatic movement that reflects narrative inquiry's focus on innovation, resistance to traditional structures, and relational pedagogy (Clandinin, 2013). My description of this process as a series of connections, disconnections, and reconnections, mirrors the relational and emergent nature of narrative inquiry. I was unaware of the logistical and legal requirements involved in establishing a school. I rented a room in a building in the Snowdon neighbourhood of Montréal, hired two part-time teachers, and bought a chalkboard and a punching bag. The school's first two students were adolescent boys who had been expelled from their previous school for throwing rocks at passing cars. By the end of the week, we registered our third student and by Christmas, we expanded to a second room. I

[15] In Quebec, an English Language Eligibility Certificate is a document that allows students to attend publicly funded English-language schools. Quebec has specific language laws under Bill 101 (the Charter of the French Language), which aim to preserve the French language. According to these laws, children are generally required to attend French-language schools unless they meet certain eligibility criteria.

sent the Ministry of Education of Québec a handwritten fax from the convenience store below us, indicating that we had opened a school. I was quickly informed that I needed a license to operate a school. By return fax I requested a license. Over the course of the first year of the school, we were given a one-year license, we moved into a larger space, and we hired teachers. The Ministry of Education of Québec has renewed our license annually for the past 30 years. We've since purchased a two-storey building in the borough of St-Laurent, where we now operate a private alternative high school for grades 10 and 11. Initially, our typical student was an "angry young man"— a teenaged boy whose behaviour was too aggressive and unruly to be tolerated in traditional classroom settings. (This was before ADHD was more widely diagnosed.) That soon became "angry young people" to include teenaged girls with similar profiles. Many of the earlier students experimented with drugs and had gang affiliations. Over the years, our school's approach has attracted more students with ADHD and ODD. More recently, many of our students live somewhere on the autism spectrum, struggle with gendering, or are clinically depressed. With the altered fabric of our clientele, our approach has evolved to meet the new and varied academic and social needs. We do not have student uniforms, and we do not ring bells to signal the end/start of classes. Classroom size, on average, is seven students per teacher. In our relationship-inspired, immersive, holistic approach to learning, where students and teachers are outside of the school every day, and with intentional outings every week, students are active participants in their learning. Many of the outings take students into natural areas—parks, rivers, lakes, and forests. Activities include hiking, kayaking, and biking. Journaling and photo-journaling allow students to record and reflect on their learning. Presentations to their peers allow the students to consolidate and share their learning. I expand on my school later in this chapter in the section titled, *The Evolution of Education Plus High School.*

University teacher training in Montréal

Montréal is home to four Universities—Concordia, McGill, Université de Montréal and University du Québec à Montréal. Working together to train and certify teachers, each university focuses on specific areas of education. McGill offers, in English, a B.Ed. program in elementary and secondary education with specific courses on critical pedagogy, social justice, and inclusive education. Concordia, the other English language university, offers degrees in Teaching English as a Second Language (TESL), Early childhood education, and Adult Education. Similar to McGill, Université de Montréal offers primary and secondary teacher certification in French. Université du Québec à Montréal offers a French language B.Ed. program with emphasis on education for students with special needs. Next, I reflect on the tension between formal structures and experiences. Clandinin's concept of stories to live by is evident here, as I navigate institutional frameworks while cultivating an emergent, nature-inspired teaching philosophy (Clandinin & Connelly, 1995).

My TESL degree from Concordia (2001) granted me the formal certification to teach primary and secondary classes in Québec. Yet, in a Deleuzian sense, this degree did not *make* me a teacher—it was merely an *apparatus*, an institutionally sanctioned point of entry into the field of education. It was a form of *territorialization*, a way to codify my presence within the system, but it did not make me a teacher. Before earning my formal teaching degree, I had already spent eight years in the classroom, developing lesson plans, mentoring students, and navigating the complexities of education. More than that, I founded a school rooted in experiential learning, where students explored nature as a living classroom and the curriculum adapted to their

curiosities and needs. This act alone broke free from traditional educational molds—blurring the lines between teacher and learner, classroom and world. My journey as an educator wasn't marked by a single moment of certification but by an ongoing process of growth, innovation, and reflection—proof that teaching is a becoming, not a static achievement—an act that itself was a *deterritorialization* of the rigid boundaries and conventional expectations of education. The founding of the school was a *rhizomatic* movement, an emergent network of relationships, knowledge, and practices. The school was a new form of territoriality, but one that did not rigidly prescribe the roles of teacher and student. The experience was always about movement. Without a teaching license, though, the possibility of my present trajectory—toward becoming a nature-inspired teacher—would not have materialized. The license itself became a node in a larger rhizomatic network, a deterritorialized point of access that opened new possibilities for exploration. It was not the end goal but a transformative point in an ongoing process of *becoming*. Just as a rhizome grows unpredictably, branching out into multiple directions, my path as a teacher has never followed a linear route. Instead, it has been a series of connections, disconnections, and reconnections that have formed a continuously evolving assemblage. The license didn't define me; it allowed me to slip into new flows of becoming, toward a pedagogy that is always in the process of becoming *nature-inspired*, always shifting, never fixed, and always responsive to the environment in which it is situated. The use of rhizomatic growth as a metaphor aligns with Clandinin's framework, which accommodates non-linear narratives and interconnections between personal, professional, and cultural contexts. This metaphor directly applies to Clandinin's emphasis on narrative as a dynamic and evolving process (Clandinin, 2013).

When I began my teaching degree at Concordia University in 1998, the curriculum did not include any courses specifically focused on Nature-based or Land-based pedagogies. In September 2010, Concordia became the first Quebec university to offer a bachelor's degree with a major concentration in First Peoples studies. (Bishop's University in Lennoxville had a certificate program in Indigenous studies.) McGill currently offers a program with an emphasis on land-based education. It explores ways of re-establishing learning within nature, blending Indigenous perspectives with ecological and environmental awareness. Courses such as EDEC 313: Indigenous Land-Based Pedagogy provide an immersive, field-based experience where future teachers engage with Indigenous worldviews and ecological systems through activities including canoeing and foraging.

Today, teacher training programs in Québec reflect a rich diversity of philosophical approaches and specializations, each contributing to the preparation of future educators for a changing world. However, there are gaps in the integration of Indigenous knowledge, outdoor learning, environmental stewardship, and practical experience compared to approaches in other countries. For example, at The University of Melbourne in Australia, Indigenous initiatives have led to the development of Indigenous language courses, and the creation of Ngarrngga[16], a collaboration between the Faculty of Education, Indigenous Studies Unit and Indigenous Knowledge Institute that provides research and resources for educators. Research about cultural appropriation is ongoing (Rochecouste et al., 2017), and Indigenous researchers suggested the development of "hybrid spaces" (p. 162) where inter-cultural exchanges are safe and supported. I suggest that addressing these gaps is essential for enhancing the effectiveness of teacher education programs and ensuring that future educators are equipped to teach about

[16] https://www.ngarrngga.org/

environmental consciousness and cultural awareness in their classrooms. Future research should explore the impact of these diverse philosophical orientations on teacher retention and student outcomes, ultimately contributing to the continuous improvement of teacher education in Québec.

Christianity and Nature: An Examination of Theological Influences on My Pedagogical Approaches to Nature-inspired Education

The internal conflict I describe next reflects the interplay between my personal and cultural narratives, a central theme in Clandinin's (2000) work. I use narrative inquiry to reconcile these competing influences, showing how they shape my identity and pedagogy (Clandinin, 2013). My teaching career began in tension, caught between my profound and evolving experience of nature and the rigid boundaries of my religious upbringing. This conflict was not just an intellectual exercise but a deeply felt struggle. Intimate encounters with the natural world introduced values that clashed with the dogmatic teachings I was raised to uphold. My reverence for the cycles, interconnectedness, and autonomy of nature began to challenge the prescriptive, hierarchical beliefs ingrained from childhood. This dissonance created an internal dialogue that shaped my approach to education, as I learned to balance honouring tradition with embracing a nature-inspired understanding of the world. This journey laid the groundwork for a teaching philosophy that harmonizes spiritual reverence with ecological consciousness.

My religious upbringing played a foundational role in my evolution as a nature-inspired teacher. The extreme form of Christianity I experienced shaped my ontology, epistemology, and eschatology. Christianity's teachings often frame humans as distinct from and dominant over nature, as seen in Genesis, where humans name and rule over animals, and God curses the land and provides clothing from animal skins. This dichotomy, reinforced by the apocalyptic visions of the New Testament, influenced both my religious formation and academic training. Scholars like Passmore (1974) and Jung (1987) highlighted how such religious worldviews perpetuate a sense of human separation from nature, affecting culture, discourse, and even scientific inquiry. Recognizing and transforming this deeply entrenched belief system was crucial to becoming a nature-inspired teacher. Christianity, while diverse in beliefs and practices, is shaped by interpretations of the Bible, which comprises the Old Testament (rooted in Jewish traditions) and the New Testament (centered on Jesus and his followers). Paul's metaphor of Christians as wild olive shoots grafted into a Jewish olive tree illustrates shared roots and distinctions. Over centuries, denominations and sects arose due to doctrinal and cultural differences. These variations shape perspectives on nature, with some traditions, like Franciscan Catholicism, fostering closer connections to nature than others, such as evangelical Calvinist traditions.

I was raised in Montréal in a denomination called The Exclusive Brethren, a Protestant group that branched from the Plymouth Brethren. Rejecting denominational labels, they identify as followers of Christ. Until the age of 29, I lived at the epicenter of this group. My wife and I transitioned to an Open Brethren denomination after having our first child, leading to public excommunication from the Exclusive Brethren. Despite the sect's extreme doctrines, its paradoxical perspective on the human-nature relationship introduced me to nature's didactic power. It was through Christian-sponsored, nature-based events that I first recognized the profound influence of nature on my understanding and growth.

Ecological numinosity—the invisible spirit in nature

My research explores the human relationship with and understanding of nature, and the transformative effects of Nature-inspired Pedagogies. As Clandinin (2007) explains, narrative inquiry connects personal experience with professional practice, providing valuable insights into educational contexts. In this section, I reflect on how my Christian upbringing, shaped by specific doctrinal teachings, has influenced—and continues to shape—my perspective on nature and humanity's role within it. I discuss how my personal experiences often conflict with these religious teachings and explore the ways in which I navigate and alleviate the tension that arises from this discord and how this tension develops a unique pedagogical approach.

The doctrines of the Exclusive Brethren are rooted in a literal interpretation of scripture, encompassing both the Old and New Testaments. The teachings I received were unequivocal: every event in the Old Testament occurred exactly as described in the King James Version of the Bible, with each event foreshadowing the life, death, and resurrection of Jesus Christ. For example, the Jewish Passover in Exodus, where a lamb is sacrificed and its blood placed on the doorposts, prefigures Christ's crucifixion. Similarly, the story of Noah's Ark (Genesis 7) actually happened as described and was also an allegory of finding refuge from God's righteous anger through faith in Christ (Luke 17:27). I was taught that God created everything ex nihilo—out of nothing. According to this view, God exists eternally, distinct from His creation, a concept introduced in the first verse of Genesis: "In the beginning God..." (Genesis 1:1, NIV). Genesis recounts ten divine commands that brought forth terrestrial and celestial life. This theme is echoed in scriptures like Psalm 33:6: "By the word of the Lord the heavens were made, their starry host by the breath of his mouth," and Hebrews 11:3: "The universe was formed at God's command, so that what is seen was not made out of what was visible." Within this worldview, the land was commanded to produce vegetation and all non-human life (Genesis 1:24), but humans—at least the first man—were created last and directly by God "from the dust of the ground" (Genesis 2:7). Unlike other beings, humans were distinguished by God breathing "into his nostrils the breath of life, and the man became a living being" (Genesis 2:7). Accordingly, this act conferred a unique status upon humanity, reinforcing the belief in my version of Judeo-Christianity that humans stood apart from the rest of creation. The Adamic covenant, which framed humans as rulers over creation, commanded them to "rule over" and "have dominion over" all living things (Genesis 1:26) and to "be fruitful and increase in number; fill the earth and subdue it" (Genesis 1:28). This interpretation emphasized human superiority over the natural world. While not all biblical exegesis views Genesis literally, my upbringing did. I was taught that, just as God was separate from His creation, humans—created in His image—were likewise separate and elevated above the rest of nature. This theological framework shaped my understanding of nature as something to oversee and control, rather than something to be in harmony with. It fostered a sense of anthropomorphism, projecting human characteristics onto God and creation, further solidifying the divide between humanity and the natural world. In meetings, we would read passages from the Old Testament to provide a foundation for the New Testament's events and teachings. I was taught that the prophecies and teachings of the Old Testament lent credence and authenticity to the events and doctrines in the New Testament, including Jesus' teachings.

However, reflecting on Jesus' outdoor pedagogy (e.g., Mark 6) and identifying it as a model for nature-inspired teaching aligns with Clandinin's (2007) emphasis on experience as a source of meaning. Through recounting my personal experiences with nature-based teaching, I demonstrate how narrative inquiry intertwines personal history with professional insights. In the

New Testament, Jesus uses nature as a metaphor in His teachings. His parables include imagery of seeds, vines and branches, fig trees, and sheep. Additionally, He demonstrates His unity with nature by walking on water, calming storms, and raising the dead. Most of His teaching took place outdoors, in gardens, on mountains, and by the sea. A particularly striking example is found in Mark 6, where, in a remote place, He shares His teachings, instructs the people to sit on the grass, and then miraculously feeds them. This may have been my first exposure to nature-based teaching. One of the clearest examples of Jesus' rhizomatic pedagogy can be found in the Parable of the Sower (Mark 4:1-20). In the next section, I analyze this parable to demonstrate how a pedagogical approach, when applied consistently and intensely, helps students—myself included—internalize its teachings. This parable showcases how Jesus uses nature in a non-linear, interconnected, collaborative pedagogical approach.

Non-Linear Pathways: Multiple Responses to the Seed

In the Parable of the Sower, Jesus compares the Christian gospel to a seed sown in different types of soil, each symbolizing variations of people's receptiveness: the path, rocky ground, thorny ground, and good soil (Van Eck, 2014). Seeds that fall on the hard path are eaten by birds, symbolizing those who hear the gospel but fail to understand. The seed that falls on rocky ground sprouts quickly but withers because it lacks roots, symbolizing those who receive the gospel with joy but fall away in the face of difficulty. The seed that falls on thorny ground grows, but the thorns choke it, representing those distracted by life's worries, wealth, and desires. The seed that falls on good soil takes root and grows, producing a harvest, symbolizing those who hear and accept the gospel. In a rhizomatic sense, the seed's growth is not predetermined. Multiple factors—including the type of soil (the person's heart, context, and disposition), external pressures (the birds, thorns, and rocks), and the environment—determine the outcome. This metaphor reflects a non-linear pathway to spiritual understanding, where individuals respond differently to the message based on their unique contexts. The path the seed takes varies, symbolizing the diverse responses of individuals to the gospel.

Multiplicity and Interconnectedness: A Web of Meanings

In a rhizomatic model, knowledge grows in interconnected nodes, spreading in multiple directions. Similarly, the parable invites multiple interpretations. While one straightforward interpretation is that the types of soil represent different kinds of people (or hearts) receiving the Word differently, the metaphor can be expanded. The same person might respond differently at different stages in life, influenced by internal and external factors (Van Eck, 2014). For instance, good soil may not always be "good"—someone who once received the Word well might later be choked by life's thorns. The rocky ground could represent someone whose initial enthusiasm matures into profound spiritual growth. The parable's open-ended nature invites a web of interconnected meanings. Galston (2012) notes that, unlike an allegory, a parable asks the hearer to imagine a different reality, "awakening" them to a new experience of the world (p. 80). Like rhizomatic learning, Jesus' teachings do not offer fixed answers but encourage listeners to explore various angles and contexts.

Collaboration and Multiplicity of Perspectives: The Parable's Open-Ended Nature

In the parable, Jesus teaches publicly and then explains it to His disciples privately (Mark 4:10-20). This dynamic reflects the rhizomatic nature of community learning. Jesus doesn't provide a fixed explanation. Instead, the disciples engage in a collaborative process, questioning and interpreting the parable together. This mirrors the exploratory nature of rhizomatic learning, where understanding emerges through group reflection. The disciples' inquiry into the parable highlights teaching as a two-way process, where teacher and student interact to uncover deeper meanings. The parable's unpacking is a rhizomatic experience—it branches out through different interpretations and reflections.

The Parable of the Sower and Seed (Mark 4:1–20) has been interpreted diversely across historical and cultural contexts, reflecting its evolving nature. Early Christian communities emphasized perseverance amid persecution, as Gerhardsson (1968) noted. In medieval Europe, Krulick (2020) emphasized moral interpretations, with soils symbolizing virtues and vices. In the 20th century, liberation theology offered a more radical interpretation, viewing the parable as a metaphor for resistance against oppression (Snodgrass, 2008). These shifting interpretations underscore the parable's rhizomatic quality—its meanings grow, adapt, and intertwine with the spiritual, social, and political contexts of those who engage with it.

The Little Flock Hymnal

Clandinin and Connelly (2000) argue that narrative inquiry involves collaboration between the researcher and broader cultural or community stories, where multiple interpretations coexist. They suggest that an individual's experience must be acknowledged on its own terms while recognizing that it is shaped by broader social processes (p. 62). Weaving my personal reflections with doctrinal and ecological implications, I demonstrate this collaborative approach to narrative research. The liturgical practices of the Exclusive Brethren are based in a hymnal, *A Few Hymns and Some Spiritual Songs Selected in 1856 for the Little Flock*. This hymnal reinforces the denomination's doctrines through song, with many hymns sung a cappella due to the prohibition of musical instruments, becoming deeply ingrained in me during my teenage years. Müller and Lindenberger (2011) suggest that group singing fosters interpersonal coordination, while DeNora (1995) notes that music shapes behavior, perception, and thought. The repeated exposure to nature-themed hymns profoundly shaped my connection to nature. Nature is referenced frequently in these hymns, often metaphorically, evoking rhizomatic networks. These metaphors suggest a fluid, evolving interpretation, allowing for multiple meanings depending on context. Water, a recurring biblical theme, appears in many hymns, often symbolizing life and transformation, from the creation narrative to baptism. Nature in these hymns is both positive and negative—soothing and beautiful, yet also dangerous and uncomfortable. The hymns explore the tension between Christian doctrine and nature, reflecting a vision of the world where Earth is to be endured or enjoyed temporarily, with a renewed world awaiting believers.

Nature and Environmental Stewardship

The tension in Christian teachings about nature—between dominion and stewardship—has been highlighted by scholars like Luetz and Leo (2021). Some Christians advocate for environmental stewardship as a moral duty, grounded in biblical teachings (Hayhoe & Schwartz, 2020). However, the notion of "subduing" nature complicates this perspective. Christianity's traditional view of human superiority over nature contrasts with contemporary environmental concerns, signaling a shift towards sustainability and interdependence (Clark &

Dickson, 2003). As a nature-inspired teacher, reconciling my religious upbringing with broader ecological perspectives remains a challenge. I find myself balancing the framework of faith with the scientific understanding of the world, embracing uncertainty and cultivating openness to diverse perspectives. Through my experiences, I am learning to appreciate the beauty and complexity of nature while acknowledging its sacredness. The tensions between my Christian upbringing and the broader ecological worldview have been integral to this process of becoming, allowing me to integrate these divergent perspectives into a holistic pedagogical approach. Through this lens, learning is not merely about acquiring knowledge, it is an evolving, co-creative journey involving the learner, educator, and nature. Educators and students continually *become*, shaped by seasonal changes, natural cycles, and the unpredictability of nature. At this stage of *becoming,* I recognize that there is much I do not know. My current experiences are filtered through the lens of prior knowledge and interpretations, making me aware of how little I understand compared to what I once thought I knew. My religious upbringing shapes my development as a nature-inspired teacher, albeit in unexpected ways. I can appreciate design in the world, with or without a designer. When I witness sculpted icebergs, rainbows, autumn foliage, butterflies, snowflakes, waterfalls, lightning, or tornadoes, I see development and beauty without invoking the Divine. Yet, paradoxically, I have no difficulty accepting Indigenous claims of a spiritual connection to the Land. In many ways, my religious background equips me to be open to multiple perspectives, guiding me as a Nature-inspired teacher to embrace uncertainty and honestly say, "I don't know."

Indigenous ontological and epistemological encounters and their influences

In this section, I reflect on my attraction to and experiences in Indigenous settings and my research into Indigenous research methods—separate from my literature review—to explore in more detail how these non-linear yet interconnected life events continue to shape my development as a nature-inspired teacher. Much like my religious upbringing, my relationships and interactions with and learning from Cree, Mohawk, and Inuit acquaintances have left an indelible mark on me and are evident in my pedagogical approach. Clandinin and Connelly (2000) noted that personal narratives serve as entry points for broader contextual understanding. To facilitate this nexus, I focus on my experiences as a lens for understanding broader educational and cultural themes.

Clandinin (2013) emphasized exploring tensions and dissonances as critical to narrative inquiry. Here, I recount early memories, using narrative inquiry to explore how formative experiences shape my current worldview, illustrating the dynamic interplay between personal history and epistemological development. I was born in Montréal to two Western-rooted, white, Christian parents. My education followed the traditional Western paradigm—property is bought, owned, and sold, and nature is separate from humans. During my childhood, the New Age Movement (Heelas, 1996; Berger, 1999; Ruach-Midbar, 2006) was born. Many of its tenets include a closer relationship to nature than I was permitted in my Christian framework. (Other branches of Christianity were more attuned to God's creation as is evident in the life and actions of individuals such as St. Francis of Assisi[17].) This movement is associated with a focus on individuality, feminist thought, and, most relevantly, an ecological worldview (Bruce, 1996), all contrasting and seen as a perversion of biblical teachings according to my upbringing. Christian

[17] *Canticle of the Sun* by St-Francis of Assisi

leaders, in my religious sphere, warned teenagers against the dangers of the New Age Movement with its counter-culture rejection of the dominant worldview. I experienced cognitive dissonance when reflecting on my training, secular and religious, and on my experience when I was in a forest, by a river, or on a mountaintop. At a young age, I read many library books about nature, survival in the wild, and living on the land. Without the analytical tools I acquired and developed later in life, books like *White Fang* and *Call of the Wild* by Jack London, presented me with a filtered, unexamined, romanticized, settler-colonial perspective of human interactions with nature. Farley Mowat's books *People of the Deer* and *Never Cry Wolf*, which are sympathetic to and respectful of Indigenous cultures and communities, often betray a paternal attitude, framing Indigenous peoples as victims rather than fully autonomous agents. (Reading the writings of Indigenous authors such as Windchief, Kovach, Wilson, and Absolon help present a more balanced and nuanced understanding of Indigenous experiences.) However, influenced by the readings of my youth, I was drawn to nature, specifically to Northern Canada, and I set out to have my own experiences.

In the spring of 1985, I embarked on the first of many journeys to the Moose Factory Cree Reserve on James Bay in Ontario. The trip began with a series of train rides: from Montréal to Toronto, then Toronto to Cochrane, and finally the renowned "Polar Bear Express" from Cochrane to Moosonee. To reach the island reserve of Moose Factory, I took either a water taxi (a canoe) in the summer or, in the winter, a skidoo across the frozen water from Moosonee. In the summer, I set up camp on Davis Island, nestled between the mainland and the reserve. I walked around the reserve kicking a soccer ball until a group of adolescents joined me, and we organized a soccer game. This connection developed into friendships, and eventually I was invited to live with a family for the duration of my stay and during my winter visits. At 21, I had never experienced life on a reserve.

One striking and lasting observation was the absence of fences. The band council managed the area, but no one claimed ownership of the Land or the houses on the Land. There was little upkeep of the houses, buildings and of the land itself. Many homes I visited were rundown and had encountered some level of vandalism. The grass was uncut. Damaged and destroyed vehicles littered the reserve. Garbage was looted and strewn everywhere by semi-domesticated dogs. To prevent the dogs from following and barking, I was taught to bend down and pretend to reach for a stone to throw. One of my trips coincided with the spring duck hunt. Schools were closed, and all commercial activity came to a halt. Most of the reserve relocated to temporary shelters—traditional wigwam-styled canvas tents near a lake, to wait for ducks returning from the south. The meat would fill freezers until the fall moose-hunting season.

Another of my trips to Moose Factory took place over New Year's, 1992. Two indelible memories include reduced activity and New Year's Eve celebrations. The temperature was steadily close to -30º Celsius. Outdoor activity was at a minimum. It was a time to visit, eat (moose stews) and sleep. Although they have adequate clothing for this climate and transportation—generally skidoos in 1992, now four-wheelers—the residents remained mostly indoors. Outdoor activity was mainly excursions from one indoor activity to the next—the community hall, the arena in Moosonee, houses of friends and family, or the church. The roads and paths were empty throughout the days and nights. I was impressed with the way life was dictated by seasons and weather. In Montréal, we have well-insulated houses, an underground city, and jobs that require attention year-round. On New Year's Eve, with nothing to do, my wife and I went to sleep early. At midnight we were awakened by what sounded to us like a war. The people of Moose Factory were outside firing their guns—loud and erratic bursts of rifle fire and

shotgun blasts; the marking of the passage of time incorporated their guns, their survival tools, in the celebration.

My trips to Moose Factory taught me many things. However, the one that stands out most is the relationship the people of the Cree Nation have with the Land. Before these trips, I viewed Land as a space, surveyed, measured, and delineated with walls and fences. It was property. Land was subdued, maintained, and cultivated. Land was used as a means of production—either agriculturally or industrially or sold as a residential space, to be resold when the value increased. My first forays into Indigenous Land allowed me to see that there could be a different relationship with the Land. At this time, I did not understand the claim of Spiritual connection with the Land which I will discuss later in this chapter.

In May 1986, I made my first trip to Kuujjuaq on Ungava Bay in Northern Québec. This time, I pitched my tent in an old fishing shelter on the outskirts of town. After spending time in town, I was invited to speak on the local radio station. My English was translated into Inuktitut. We could play soccer in the mornings and early afternoons, but by dusk, the blackflies were unbearable, and we had to seek shelter. One event that remains with me was a hike with a group of young Innu. Kuujjuaq is above the tree line, and the land is a scattering of permafrost and tundra. On a hill outside of town overlooking the Cossack River, one of the youths observed movement in the bush. He picked up a rock, loaded his slingshot and fired. Hitting the bird, most likely a ptarmigan, he ran and wrung its neck. Quickly, they built a fire, prepared the bird, and cooked it. I was impressed with their cooking abilities and willingness to share their snack. In cities this kind of activity is seen as cruel and is reported to the police. I do not recall the young people offering a prayer of gratitude to the bird for giving its life so that they could eat and live, as is often recorded in Indigenous literature (Absolon, 2011; Wilson, 2008). However, I do remember that the event was as common to the group as stopping by a fast-food restaurant for french-fries would be for a city-dwelling teenager. I also recalled my initial hesitation to eat the leg of a bird whose heart I had seen beating and then the surprise I had at the gamey taste I experienced in this unprocessed meat.

In communities above the treeline, life depends on the Land. In Kuujjuaq, many Indigenous people will only survive with access to the caribou herds, the fish stocks, or the colony of seals. Dependence makes the perception of the relationship with the Land of greater importance than a city-dweller might experience. Cut off most of the year from supply shipments, people in Kuujjuaq and villages to the north develop an understanding and conversation with the Land to ensure their survival and the survival of their families. New technologies—four-wheeled vehicles, drones, better guns and fishing boats, and radar for locating fish, facilitate the harvesting of food. However, survival requires physical work and training to prepare for changes in the environment and ecology.

Clandinin and Connelly (2000) highlighted the importance of reflective practice in narrative inquiry for professional transformation. My shift in pedagogical approach is a direct outcome of reflective practice. Here, I share how my reflections on my time in Canada's North became part of my pedagogical transformation. My journeys to northern Canada provided profound insights into the possibilities of human-Land relationships. I experienced wide-open spaces and an interdependence between humans and the Land that were new to me, a city-dweller. These experiences not only disrupted many of the foundational beliefs I had long held but also resonated with the elemental truths of my childhood. I saw people living symbiotically with the Land, forging deep connections that honored its rhythms and limits, while embracing a way of life that placed reciprocity and respect at its core. This harmony challenged my urban

understanding of progress, teaching me that sustainability is not just a concept but a relationship with the natural world.

Immersing myself in the lives and traditions of the Cree Nation on James Bay and the Inuit of Ungava Bay became a pivotal part of my evolution and development as a teacher. Most teachers would not consider starting a class without a structured, teacher-centric, lesson plan. I began listening more to my students and considering what they wanted to learn, encouraging them to develop their own approaches to knowledge. It was as though I had transitioned from the dormant egg phase of growth to the larval stage, beginning to inch forward, nourished by new knowledge and experiences. This phase, marked by curiosity and consumption, was essential preparation—intellectual and spiritual sustenance—as I continued developing and becoming.

Some researchers draw inspiration from Indigenous knowledge systems to highlight a positive correlation between nature, natural settings, time spent in nature, and learning. Indigenous peoples, with their understanding of this connection (Hickey & Fitzmaurice, 2017), provide valuable perspectives. These understandings draw from Indigenous worldviews that position humans as one and the same with nature and emphasize spiritual connections with the Land (Wilson, 2008). Simultaneously, a comprehensive body of Canadian and U.S. research, within a worldview that perceives humans as separate from nature, points to the loss of connection between human beings and the natural world (Berry, 1977; Muir, 1976; Nabhan & Trimble, 1994; Strong, 1995). Charles Taylor (1989) challenged prevalent Western anthropocentric views of nature, writing that the modern emotional attachment to nature has nothing to do with nature itself or its semiotic (meanings) or symbolic (representation) messaging but rather with its effects on us—it is a receptacle for our feelings. This statement aligns with the deep ecology philosophy of Arne Naess (1973)—that all nature has an intrinsic value (Lehman, 2015, p. 134) and that "we can only understand how we are normally in touch with the cosmos when we see that we are not disembodied, detached, contemplators, but rather, embodied, involved coping agents" (p. 165). Based on the observation that the terrestrial ties for many people in the United States and Canada are loose or severed, Kellert (1993) suggested that it is only reasonable to witness the ways Indigenous peoples lived and survived on the Land to "understand if not rekindle that connection" (Kellert, 1993, p. 11) if people want to develop a guide to a more robust, perhaps more overt, relationship with the Land.

Nelson's (1993) study in remote Northern Alaska exemplifies Indigenous research, highlighting a "symbiotic relationship" (p. 210) between nature and the Koyukon who live there. Nelson noted that the Inuk caught fish using the same method used by polar bears. According to Nelson (1993), the Koyukons' understanding of engagement with the Land is synergetic so that "the tree I lean against feels me, hears what I say about it, and engages me in a moral reciprocity based on responsible use" (p. 13). Nelson concluded that not only do humans connect with nature, but that nature connects with us (Nelson, 1993). This refinement suggests that humans' symbiotic relationship with nature is reciprocal—that not only do humans impact nature, but that nature impacts us.

Clandinin (2013) advocated for narrative inquiry to bridge multiple knowledge systems. Questioning and subsequent exploration exemplify how narrative inquiry encourages integrating diverse epistemologies through reflection and storytelling. Many Indigenous academics in Canada use vocabularies such as "intimate and inseparable" (Takano, 2005, p. 475) and "spiritual" (Wilson, 2008, p. 89) to describe Indigenous relationships with the Land or nature. According to Wilson (2001), Indigenous epistemologies include an understanding that "knowledge is relational. Knowledge is shared with all creation…It is with the cosmos; it is with

the animals, with the plants, with the earth that we share knowledge" (p. 177) and that it is the first step toward understanding Land-based pedagogies. He described "pedagogy of place" where the Land is an epistemological starting point and a catalyst for learning (Wilson, 2008, p. 87). Absolon (2011), Wilson (2008), and Kovach (2009) affirmed that Indigenous knowledges originate, disseminate, and reveal themselves as individuals develop a relationship with the Land. Vicarious experiences and remote intellectual engagement can never replace first-hand, physical, whole-body experience, or as Wulff (2010) explains, the Indigenous relationship with the Land emphasizes "relationships over knowledge, participation over expertism, and holism over specialized understandings" (p. 1). Vella-Brodrick and Gilowska (2022) supported this claim, stating that cognitive functioning increases when young people connect with nature. Beery and Jørgenson (2018) explained that this effect may be due to many factors, including the olfactory and tactile senses' engagement in their learning experience. Bashan et al. (2021) claimed that these traces in urban-dwelling consciousnesses are likely less evident than the remnants observed in people who live in a closer relationship to the Land. They label this the "extinction of experience" (p. 353). Thomashow (2002) suggested that the extinction phenomenon reduces students' ability to maintain attention and initiates a decline in "ways of thinking and learning about the natural world" (p. 81) as people(s) lose their active, physical connection with nature. Is closeness to the Land and claims of a special relationship a question of time, physical proximity, both, or neither? For example, can Canadian farmers claim a special relationship with the Land? Is it different or equivalent to an Indigenous relationship? Can a lost relationship with the natural world be reclaimed by spending time or getting physically closer to the Land? Battiste (2013) stated that "Indigenous knowledges are diverse learning processes that come from living intimately with the Land" (p. 33). Wilson (2008) claimed that "Indigenous ontology is actually the equivalent of an Indigenous epistemology" (p. 73) or that *being is knowing*. Indigenous peoples maintain that Land is teacher. Is it possible to develop a meaningful connection between Indigenous worldviews and Western perspectives? I suggest that we can accommodate both without compromising the integrity of either by fostering respectful dialogue, embracing multiple ways of knowing, and seeking common ground through shared values and reciprocal learning. Absolon (2011) wrote about "allied theories" (p. 148). She continued, "Allies are essential, but understandably, we walk with caution" (p. 148). Her contention is that many Indigenous researchers feel obliged to start with Western frameworks and methodologies and then try to move toward Indigenous ones. Absolon proposed research where "Indigenous methodology is central, and allied theories and methods *are* secondary" (p. 149) asserting Indigenous voices on Indigenous issues. I notice more cooperation and efforts to reconcile worldviews as I research Land-based and nature-based pedagogies (Tuhiwai-Smith, 2012; Kovach, 2009; Simpson, 2017; Tallbear, 2013).

However, not all Indigenous researchers are keen on building bridges between Indigenous and Western research approaches and methodologies. Argentinian critic of, and expert on colonialism, Walter Mignolo (2007) took umbrage with place-based and environmental education trends that claim cultural and political neutrality but perpetuate and continue to buttress colonial structures. He pointed out the differences between Western and Indigenous approaches to pedagogy (specifically place/land-based pedagogies) that include directionality, relationality, and different epistemological understandings. Western approaches to nature are often unidirectional—humanity colonizes nature to do its bidding. The Indigenous understanding is that we *are* nature—what we do to our natural environment, we do to ourselves. An

Indigenous pedagogical approach includes learning "about, with, and in the land" (McCoy et al., 2016, p. 3).

The predominant Western relationship between nature and humanity is exploitative. It views nature as a resource to serve humankind—it "calls for human dominion over the earth and its creatures" (p. 4). In this paradigm, minerals and oil in the ground are "natural resources." The Indigenous approach considers "all living things as equal and that all things are living" (Bang et al., 2014, p. 45). McCoy et al. (2016) argued that this methodology "promotes an integrative view of nature and people, histories, power relations, and community that can challenge settler-colonial assumptions" (p. 4). A colonial-positivist understanding of knowledge is that knowledge is out there, waiting for discovery. Some Indigenous approaches suggest we construct knowledge through experiences, stories, dreams, and a relationship with the Land. This framework is problematic for some Western paradigms that refuse to consider dreams and experiences as "evidence" or "data." Although some people have physically and emotionally separated themselves from the Land (some to a greater extent than others), traces of connection remain and are evident in descriptions of experiences of events like sunsets, snowstorms, rain, flowers, ants, and mountain ranges. For example, research by Miller et al. (2019) suggested that spiritual and emotional sensations may be synonymous, as both activate the same regions of the brain.

Land-based pedagogies and land-based education are emerging fields of study. Land is the collective term used in Indigenous research for all land (urban, rural, forested, barren, subterranean), including all water and air. In Indigenous paradigms, Land is not only material. It is also spiritual, emotional, and intellectual (Lowan, 2009). Land as "teacher and conduit of memory" (McCoy et al., 2016, p. 9) is a common theme in Indigenous epistemologies. Hawaiian researcher Meyer (2008) wrote, "One does not simply learn about the Land, we learn best *from* land" (p. 219, italics original). Yup'ik researcher Kawagley (1999) wrote, "it is through direct interaction with the environment that Yupiaq people learn" (p. 88). The understanding is that there is an interconnectedness of all things—cosmos, pedagogy, people, spirits—with the primacy of Land being paramount. This understanding conflicts with Western paradigms in which land is divisible and owned property (McCoy et al., 2016). Bang et al. (2014) summarized the Indigenous perspective of Land with "Land is, therefore we are" (p. 44).

An Indigenous understanding of Land separates place-based pedagogies from Land-based pedagogies. Sobel (2013) defined Place-based education as "… the process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science and other subjects across the curriculum" (p. 7). According to Scully (2020), critical Place-based education (cPBE) is a step in the right direction—addressing environmental concerns, social justice, and outdoor education—but it does not address settler colonialism, racism, and white privilege (p. 227). Even with these disagreements, there appears to be common ground and cooperating ideas between Indigenous frameworks and Western worldviews.

Indigenous worldviews are not monolithic. Absolon (2011) pointed out many differences even among Canadian Indigenous peoples. Stories about creation, reverence given to the animals, and the languages used to tell the stories are all different. However, there are valuable commonalities. She observed, "across the nations, we do share commonalities in that our worldviews are earth-centred philosophies, express strong ties to the land and hold reverence for Spirit and ancestors" (p. 57). In dominant Western paradigms, accepting spirituality as a data source is often problematic. Hill (1995) wrote that Indigenous views consider

> …the humanization/subjectification of not only people, but animals, plant life, rocks, all of Creation. This is not "mythology," or even religion; it is a way of life, a Native consciousness. The "awareness" is complex in that it not only accounts for this world but acknowledges the guidance of the Spirit world. "Knowing" involves a developed sense which can inform behaviour and influence social action. Dreams, visions, and prophecies still direct and inform Indigenous people in their everyday consciousness. (p. 64)

Although primary Indigenous research is not accessible to non-Indigenous people, there is ample evidence of the proximity of Western and Indigenous worldviews to explore a connection that might reconcile the two.

I have come to understand that my life experiences are intricately interconnected with my academic pursuits and influences. What Deleuze and Guattari (1987) term "a-signifying ruptures" (1987)—moments of directional breaks—continue to evolve, forging new connections and opening diverse pathways. Recognizing that I am developing as a nature-inspired educator, I can trace how rhizomatic pathways of connections, ruptures, and heterogeneous events continue to shape this *becoming*. The interconnectedness of my early exposure to nature, nature-steeped religious upbringing, time spent on Indigenous land, and scholarly research partly explains my inclination to further cultivate my growth as a nature-inspired teacher. It also fuels my aspiration to sow seeds of understanding for students and fellow educators who feel similarly interconnected.

Another rupture and line of flight, as described by Deleuze and Guattari (1987), connects my time in Canada's North with my evolving understanding of nature's rhizomatic ways and my current nature-inspired pedagogical approach. The next section in this narrative shares my time in Nairobi and Accra, where my exposure to new cultures and their unique relationships with nature profoundly influenced my perspective and practice as a teacher. In Canada's North, I came to see nature as a living network of connections, deeply rooted in Indigenous ways of knowing. This rhizomatic understanding, inspired by Deleuze and Guattari (1987), shifted my thinking about education. Teaching, to me, became less about hierarchy and more about fostering interconnected, organic learning processes—mirroring the web-like structures I observed in nature.

My experiences in Nairobi and Accra introduced a rupture in this understanding. These places offered entirely new cultural interpretations of the natural world. I saw how nature was not simply an external force but an integral part of daily life, spirituality, and social practice. These encounters opened new lines of flight—new possibilities for thought and practice that expanded my perspective. Deleuze's (1994) concept of *becoming* resonates deeply with my journey. Rather than arriving at a fixed identity as a teacher, I see myself as constantly evolving, shaped by the cultures, environments, and people I encounter. My time in Nairobi and Accra allowed me to weave their cultural narratives into my teaching practice, creating a more inclusive and dynamic pedagogy. Clandinin's (2013) narrative inquiry provides a framework for understanding how these lived experiences inform my practice. By reflecting on my story—how I've moved from Canada's North to new cultural landscapes—I recognize how these experiences have become part of my rhizomatic journey as an educator. Today, my nature-inspired pedagogy reflects these connections, emphasizing the fluidity of learning and the importance of grounding education in diverse, interconnected experiences.

Teaching in Accra: A whole new world

In 1982, the company I worked for received a grant from the Canadian International Development Agency (CIDA) to attend a conference in Nairobi, Kenya. My boss invited me to join him at the trade show, marking my first visit to the global south. My understanding of Africa had been shaped solely by the passionate teachings of my fifth-grade teacher. Upon arriving first in Mombasa and then in Nairobi, I was struck by the contrast between wealth and poverty. In downtown Nairobi, a five-block radius housed two international hotels and a handful of Western-style restaurants. The convention center, designed to resemble a thatched-roof hut, was modern and air-conditioned. Beyond this core, however, lay tin-roofed shanties with dirt floors, sporadic water supply and an obvious lack of sanitation. Our stay included ten days of exploration, culminating in a safari at Amboseli National Reserve, where we witnessed lions devouring gazelles, cheetahs pursuing impalas, and monkeys attempting to steal our food. I found myself conflicted. Africa embodied all that my fifth-grade teacher had described, from the red earth to the looming threat of malaria. Yet, as a tourist, my interactions with Kenyans were limited. The hotel served as a barrier, isolating us from locals. Our purpose for being in Kenya was business-related, and we engaged primarily with international businesspeople at the conference, with limited conversation opportunities during the safari, aside from our guides.

In 1989, my wife and I honeymooned in West Africa and returned to live in Accra, Ghana, the following year. We left Montréal with all our belongings packed into four duffle bags and arrived in Accra with tourist visas. With a degree in English Literature from Concordia University, I secured my first formal teaching position at an international school. My role involved teaching English to three sixth-grade classes, with a remuneration of approximately $1.00 CAD per day. Upon arrival, I was handed a class list, a box of chalk, and a paddle for disciplining "bad students." When I made it clear that I would never resort to physical punishment, I was met with laughter, but I never struck a child. My classroom featured a tin roof that reverberated loudly during the rainy season and was enclosed by four two-foot-high cement walls. A chalkboard occupied one end of the room, with rows of desks and matching wooden chairs in straight lines. From my classroom, we could see open fields dotted with palm, mango, and banana trees, and could hear vendors calling out their wares along nearby trails. This classroom setting was unlike any I had encountered in North America, yet it was precisely what I had envisioned Accra might be like. I vividly recall standing at the front of the room reflecting, "This is the realization of your fifth-grade dream." Although *becoming* a teacher involved many previous events and interconnections, having a classroom with students was a *plateau* (Deleuze and Guattari, 1987) that would *rupture* and continue to move—*line of flight*—and connect with new teaching experiences.

On the first day, I entered to find my students standing beside their desks, arms akimbo, in complete silence. I greeted them with a question, "Good morning, class?" to which they responded in unison, "Good morning, teacher!" I admitted I was unfamiliar with the protocols and would need their guidance. They remained silent until I suggested they take their seats. Most of the students were from various African nations and appeared perplexed by my informal and friendly demeanour. Conversations with my colleagues taught me that their teacher training emphasized strictness, severity, and formality. The first book I was assigned to teach was *Charlotte's Web*—a tale about a young girl, a spider, and a pig on an American farm. Given the setting, I found the choice amusing and absurd, as the story felt entirely incongruous and anachronistic. My first of many encounters with cultural differences regarding nature arose when

I asked my students to collect spiders for us to study in relation to Charlotte in the book. To my surprise, they flatly refused. This moment challenged my romanticized perceptions of African nature. From the comfort of my fifth-grade classroom, African animals and insects seemed adorable. However, my twelve-year-old students informed me that nature was, in fact, dangerous.

Ghana[18] is home to some of the deadliest snakes, including mambas and vipers, as well as its share of venomous spiders, such as black and brown widows and sac spiders. One day, while using a langa-langa (a long blade) to cut grass, I turned over a rock and discovered a curled-up scorpion. Tsetse flies transmit parasites, and mosquitoes spread malaria. From March until late November, the coastal winds sweep inland, making Ghana a humid, tropical country with temperatures ranging from 25ºC to 37ºC. Between December and February, the Harmattan winds shift to come from the north, carrying sand from the Sahara Desert resulting in slightly lower temperatures and the onset of rain. Excessive rainfall can lead to floods and landslides, while insufficient rain results in crop failures and potential famine. For many Ghanaians, nature is not merely picturesque sunsets reminiscent of *The Lion King*; it can be life-threatening. This understanding gives rise to cultural narratives and spiritual beliefs. Because rain is essential for sustaining life, many beliefs are intricately linked to it. I still recall the bewildered expressions on my students' faces when I suggested we dance in the rain during one of the tropical downpours—a common pastime during my childhood summers in Canada. Their refusal to join me stemmed not from a fear of getting wet but from a belief that there were spirits in the rain we ought not to disturb.

In 1983, Ghana suffered a famine due to drought. With crops and livestock in short supply, many people survived by hunting wild game or consuming "bush meat." This practice persisted during our time in the country. I remember one instance when our driver abruptly stopped while driving through the bush, dashing off into the underbrush only to return with what appeared to be a lifeless groundhog. "Supper," he declared with a smile. Wild animals in Ghana remain scarce, and the destruction of animal habitats often occurs not for economic gain but for human survival.

My time in Ghana is pivotal in my development as a nature-inspired educator, continually challenging and reshaping my perceptions of the natural world. While nature can be formidable in Canada, it rarely posed a lethal threat to me in my urban life. From an early age, I was taught to embrace and admire nature's beauty. In developed North American cities, we have systems and infrastructures to protect us during most natural disasters. (Recently, these protections are being tested with greater storm intensities as well as an increase in individuals who are experiencing homelessness.) In Ghana, if the rain does not come each year, people will die. Where we lived, people depended on the trees to produce mangoes and coconuts. I never saw anyone fishing for fun—it was about survival for the coastal tribes. I realized that a generalized, romanticized view of nature must be scrutinized and tested. My experiences in Ghana taught me that within my classroom in Montréal, there may be students whose beliefs about nature differ significantly from mine, viewing it as a source of anxiety or something else other than wonder. As I develop a nature-inspired theory of *becoming*, I navigate cultural differences and the complexities of choices when human survival hangs in the balance.

[18] Ghana facts and stats come from The World Bank, National Geographic, and the Ghana Statistical Service.

The Evolution of Education Plus High School

This section shares the story and background that shaped the creation of Education Plus. This narrative aligns with Clandinin's emphasis on starting research from personal experiences and stories to create a meaningful inquiry process (Clandinin & Connelly, 2000).When I founded Education Plus, I was determined that it would be fundamentally different from traditional schools. It needed to be informal, flexible, and centered around an approach that allowed students to progress at their own pace. At the time, I hadn't studied formal pedagogical methods; all I had to guide me were my academic and life experiences. My own high school years had been shaped by a traditional, rigid system—one that was authoritarian, focused on rote learning, and based on a repetitive cycle of memorization, regurgitation for tests, and eventual forgetfulness. I cannot claim to be the conceiver, designer, or builder of the pedagogical model that eventually evolved into the rhizomatic structure of Education Plus. Upon reflection, it emerged organically influenced by multiple factors and people, growing in direct response to counter this system. At that time, I was unaware of the influence my summers spent in the countryside, the nature-centered elements in my Christian upbringing, time spent living in Canada's northern Indigenous communities, teaching in Accra, Ghana, and raising two children, would have on my pedagogical approach. Each of these experiences deeply shaped my understanding of education and led me to create a space where learning is dynamic, interconnected, and rooted in the natural world. In many ways, Education Plus became a reflection of these formative influences—an educational model that values growth, exploration, and the organic development of knowledge, rather than the rigid structures of traditional schooling.

Egg: The dance of serendipity and inevitability

The egg's journey of growth and transformation involves both random, fortunate events (serendipity) and unavoidable, predetermined forces (inevitability). Similarly, my journey as a nature-inspired teacher blends elements that, in hindsight, seem inevitable with those that were purely serendipitous. In May 1995, I was walking with a close friend and mentor along a wooded path at a summer camp in the Eastern Townships of Québec, Canada. Having returned from two years of teaching in Africa, followed by two more years at a private school in Montréal, I found myself at a crossroads. As we strolled, my mentor asked me, "If money were no object, what would you do in the field of education?" At that moment, he gave me permission to dream. With four years of teaching experience behind me, I had a sense of what I would do. By the time we completed our walk, I had shared my vision for an alternative high school. Over the following weeks, we continued to meet for coffee, refining the idea. By September, we had rented a space—two small rooms with a shared bathroom down the hall from an art school—registered the business name and reached out to two students who were expelled from my previous school, letting them know that a new school was now open. We named it Education Plus High School, though the two boys soon nicknamed it "EdPlus." By October, we had ten students enrolled, and it occurred to me that I should inform the Québec Ministry of Education about the school's existence. From the convenience store beneath our rented space, I sent a handwritten fax to the Minister of Education, outlining our plans. The Minister's reply was swift: I required a license to operate a school. My response was naive but equally swift— "Please send me a license." By the

start of the next school year, we had our first renewable licence, and we moved to a larger location. Two years later we bought our current, two-storeyed building.

Larva: First steps

During the first years, most of our student body was composed primarily of angry young men. Outside of the school they were violent and often in trouble with the authorities. Most came from affluent families with parents who had earned advanced academic degrees. Although their frustrations, anger and delinquency converted to metro fights, petty robbery, graffiti, and vandalism, this behaviour was rarely manifested in the school. They appeared to respect the place, and the people connected with Education Plus. I was often the first telephone call they made when they were injured, in trouble, or arrested. Slowly, however, the school's population diversified to include more women. At the same time, we saw an increase in sadness and a decrease in anger, and we began receiving applications from adolescents struggling with depression, bullying, self-harm, and suicidal thoughts. Many were experiencing what was called "gender dysphoria" or identified as gay, bisexual, or trans[19]. A third change in student profile happened circa 2010 when students were being identified as having Attention Deficit Hyperactive Disorder (ADHD) and Oppositional Defiant Disorder (ODD). After the COVID-19 pandemic, many of our current applicants have been diagnosed with autism spectrum disorder (ASD).

We meet each change in the general profile of the student body with pedagogical approach changes to the required curriculum. These changes included the use of technologies, smaller classroom sizes, individual versus group work, and online or hybrid learning. Our trademark approaches and methodologies have withstood changes in culture, generational fads, and researched strategies. Our unique pedagogical approach, based on trial and error, input from a broad spectrum of academic and educators, and my academic research, includes eliminating grade levels, promoting project-based and cross-curricular learning, incorporating a school-wide daily current-events class, emphasizing holistic teaching, and offering a nature-inspired outdoor program with weekly outings. Regardless of our student population, these approaches keep our students' minds and bodies engaged in their learning. Ninety percent of our enrolled students graduate and attend higher learning environments—CEGEP and vocational training centres.

Chrysalis: The evolution of nature-inspired teaching

For me, this stage was twofold: my ongoing and developing teaching practice at Education Plus High School and my formal training at Concordia and McGill Universities like the changes inside the chrysalis. When I founded Education Plus High School, I had an English Literature degree from Concordia University. When licensing the school, the Ministry of Education of Québec strongly suggested that I earn a provincial teaching certificate, and I returned to Concordia to earn a degree in Teaching English as a Second Language (TESL). The core of this degree, language acquisition, grammar, and history of the English Language, had little bearing on my current teaching situation, but it allowed me to teach at the primary and secondary levels in Québec. After this degree, I recognized the value of academic learning to frame and define my current teaching experiences. I enrolled in McGill's Master of Educational

[19] The acronyms LGBTQ, LGBTQ2S, and LGBTQIA+ were not commonly used until the mid-1990s.

Psychology program and earned a Master of Education Degree. As I outlined earlier in the section of this dissertation on University Teacher Training in Québec, I was rarely exposed to alternative or Indigenous ways of teaching or learning, and the concept of nature-based learning was never mentioned.

However, I was confronted with the changes that were happening in the ways adolescents were learning and the reality that not much was changing in curriculum or pedagogy in Québec. The classroom of the 2000s still looked like the classrooms in the year 1960—front facing rows of desks, the teaching was still teacher centred, and there was little noticeable change in the content being taught. For example, I taught the required history of Québec and Canada course for many years. Nothing in the curriculum or in the literature, textbooks or workbooks, mentioned Residential Schools or the Sixties Scoop. The focus was on the lack of sophistication of Indigenous peoples when compared to Europeans. (This focus has changed more recently.) The approach to most subjects is still what Freire (1970) labeled "the banking concept of education" (p. 45) where the teacher deposits information into students' heads or what Freire calls "receptacles" (Freire, 1970, p. 45).

At University, my exposure to the contradiction between the changes in our students' ways of learning and our static way of teaching resonated with me and my ongoing teaching experience. The use of technologies was on the rise, headphones and music devices (Walkmans, iPods) were prevalent, and individualized education plans (IEPs) were trending. My formal education, together with my upbringing, my religious indoctrination, and my travels highlighted that many of the things we were doing at Education Plus might be the change in approach many students needed. For me, University learning framed, labeled, and helped me refine many of our current pedagogical approaches.

My doctoral studies included a course in the Theology department on Indigenous Spirituality. This class was the first of my four degrees in which the professor took the class on a field trip to Kahnawà:ke Mohawk reservation near Montréal. It was also my first formal teaching about Indigenous spirituality and the Indigenous belief about their connection to the Land. What I learned resonated with our pedagogical approaches at Education Plus. The school's values that are articulated in our 7Cs: Community, Cooperation, Communication, Courage, Critical Thinking, Consequences, and Compassion are similar to Indigenous sacred teachings, humility, love, truth, honesty, respect, wisdom, and bravery and mirror some of the values embedded in Indigenous worldviews, relational, reciprocal, respectful, and responsible, (Absolon, 2016, p. 117). During this developmental stage, my teaching approach shifted to become more nature-inspired. I took great efforts to ensure lessons could be taught outdoors, using a holistic and immersive teaching approach. Not every lesson was an overwhelming success but as I refined this approach, as I read more research, and as I visited countries—Finland, Sweden, Denmark, and Iceland—where nature-based teaching is more advanced, I developed new approaches and ways of bringing students to the required curriculum. This shift in my teaching philosophy holds significance beyond personal growth—it reflects a deeper alignment with Indigenous worldviews and nature-based pedagogies that encourages holistic learning. By integrating these approaches, I not only expanded my own practice but also contributed to a learning environment that emphasizes interconnectedness, adaptability, and relational accountability. It highlights my rethinking conventional pedagogies and previously held views on the separation between humans and nature.

Eclosion: Taking flight

As the butterfly nears the end of its metamorphosis, the chrysalis begins to soften, and the outer shell becomes more fragile. This stage is often referred to as "emergence" or "eclosion." After the wings are hardened and the butterfly has gained enough strength, it takes its first flight—typically short—as it learns to maneuver and build up stamina. Similar to eclosion, Education Plus has now developed into an independent school that showcases its pedagogical approach to other educators and educational administrators. Clandinin's (2007) three-dimensional narrative inquiry space of time, place, and relationships informs this section as I highlight the school's growth and adaptation over time, situating the development of Education Plus within a community context. Our flexible nature of teaching demonstrates the evolving relational dynamics between students, teachers, and the broader educational environment.

Before COVID (2020) Education Plus was already different from most high schools in Québec. It focused solely on the final two grades of high school (grades 10 and 11 in Québec), classes were capped at 10 students per teacher, intentional weekly outings immersed students in core and optional subjects, all framed in a private, alternative school environment. We do not divide students into grade levels. Students learn all their subjects together—much like a one-room schoolhouse. The caveat is that regardless of our approach, students' varying abilities, or their access to curriculum content, to graduate from high school, the Ministry of Education of Québec requires students to pass standardized exams in core subjects (English, French, Math, Science, and Québec History). Our challenge is to create nature-inspired, holistic, and immersive lessons that cover the required material in a way that students will learn and be able to understand and respond to a standardized exam.

Nature-inspired, holistic, and immersive teaching

Clandinin (2007) posited that narrative inquiry examines how knowledge is constructed and understood through relationships with others and the environment. In this section, I describe a pedagogy that reflects the deep interconnection between students, nature, and the educational space. Nature-inspired education can effectively occur indoors, using plants and animals as components of the learning experience. However, akin to Indigenous Land-based learning practices, research and experience highlight the benefits of outdoor instruction. Beyond the essential physicality of departing the classroom, students are exposed to fresh air, invigorating body and mind. This transition necessitates decision-making, as students must contemplate what to wear—whether to don rain gear, hats, gloves, or jackets—as well as who to partner with on their journey and how closely to follow their teacher. The outdoor setting invites exploration and experimentation, allowing students to choose between established paths or the risk of shortcuts. Engaging in activities such as fording a river, navigating hiking trails, and climbing over rocks transforms these moments into invaluable teachable experiences, wherein nature—often manifesting through the laws of gravity—serves as the teacher. While some educators express concerns about the distractions that accompany outdoor learning, my experience reveals a different narrative. Initially, students may be captivated by their surroundings, but with repeated excursions beyond the confines of the classroom, they gradually acclimate to the outdoor environment, honing their ability to focus on the tasks at hand. These lessons are intentionally designed to promote holistic development, addressing not only the intellectual but also the

emotional, social, physical, and spiritual growth of students. By prioritizing interconnections among various subjects, the curriculum cultivates essential soft skills such as empathy and self-awareness, alongside core values including responsibility, cooperation, and respect for oneself, others, and the environment. The activities are immersive, inviting students to engage deeply with their learning experiences through the activation of multiple senses—ideally all of them. In this dynamic environment, students tend to integrate prior knowledge, personal experiences, and the insights of peers, enriching their educational journey. Lessons frequently incorporate project-based and collaborative learning approaches, empowering students to take ownership of their learning and develop a community of inquiry.

The COVID pandemic in 2020 was a catalyst change in the way schools were able to deliver curriculum. At the secondary level (grades 10 and 11 in Québec), standardized exams were discarded and the Ministry of Education entrusted the teachers and school administrators with the allocation of final grades. This allowed latitude to try new approaches and use fresh marking methods. Working from their homes, students could use materials available and familiar to them to immerse themselves in their learning. Creating art with spices, filming reenactments of historical events like The Battle of the Plains of Abraham with toy soldiers or plush toys, using pasta to create a Cartesian plane to do math problems, or finding a book in their house to read and review was easy for our students because these were methods we had already employed when school was in session. The difference was now that the exam pressure was removed, students could spend more time focusing on learning that happens incidentally, outside of the curriculum.

Figure I Students reading in a snowstorm

Currently, we leave the school every afternoon for outdoor immersive learning. This can be a ten-minute walk around the neighbourhood, or a 30-minute hike through a park or wooded area. Each week we spend one entire day outside of the school, often in nature - a hike up a hill, alongside a river, kayaking, biking, or climbing. It might be a trip to an art gallery, or museum, or music/drama event. Teachers plan lessons that draw from the students' immersive experiences. Applying Pythagoras' theorem to a tree tends to be more memorable for the students than my best drawings on a marker board. Strategies students must use to navigate the metro system or to climb Mont St. Hilaire teach critical thinking better than the best contrived role-play ever could. Reading a book—*Moon of the Crusted Snow* by Waubgeshig Rice—about outdoor survival during the winter in a snow fort, immerses all the students' senses and elicits more thoughtful journal and essay responses.

The evolving pedagogy at Education Plus High School closely mirrors aspects of eco-pedagogy, a branch of Paulo Freire's critical pedagogy (1970). While Freire's work focuses on the interrogation of social, political, and economic systems, eco-pedagogy extends this lens,

emphasizing learning that occurs *in*, *from*, and *through* nature (Blades, 2021 p. 295). Education Plus diverges from traditional environmental education, which tends to prioritize imparting knowledge about ecological issues while maintaining conventional values and objectives. What sets Education Plus apart is its student-centered approach, which prioritizes the individual needs of its learners over environmental concerns. Rather than beginning with an ecological agenda, this method foregrounds the pedagogical and social needs of marginalized adolescents, integrating nature-inspired, holistic, and immersive learning modalities into the curriculum. In this framework, the student, rather than the environment, becomes the central focus, ensuring that the educational experience is deeply personal and responsive to their unique context. Thus, the method becomes a tool that serves the student, rather than the other way around. This reimagining of pedagogy underscores the school's commitment to nurturing personal growth and resilience through an experiential and nature-embedded learning process.

Having the freedom of my own school allows me to explore innovative approaches and develop more easily as a nature-inspired teacher. I only need a single, general permission from parents at the beginning of the school year to take students on outings. This flexibility means that if an opportunity arises, we can quickly pivot, leaving behind the day's original plan. Students come to Education Plus expecting the unexpected—*rhizomatic tangents*, *ruptures*, and *new lines of flight*. After our first outings, they realize that I, too, become a learner, joining them in journaling, creating artwork, and presenting my work alongside theirs. Living in Montréal offers additional advantages: we have access to diverse natural spaces, parks, and riverbanks. Within a short bus ride, we can find ourselves by lakes, in forests, or climbing hills.

Nature-inspired teaching doesn't always require being outdoors; lessons can also occur in classrooms using natural materials or by simply employing the nature-inspired pedagogy of becoming, philosophy, and methodology that includes the following key concepts: teachers, students, and nature evolve together simultaneously in stages and rhizomatically; nature-inspired teaching/learning is holistic, immersive, unpredictable, relational, emergent, and transformative; nature-inspired teaching/learning experiences are driven by wonder and curiosity—more inquiry, fewer definitive answers; it intersects with eco-pedagogy encouraging stewardship and sustainable living.

Some of my most memorable classes involve sitting in a circle on the floor, passing around items like rocks or a wasp's nest, live reptiles, and encouraging tactile engagement. Whether indoors or outdoors, nature-inspired teaching is a philosophy that promotes a non-hierarchical, interconnected approach to learning, where understanding emerges from students' contributions to a shared pool of knowledge. In Appendix H, I share two lesson guides I have followed with my students. These are not traditional lesson plans, as these are meant to be adaptable and fluid. The first lesson uses a nature-inspired philosophical approach to explore Tennyson's poem *The Lady of Shalott* in an indoor setting, while the second lesson takes place outdoors, applying Deleuze and Guattari's (1987) theories to learning about linear equations. Ironically, the latter lesson explores linearity despite their emphasis on non-linear thinking. I include these to demonstrate that the required curriculum can be taught using a nature-inspired pedagogical approach. Both lessons foster a sense of *becoming* by positioning students as co-creators of knowledge, allowing their understanding to grow in unpredictable ways—like roots spreading underground. This pedagogical shift challenges standardized, outcome-based assessments, emphasizing instead the value of creative inquiry, personal connections, and ongoing reflection. Ultimately, these lessons cultivate a dynamic, responsive learning environment where knowledge is not transmitted but continuously constructed and reimagined.

While a nature-inspired approach may not be ideal for every student, young people enrolled in Education Plus often experience emotional, academic, and social benefits. Many arrive academically derailed, and for most, our approach helps them get back on track. More focused research is needed on how nature-inspired learning affects students, particularly adolescents with autism. Early studies (Friedman et al., 2024; Fan et al., 2023) primarily noted the challenges of bright lights and loud noises for focus and learning, but recent research highlights the positive outcomes and benefits when children with autism spend time in nature.

Sharing youth stories—both sequential and rhizomatic

So far, I have focused on my journey of becoming a nature-inspired teacher. However, the educator is just one part of the nature-inspired learning triad. I have yet to meet a teacher who wouldn't acknowledge the profound impact their students have on them. In my proposed pedagogy, I emphasize the dynamic, interconnected relationship between the educator, the learner, and nature, where all three are in a continuous state of becoming. In the next chapter, I reflect on adolescent nature narratives to explore how young people understand and make meaning of their experiences in nature.

CHAPTER 5: Analyzing Adolescent Nature Narratives

Clandinin and Connelly (2000) describe narrative inquiry as a "collaboration between researcher and participants, over time, in a place or series of places, and in social interaction with milieus. An inquirer enters this matrix in the midst and progresses in the same spirit, concluding the inquiry still in the midst of living and telling, reliving and retelling, the stories of the experiences that made up people's lives, both individual and social" (Clandinin & Connelly, 2000, p. 20). The following narratives reflect my collaboration with participants' personal transformations, their evolving relationships with nature, and the meanings they derive from these experiences. To be an effective teacher, it is essential to understand how students learn. Over time, as I listen to and observe students doing assignments, I gather insight into how they learn. Asking them to tell their stories gives me insights into their lives, who and what they value, and how they process and interpret events. To be an effective nature-inspired teacher, I must understand how my students experience nature. *Becoming* a nature-inspired teacher requires an ongoing exchange between the teacher, student, and nature. It is within the synergies of these three that transformation takes place. I selected the metamorphosis of a butterfly as a metaphor to frame and describe the complexities of the adolescents' experiences and development as they recall and interpret their time in nature. Throughout this chapter, I present the adolescents' narratives as they were written.[20] The texts represent their interpretations of their experiences. Then, I compare some of their interpretations with current literature and my experiences. In narrative inquiry, the researcher's story is inseparable from the participants' stories. Here, I embed my journey of becoming a nature-inspired teacher into the analysis, showing how my experiences intertwine with those of the adolescents and my students. This reflective approach resonates with Clandinin's (2007) emphasis on co-composing stories with participants.

Egg: Becoming and transforming linked to time

The butterfly's journey begins as an egg, symbolizing unrealized potential and reflecting the human experience of anticipating the future. Like infancy, this phase highlights how time serves as the backdrop for transformation, with life suspended between promise and becoming. The concept of time appears frequently in the participants' stories. The word is often preceded by adjectives such as "first," "great," "free," "hard," "real," "my," "invest," "our," "more," "same," "every," "multiple," "long," "much," and "good." Dana (CM)[21] described a new sensation of time—the cessation of time. She wrote,

> For me, it wasn't the view that was impressive; it was the silence. It was completely silent. Even up to now, I have never experienced something like complete silence. It was as if time stopped then, and everything became still. There was a slight breeze, but because we were the only ones around, there wasn't any noise. I don't even recall hearing

[20] To maintain authenticity, participants' texts are presented verbatim unless spelling and grammar errors impede the meaning.

[21] I use CM to identify Camp Mountainside and BC to identify Border Camp - both pseudonyms.

> my sister or my breathing, or maybe I had stopped breathing for a second. The serenity I felt was truly an eye-opening moment for me, and now I relate that feeling to nature.

Esther (CM) and a friend were catching fireflies in a field at night. Her experience of time was not chronological; she referenced an immeasurable period of time:

> We are both expected to act a certain way or not do certain things. Yet there we were acting in a stereotypically 'childish' manner and having the time of our lives. I think one of the many great things about working in a nature environment is how rejuvenating it can be.

Thinking through these two texts with the lens of *becoming* and *transforming* highlights the evolving nature of the self in relation to experience and environment. Dana described an experience of profound silence and stillness in nature, marking a moment of transformation. The silence represents a pause in time, a stillness that allows for an awareness beyond the ordinary—almost as if the speaker is *becoming* attuned to the deeper essence of nature. The transformation is internal: she moved from observing nature to integrating its serenity into her understanding. The stillness catalyzed this shift, indicating a moment of *becoming* aware and experiencing a transformative connection with the world around them. The reference to nature, as something that embodies this feeling, suggests that nature played a crucial role in her ongoing transformation, offering a space for personal growth and renewal.

Esther contrasted societal expectations with the freedom experienced in a nature environment. Acting in a "stereotypically 'childish' "manner, she and her companion broke away from conventional norms, allowing themselves to embrace spontaneity and joy. This was a moment of *becoming* in the sense that they were not constrained by predefined roles or expectations but instead engaged in an authentic expression of self. Nature acted as the transformative agent here, as the environment stimulated rejuvenation and encouraged new ways of being. The rejuvenating power of nature transformed them by offering a space where they could shed the external pressures and reconnect with a more carefree, playful state.

For Dana and Esther, *becoming* was marked by a shift in awareness and behaviour, influenced by nature's capacity to create moments of transformation. Whether through silence that opened a new way of seeing or through playful freedom that challenged societal norms, both narratives reflected a movement toward personal growth and renewal in the context of nature.

One of the most freeing aspects of teaching in nature is that there are no bells. In traditional school settings, the bell signals students to stop thinking about one subject and begin thinking about the next. In nature, subjects are not segregated, and time is fluid. Nature-learning allows teachers and students to relate experiences to a previous time, to experience time standing still when focusing on a sun-bathing turtle, or the acceleration of time, when we must return home and a student says, "is the class over already?" On kayak trips, watches and phones are put into drybags, and teachers and students paddle all day, not being regulated by mechanical time. The only indicator that time is moving is the position of the sun and the shadows it casts. Students, teachers, and nature then all experience time together as each is *becoming*.

Becoming and transforming linked to space

The initial insight into the meaning that participants attribute to nature centers around the notion that they describe it as a distinct space, separate and different from their ordinary or everyday space. Unlike Indigenous paradigms in which individuals experience themselves as integral components of nature, participants in my study described nature as a place they visit. They described leaving a place not experienced as nature and going to another understood and identified as *nature*. Their co-location with nature is impermanent. They described the primary location (most often the city) as less desirable, anxiety-laden, and noisy. They suggested that the secondary location (camp or a minimally human-curated natural space—lake, forest, or island) is peaceful and silent. This perspective may be idealized or romanticized for several reasons, including that it is a space and time away from home and parents, and nature affords them new and challenging opportunities. Ian (CM) wrote about his decision to leave his cabin and go to the outdoors:

> I stayed in bed for about 2 hours, tossing and turning. I couldn't do it. I decided to step outside, onto my porch and what I saw was incredible. The clouds had been wisped away and the night sky was clear and full of stars. I just sat there for awhile enjoying it all. Then I felt a want for more. I stepped off my porch and went to the back of the cabin.

He described his desire to leave the indoors because of his insomnia. Something drew him to the outdoors, and he measured his journey in steps. His first step is outside, a half-measure away from the structure of his cabin into the liminal space of the cabin's porch. In this space, he rested and experienced a sky full of stars. But he wasn't satisfied. Seduced by the sea of stars crowding the night sky, he took his second step off the porch, away from his insomnia and responsibilities and experienced a Walt Whitman[22] moment, who also left the uncomfortable space of the astronomer's lecture room and wrote,

> rising and gliding out I wander'd off by myself,
> In the mystical moist night-air, and from time to time,
> Look'd up in perfect silence at the stars.

Ian's time in nature allowed him to return to his bed and fall asleep. His connection with nature and its soporific effects were temporary. He wrote,

> I was able to go to bed afterwards and had a very good night of sleep, waking up refreshed. It didn't last the whole next day, but it was enough to make it worth it.

Santo (CM) wrote about leaving the luxuries of his house to go camping in his backyard.

> I was 10 years old and I had wanted to go camping for a while now but to be honest camping is not something very common in Mexico ... I had a quick fix to this. I would

[22] Walt Whitman - When I Heard the Learn'd Astronomer

> place my camping tent in my backyard ...I was determined to not use the luxuries that awaited me in my home.

Norm (CM) left the cabins at the camp to spend a night in the woods. He wrote,

> Here at CM we have a thing call an overnight. An overnight is when we bring the kids down into the woods to spend the day and sleep there. The kids love to do this because it's like a getaway from the rest of the camp.

Ian left his bed in a cabin; Norm described the trip into nature as down into the woods—leaving the cabins behind and going toward a space that the kids love, and Santo experienced nature as a getaway from the luxuries of his house. Sandra (BC) corroborated with the idea that nature is outside—a space to go to. She wrote,

> I greatly appreciated being outside and in nature while climbing—it was a truly amazing experience and I can't wait for the day I can go climbing outside again!

Emma (CM) wrote, "We arrived at the foot of the mountain and my brother and I got out of the car reluctantly."

Angela (CM) wrote about arriving at camp:

> The first day that I arrived at camp we were given a tour of where we would be spending our whole summer. We started off in the main compound and sooner or later took us on the nature lore trail where we would have to bring our kids to do nature activities. When I stepped into the woods I automatically wanted to leave.

Ian, Santo, Norm, Emma, and Angela described their reluctance to leave their original space, or what Danny (CM) described as "our comfort zone" and their hesitation to go into the nature-space. Change of space and the foreboding of the unknown may account for some of their foot-dragging, but there is a pronounced division between "me" and nature. They described leaving what they experienced as a normal space and going to nature. They left a *not-nature* space, often an indoor space, and went to a *nature* space, always outdoors. Nature is a space they inhabited for a while, in which they had experiences, and then returned to their space apart from nature. They recognized the not-nature space as being different by describing what was missing. Returning to the original not-nature space was often accompanied by a lamentation for the loss of benefits they received in the nature space. In their romanticized reflections of the nature-space they experienced, they recognized the division between themselves and nature. Norm (CM) wrote, "It's what made me realize the importance of being out in nature" articulating the difference between being inside or "out in nature." Dana (CM) considered the difference between camp and the city. She wrote,

> It is one of the reasons why I came to CM: to regain sight of myself with the help of nature and to be a better person, or even simply a different person when I go back to the city.

Similarly, Kendra (CM) wrote about the line between the city and country. Like Dana, she was a different person in the two spaces. Both girls longed to nurture the nature they acquired at camp. She wrote,

> Not only is camp and nature a place where I care for myself physically and mentally, but spiritually as well. I take alot of Pagan beliefs and invest my time in reconnecting to nature. I think it's something that should be valued and it's often overlooked due to our way of living in the city.

Romanticized or not, these young people reflected on their experiences in nature spaces as positive, and in not-nature spaces as less positive or negative. Their experiences changed them, but they did not maintain their connections with the nature space. They needed to revisit the nature space to reconnect and reap its rewards. Their experience of nature reflected their Western worldview—that they are *apart from* nature rather than being *a part of* nature.

Connecting with nature space

One indication that the participants perceive themselves as separate from nature rather than a part of it is their description of connecting to nature, implying a prior sense of disconnection. They leave not-nature and go toward nature. There is a moment when they connect or reconnect with nature. They do not experience themselves as part of nature, and then they do. This connection requires being in nature and experiencing it. Dana (CM) wrote,

> A moment which I can recall vividly connecting with nature happened during my trip with my sibblings.... The discret rocking of the boat, the slight breeze dancing in my hair, the sunlight caressing my skin, the stillness of it all has deepened my connection with the world. Now, as I am older, I am constantly on the search of experiences or opportunities which will give me a similar sense of serenity.

Her connection with nature "happens." The sensation of movement, air, and warmth precipitated it. Her descriptions of "rocking," "dancing," and "caressing" connote the intimacy that a mother has with a child or lovers have with each other. Nature nurtured her and she reciprocated by connecting with nature. The result is a desire to recreate her sensuous and serene experience. Kendra (CM) reconnected with nature as sounds evoked memories. She left the camp and went to the remote overnight camping site.

> I went down to Cite 1 where the Nature Lore activity takes place. No one was there, but I remember the gentle breeze of the day and the rushing sound of the creek. I heard the sound of leaves and birds and I felt nostalgic, actually. . . Not only is camp and nature a place where I care for myself physically and mentally, but spiritually as well. I take alot of Pagan beliefs and invest my time in reconnecting to nature.

Her narrative began with her leaving from (camp) and going to (nature). She wrote about remembering and feeling nostalgic as the wind in the leaves, rushing water, and bird calls reawakened something inside her and her belief framework as she consciously decided to "reconnect to nature." What she described as nostalgia may be more of a revival or a recovery.

She suggested that the time she used is an investment with perhaps the hopes of physical, mental, and spiritual returns in her future. Zara (CM) initially fought against having a nature experience. She wrote about a time when her counsellor took her into a forest:

> I had always been a self-proclaimed "city girl." Bugs and mud and dirt were always to be avoided. . . . I, relunctant to hike the tall mountain and unfamiliar forests, gave her a hard time about going."

Once in nature, she changed. She wrote,

> I couldn't have anticipated how I'd come home a changed person. The lush trees and unfamiliar landscape fed my imagination more than I ever could. The beauty in the isolation hit me hard. I felt connected and at peace.

Previous participants wrote about being drawn to nature. Zara's (CM)attraction to nature jarred her. She wrote that they "hit me hard." It roused something in her, and nature nourished her. She wrote that it "fed my imagination." She expressed cognitive dissonance—the landscape was "unfamiliar," and the isolation was beautiful. "Unfamiliar" and "isolation" are often used to describe negative spaces and yet for Zara, they are strangely optimistic. Zara's experience, being a reluctant connector with nature, was initially offsetting. She reaped rewards, including a sense of connection and "peace."

Being surrounded by nature

Being surrounded can have negative and positive connotations depending on context. Participants in my study used the term positively. Esther (CM) used it twice in her narrative. She wrote about being surrounded by nature, and trees and bushes. Her reaction was positive. She wrote,

> The great thing about working in a camp setting is that you're literally always surrounded by nature. To choose one experience or story we have where we interact with nature seems like an impossible task, honestly, because at camp your entire life <u>is</u> nature. Literally yesterday, I was walking down to our sports field at night with a friend of mine, and we had an incredible experience interacting with our surroundings. The sports field is a giant grassy plain surrounded by trees and bushes and tall grass, etc.

Her late-night foray into nature reminds her that not only is she surrounded by nature but that, at camp, her entire life "is nature." Nature was not only a space that surrounds her, it became part of her. In this space, her life *is* nature. Nature is not inert—her experience included interacting with her surroundings—catching fireflies. Macy (CM) sprained her ankle jumping out of a tree. In pain, she hobbled back to camp. She found relief from her pain by focusing on the space she was in and was comforted by the sense of being surrounded by nature. She wrote, "The pain remained but by focusing on the forest surrounding me, I was distracted." She did not elaborate on what in nature gave her a momentary distraction from her pain. However, she might have been expressing her sense of nature's nurturing and healing capacities. Sandra (BC) explained

how experiencing the surrounding forces of a forest changed her demeanour from "disappointed" to "very happy."

> I was a bit disappointed that the trees were that small, because I thought that our friends said that it was a big forest. Finally, after 10-15 minutes of walking, we found ourselves finally surrounded by the forest, and I couldn't see any buildings anywhere, so I was very happy.

Sandra had expectations—she expected to feel surrounded. Once she was cut off visually from seeing buildings, she experienced happiness. The friend's description of the forest grew in her imagination—a "big forest" would have big trees. The big trees would obscure human construction, and this was the space she imagined. Once she couldn't see the not-nature space, she could experience nature.

Experiencing the surrounding nature of nature, whether expected or unexpected, created positive and sometimes spiritual feelings in these participants. Leaving not-nature, entering nature and feeling coddled in the womb of nature gave these participants feelings of happiness and deep connection. Like these adolescents, my experience is that part of becoming a nature-inspired teacher often involves geographical change—leaving not-nature and going into nature. Part of my becoming a nature-inspired teacher is the transformative effect of nature and the synergies that happen when I am with my students in nature. For the change—*becoming*—to happen, the first change requires a change in location. Students tell me, "Sir, you are a different kind of teacher outside of the classroom." While this may be true about many teachers with students in non-class settings, it is specifically true about me when I am by a river or on a mountain with my class. I tend to meld and disappear into the group and become one of the learners.

Larva: Becoming and transforming linked with sensory awareness of nature

The three following texts illustrate transformations and moments of *becoming* through physical interactions with nature, highlighting how such experiences catalyze personal growth. By applying the frameworks of rhizomatic growth and sequential development, this analysis examines how the participants' journeys reflect interconnected learning, adaptability, and evolving perspectives. Nature emerges as both a catalyst for transformation and a medium through which individuals engage in complex, multi-layered processes of self-discovery. Angela's (CM) wrote:

> It started to rain heavily, the rain was hitting the leaves of the trees in such a calm way that I actually found it peaceful sort of. The sound of the rain when you are in the forest was so relaxing despite the fact that I was soaking wet cuz (sic) I was not dressed for the rain. So, my overall thought about nature is 'don't knock it till you try it' because despite me hating it the first time, the second time really made me enjoy my surroundings and feel more at peace with nature from which I have never felt before.

Angela's journey embodied the interplay of rhizomatic and sequential elements in her transformation. Initially resistant to nature, she underwent a perceptual shift during an unplanned encounter with rain in a forest. The calming sound of the rain served as a rhizomatic node,

linking their initial discomfort with newfound peace and fostering an emergent appreciation of nature. Sequentially, this experience built upon itself during a subsequent encounter, reinforcing their evolving perspective. The transformation reflects *becoming*—a shift from dismissal to appreciation through a dynamic, iterative process that deepens their relationship with the natural world.

Joad (CM) reflected on his discovery:

> I distinctly remember thinking to myself that 'Nothing could survive here.' But as the trip went on I learned that not only is there an entire ecosystem surviving out there but thriving... Seeing this thriving ecosystem exist in such a harsh landscape completely changed my perspective of how tough life is, how that natural world will always find a way to thrive. Even at 13 this was so impactful to me and I decided that I was going to not survive the toughest challenges I faced, but thrive as well.

Joad exemplifies a transformation that begins with a misconception and culminates in a profound revelation. Initially perceiving the desert as barren, he discovered an interconnected web of thriving life—an intricate ecosystem. This ecosystem is rhizomatic, a network of adaptive relationships that persist and thrive under harsh conditions. Sequentially, Joad's understanding evolves step by step, from initial doubt to a nuanced appreciation of life's resilience. This transformation is ecological and personal. By observing nature's resilience, he redefined his capacity to overcome challenges, reflecting a layered process of *becoming*.
Rania (BC) captured this transformation:

> As I climbed, I would still manage to find new holds for my hands and feet that brought me closer and closer to my end goal. I quickly managed to adapt to its very obvious differences from indoor climbing and got tips and pointers from other people climbing around me. I began to appreciate it more and found myself feeling more happiness, peace, and enjoyment rather than the stress and worry.

Rania's experience with outdoor climbing demonstrates the intertwined processes of rhizomatic adaptability and sequential growth. As she navigated the challenges of climbing, she discovered new holds, learned from others, and adapted to the outdoor environment. This rhizomatic growth emerges through dynamic interactions with the environment and fellow climbers, forming a web of learning experiences. Sequentially, her progression from struggle to confidence unfolded in distinct phases, each building on the last. This journey reflects *becoming* as Rania appears to evolve from a state of uncertainty to one of joy and mastery, emphasizing the adaptive and relational nature of growth.

Across the three texts, nature emerges as a powerful catalyst for transformation through *becoming*. These experiences highlight the dynamic interplay of rhizomatic interconnections and sequential development. Rhizomatic elements emphasize the multi-directional and adaptive nature of their growth, where lessons emerge unpredictably from diverse interactions with the natural world. Sequential elements underscore the structured progression of these experiences, each stage logically advancing the next. Together, these frameworks reveal how nature nurtures complex, layered transformations—challenging preconceptions, inspiring aspirations, and nurturing resilience. Through their interactions with nature, not only are their perspectives

changed but they also embrace the continuous process of *becoming*—one that harmonizes personal growth with the rhythms of the natural world.

During my classes in natural environments, I notice that forests and rivers offer my students and me an immersive experience where senses align with the natural world's rhythms. It is here that transformation takes root, and ideas grow into actions. Young people find a sacred space for introspection between the branches of forest trees. Nature encourages profound self-discovery, nurturing the growth of their *becoming* identities and I experience the sense that I am *becoming* more of a nature-inspired teacher.

The Chrysalis: Spiritual transformations

As the caterpillar grows, it eventually transitions into the chrysalis stage—a period of profound internal transformation. Here, the caterpillar withdraws from the external world, encasing itself in a protective chrysalis to undergo metamorphosis. In the chrysalis, the caterpillar is isolated from the external world, held in a suspended state where it is free to transform in the safety of this secluded environment. For human beings, the chrysalis stage symbolizes the periods in life when we withdraw from external pressures and distractions to focus inwardly on personal growth or healing. These are times when we might retreat to safe, familiar spaces, whether physical or emotional, to reassess and transform ourselves. This stage is about creating the space necessary for internal development, much like how the chrysalis provides the environment the caterpillar needs to turn into a butterfly. The caterpillar and the human being need space for transformation, underscoring how essential space is for existential change.

Nature has long been a source of inspiration, reflection, and transformation, offering individuals a space to connect with themselves, the world, and the divine. In the texts analyzed here, the authors shared their experiences of engaging with the natural world, uncovering profound insights that transcend the physical and delve into the spiritual. Using the frameworks of emergence, connection, plateaus, and lines of flight, this analysis explores how these moments in nature facilitate growth, foster interconnectedness, and spark transformative realizations. By examining the intricate interplay between sensory perception, emotional resonance, and spiritual awakening, it is apparent how nature becomes a medium for dynamic personal and spiritual development. These stories demonstrate that through the unpredictability and richness of the natural world, individuals find pathways to self-discovery, sustained engagement, and transformative flights into a more profound understanding.

Emergence, connection, plateaus, and lines of flight

Emergence refers to new insights or experiences arising from dynamic interactions within a system or environment. In the texts, moments of spiritual awakening and understanding emerge organically from sensory encounters with nature. Connection is central to each narrative, reflecting how individuals link their experiences with broader spiritual, emotional, and sensory networks. Plateaus, in this context, represent sustained moments of engagement and understanding that do not necessarily lead to resolution but hold meaning in their continuity. Lines of flight describe moments of departure or transformation where individuals break from established patterns or boundaries to explore new possibilities.

Fifteen-year-old Mary (BC) wrote,

> nature, raw nature, is so great. When you take a deep breath in it, you get such a fresh, full breath in your lungs. In nature, everywhere you look, you are surrounded by creation. When you look closely, you can discover so much, so, so much. The more you know about the world God created, the closer you feel to God.

Mary's observation of "raw nature" reveals a deeper connection between the physical act of breathing in fresh air and a spiritual closeness to God. This emergence of insight arose not from deliberate effort but from the simple act of attentiveness to the natural world, leading to an understanding of creation as a reflection of the Creator. She connected her sensory experience of nature to her faith, finding that understanding creation fosters closeness to God. This connection is not linear but layered, as observing the natural world deepened her spiritual awareness. She depicted a plateau in the act of "looking closely" at nature and discovering its intricacies. This act becomes a sustained state of curiosity and appreciation, creating an ongoing relationship with the natural world. Mary's realization of God's closeness through nature established a line of flight from a purely sensory experience to a transcendent spiritual connection. This departure allowed her to see creation as an active reflection of divine love.
Kelly (BC) wrote about her experience at night, sitting on a darkened dock.

> It was evening. The cold breeze started to touch my skin as it shivered along with the soft wind. My feet are touching the cold water, as my hands hold me up for balance on the dock. Sitting there, I think. The faint sound of laughter in the background, I look out on the view. A few bugs land on me and I absent-mindedly push them away. The sound of music vibrates into my ear, the sound of lyrical praise and worship to my Lord and Savior. I look up to the sky. The color of purple-pink that reflects off of my eye brings me into complete awe and amazement of our Creator. Because as I listen to music that proclaims love to Him, and as I look in brilliance to the nature of the water, sky, creatures and the sensations I feel within myself at this very moment, admiring, God is doing the exact same thing, but this time, He's admiring people like me—the people He had made in His image. Just as I see the sunset and get appalled (sic) at its beauty, God looks at me with so much more worth and beauty. Trees are not just trees, the cold water that touches my feet is not just cold water. Every single aspect of nature that we perceive is a reflection of God's creativity, His love for us, and the sacrifice He made for us. To me, nature is so much more. To me, it is love. As I sit on the dock, praising God's name silently, I shed tears.

Kelly's writing illustrates emergence through a convergence of sensory and spiritual stimuli: the cold breeze, water, music, and sunset coalesce into a profound realization of God's admiration for humanity. This multi-layered experience of awe and gratitude arises spontaneously from her connection to her surroundings. Kelly expressed her connection through the interplay of sensory and spiritual elements. She felt simultaneously grounded by the cold water and uplifted by the worship music, forming a web of relational ties between herself, nature, and her Creator. Her recognition that "trees are not just trees" underscores the interconnectedness between the physical world and divine creativity. Kelly's time on the dock—balancing sensory inputs, spiritual reflection, and emotional resonance—represents a plateau. The moment is rich and

layered, yet it remains open-ended, allowing her to continually dwell in awe and worship without seeking closure. Kelly experienced a line of flight when the beauty of the sunset and the worship music led her to a transformative understanding of her worth in God's eyes. This shift broke her away from an ordinary sensory experience and propelled her into a deeply emotional and spiritual realization.
Julie (CM) wrote:

> my spirituality is basically like listening to what she has to say. And that includes being quiet, you know, like, that includes listening to her voice, and it could be the breeze reaching the leaves. And then you could hear that noise, it could be the water, I don't know, a bee next to a plant. But I always try to find that space where it's quiet so that I can give nature her voice.

Julie's spirituality emerged through attunement to nature's "voice." Listening and interpreting subtle natural sounds (e.g., the breeze, water, or a bee) created a space where insights unfold, highlighting nature's role as an active participant in spiritual dialogue. She described an intimate connection with nature as an active, reciprocal relationship. By listening to nature's "voice," she honoured its agency and positioned herself as a participant in a dialogue, emphasizing the mutual and interconnected nature of her spirituality. Julie's practice of listening to nature created a plateau of ongoing spiritual engagement. This act of giving nature "her voice" is not about reaching a definitive understanding but about remaining in a state of openness and reverence, allowing new insights to arise continually. Julie's deliberate quietness to "give nature her voice" represents a line of flight from conventional modes of spirituality to a more fluid, participatory approach. By redefining her spiritual practice as listening to nature, she moved beyond traditional boundaries to embrace a unique, emergent form of connection.

When I reflect on the three texts, through the lenses of emergence, connection, plateaus, and lines of flight, it seems to highlight the transformative power of nature in promoting spiritual and emotional growth. Emergent insights arise from sensory and reflective engagement, while connections with nature form intricate webs of meaning. Plateaus sustain these moments of engagement, allowing them to deepen over time. Lines of flight enable individuals to transcend conventional perspectives, embracing new understandings of their relationship with nature and the divine. Together, these elements illustrate the dynamic and multi-faceted nature of personal and spiritual transformation within the natural world.

The comparison of Transcendent experiences at CM and BC provides insight into how individuals from different cultural and religious backgrounds interpret and connect with nature profoundly and spiritually. The varying vocabulary and expressions of the two camps reveal a rich tapestry of spiritual experiences rooted in the natural world. At BC, a Christian camp, participants predominantly use religious language to describe the Transcendent. They refer to God, the Creator, and often use masculine pronouns to ascribe divinity to this higher power. This aligns with Christian beliefs, where God is traditionally a male figure. The participants at BC find awe and reverence in their connection with nature, believing it to be God's creation. This divine connection is evident in phrases such as "the world God created" and "in the chaos, in the wild waves, there is calm and stillness." Nature becomes a conduit for a divine presence, and the outdoors is a sanctuary for spiritual reflection. In contrast, at CM, a secular camp, the participants' descriptions lean towards a more pantheistic interpretation of the Transcendent. They frequently used "Nature" to represent a higher power, and they employ feminine pronouns

when describing this force. Nature, in this context, embodies the sacred and the numinous. The choice of feminine pronouns is a nod to the concept of Mother Nature, emphasizing the nurturing and life-giving aspects of the natural world. The participants at CM also find profound spiritual moments in the outdoors, seeking a deep connection with the natural world. Phrases like "feelings of inner peace," "serenity," and "releasing an inner child" highlight their reverence for the transcendence they find in nature. Despite the differences between the two camps, there is a clear commonality in the experiences of the Transcendent. Both groups hold nature in high regard and believe it possesses agency and force. Whether they attribute this power to a Christian God or to the broader concept of nature, they share a quest for connection with the numinous. This quest culminates in a corporeal serenity sensation, transcending mere intellectual or emotional engagement. Nature becomes a conduit for a spiritual experience that touches them at a profound, even cellular, level.

Chapter seven of Kenneth Grahame's children's book *The Wind in the Willows*[23], unfolds with two characters in a boat on a river, enticed by the irresistible melody of the sound of a pan-piper's flute. Grahame wrote that one of the characters felt,

> A great Awe fell upon him, an awe that turned his muscles to water, bowed his head, and rooted his feet to the ground. It was no panic terror—indeed he felt wonderfully at peace and happy—but it was an awe that smote and held him and, without seeing, he knew that it could only mean that some august Presence was very, very near. (p. 123-124)

Experiencing the divine among the wind in the willows, the two characters crouch to the earth, "bowed their head and did worship" (p. 125). In this chapter, Grahame succinctly explored the symbiotic relationship between humans and nature. Sights, smells, and sounds awakened something in his two characters, and they are drawn upstream. Nature afforded them a transcendental experience, and the two characters return home, transformed. In a parallel sense, participants in my study experienced the attractive magnetism of nature. (For some, this only happened once they situated themselves in nature or were brought there by another.) Nature, in turn, afforded them somatic and emotional experiences that indelibly imprint on their memories and a positive transformation occurred. Stripped of extraneous details, these encounters with nature are pivotal moments that transcend mere observation or interaction. The positivity embedded in their interpretations suggests transformation. When distilled, the experiences of the adolescents in my study consistently manifested as profoundly positive, transformative encounters that inherently aligned with mine. These encounters also manifested an educational dimension. Learning, in this context, transcended the conventional classroom setting. It embodied a holistic assimilation of knowledge, emotions, and a refined awareness of the self and the world. These encounters with nature became educational in the broader sense, fostering an understanding of the interconnectedness between oneself and the environment, and instilling lessons that are not confined to textbooks but are lived and internalized. A growing body of research explores the profound connection between nature and spirituality, focusing on Indigenous perspectives. It sheds light on the transformative power of the Land in advancing spiritual growth, healing, and a sense of connection. The following is an analysis of observations and the broader implications of this research.

[23] The Wind in The Willows. Grahame, K. (1908).

Indigenous communities, such as the Plains Cree and Métis in western Canada, have long recognized the spiritual significance of the Land. Research conducted by Hatala et al. (2020), using Participatory Action Research and photovoice, offers valuable insights into how young Indigenous people in urban settings connect with the Land. For them, Land is not just a source of sustenance but also a place of spiritual resonance, healing, and personal growth. The individual account shared by one young participant, describing her connection with fallen leaves, beautifully illustrated a spiritual bond with the Land. Sitting among the leaves, feeling at peace, and drawing parallels between her settled state and that of the leaves exemplified the profound and sacred connection that nature can provide. It described Land as a sanctuary for the soul, a space where one can find harmony and self-discovery. Research conducted by Johnson and Ali (2020) on a paddling trip in Manitoba, Canada, further underscored the significance of the Land as a source of spiritual connection. Among the five First Nations and Métis students, the "connection to the Land" theme emerged strongly from their interviews. One participant's reflections on his childhood experiences in nature highlighted the evolving nature of this connection. As he matured, he gained a deeper understanding of the spiritual dimension of his relationship with nature, with memories of watching the Northern Lights as a pivotal moment of revelation (p. 213). When linked to nature, spirituality appears to transcend linguistic and cultural boundaries. Different communities with varying worldviews may use varying terminology and metaphors to describe this connection, but I notice that that essence remains the same. Whether a connection with God, communion with Mother Nature, or a bond with the Land, the fundamental affordances of nature are universal. Nature offers a profound connection, a sense of serenity, and moments of awe that could develop into a shared desire to be better stewards of the environment. In a world divided by diverse belief systems and cultural perspectives, the adolescents' narratives about their experiences of nature underscore the unifying power of nature. Their descriptions transcended social boundaries, drawing individuals and communities into a shared understanding of the spiritual essence of the Earth. This finding emphasizes the importance of respecting humanity's shared connection to the Earth and could inspire a collective commitment to environmental stewardship and protection of the natural world.

Bonnet (2009) asserted that children's *felt* experiences hold educational value where a body can *know* its environment by virtue of being present in it. Marian de Sousa and Jacqueline Watson (2016) and Deborah Schein (2018) extended this assertion suggesting that corporeal and sensual experiences can lead to transcendent or spiritual moments. In academic research, spirituality can be multifarious and polemic[24]. This vagueness may be due to its perceived relationship with religion (de Sousa & Halafoff, 2017, p. 2). However, spirituality is recognized widely as part of the human, innate, epistemological framework and a critical component for a complete understanding of our human experience (Clarke, 2013; Ferrer, 2005; Hay & Nye, 2006; McLaughlin, 1996).

Eclosion: Relationships and engagement

The participants' connections were primarily with nature. They wrote about physical contact with grass and rocks and their tactile sensations. Many of the events took place in the context of being accompanied by family and/or friends where existing connections are

[24] Spirituality is readily accepted in Indigenous research methods. That Indigenous peoples have a "spiritual connection" with Land is rarely challenged (Kovach, 2009; Wilson, 2008).

strengthened. There are also a few stories where the participants felt that their experiences happened because they were alone—surrounded by the absence of others.

Nancy from BC wrote about the power she experiences and the benefit of solitude. Nature afforded her "support" and the sensation of being in the company of others. She wrote,

> When I'm overwhelmed and need a place to be alone to think and maybe to cry, the rocks support me and I feel like the rhythmic beating of the waves on the shore is an accompaniment in the sadness and a regular reminder that I'm not alone in my feelings and that they are valid.

Nature appears to console her as she aligned herself, perhaps her heartbeat, with the rhythm of the waves. An active part of nature speaks to her and tells her that her feelings are genuine and reasonable. Jenny (CM), who lives on a reserve in Northern Québec, told a story about a solo ATV trip where she became stuck in the snow. Feeling alone and in danger turned to gratitude when her family showed up to rescue her. For her, nature was a challenge best confronted in the company of others. Nature offers many kinds of spaces and landscapes that accommodate various social mixtures. Multi-generational groups can go bird watching, while friends can bike and horseback ride. Being together adds a layer of security, comfort, and enjoyment. Time spent in groups in nature tends to bond and expand the quality of the experience exponentially. Most of the written stories were about shared experiences. The words 'family' and 'friends' appeared frequently throughout the texts, with 'people' mentioned nearly as often. Terms like 'sister,' 'cousin,' 'parents,' and 'boyfriend' were also referenced frequently. The repetition of these relationships in their narratives emphasized the importance and value of sharing their experiences with others.

Dana (CM) wrote about a camping trip with her sister and her sister's boyfriend when she was nine. During the weekend on an island, "many things went wrong." The sister and boyfriend fought, they didn't have enough food, and the trip culminated in a car accident. In the middle of the trauma, she wrote that nature (specifically water) offered her "serenity." Her experience trained her to look for reprieve from life in nature. She wrote,

> Now, as I am older, I am constantly on the search of experiences oropportunities which will give me a similar sense of serenity. It is one of the reasons why I came to CM: to regain sight of myself with the help of nature and to be a better person, or even simply a different person when I go back to the city.

Mary (BC) was reminded of family when she reflected on nature. She wrote, "whenever I think of being in nature I think of hiking with my mom, brother, Great Aunt and Grandmother." The story recounted how travelling with her elderly relatives caused her to slow down and experience nature more fully. She elaborated, "every mushroom they see, bird they hear or interesting plant they spot, there we are stopping again as they get out their bird or plant books and look through their binoculars at whatever it is they saw." Her experience in nature was magnified by being in the company of family members.

Another narrative that underlined how nature affords space and activities for family bonding is one participant's memories from a family camping trip. Mike (BC) was eight years old at the time. The group must have walked through a burr patch because they discovered burrs stuck to their clothing. They began throwing them at each other. He wrote, "then a war broke

out. We all started throwing and collecting burs and we were all covered even my grandpa joined in." Years later, when asked to write about a time in nature for this research, this memory surfaced. He described the time together as "fun" and "enjoyable" even though the burrs took forever to remove and felt "like lying in a bush full of needles." This trip became part of the family narrative. He concluded with, "to this day that camping trip is known as the "burr war."

For many, a story became family folklore—a tale that has become integral to the family oral history, a legend that morphs with each telling. Filtered memories become fond memories. These events could not have happened or would have been different if the individual had been alone in nature. Being in a community appears to intensify the nature experiences participants shared in my research. In my study, connection with nature, physical and emotional, seems to strengthen social bonds. Shared experiences developed into deep connections. Nature offers multi-sensory connections that may expand exponentially when experienced in social groups. Participants in my research wrote that sharing an experience with family and friends added to the collective memory of the group. Shared experiences in the wilderness became threads woven into a web of social connections; challenges to overcome, mountains to climb, rivers to ford, and paths to explore. In the heart of nature, accomplishments are born from sweat and determination, creating memories that may be passed down to future generations.

It's September, and I find myself eavesdropping outside a Grade 10 history class at Education Plus High School. The teacher, Mr. F. understands that if he can build a strong rapport with his students in the first few weeks, teaching will be smooth for the rest of the year. Inside the classroom, the students are seated on their desks, grouped in the center of the room. Together, they are paddling canoes upriver in search of beaver dams. From the back of the boat, Mr. F. points out landmarks and warns of occasional dangers. They pause briefly to pass around a roll of birchbark and a piece of beaver fur before resuming their paddle strokes. Bonds are formed with each stroke, and relationships are developing. Later in the year, the students will find themselves on a real kayaking trip, drawing on what they learned in their history class. As they navigate natural rapids and rocks, they'll rely on the trust and connections they've built for their safety. Years later, these same students will return to speak to new students. Though their recall of dates and names may blur, it will be evident from their stories that they've retained the far more valuable life lessons.

Conclusion and Distillation of the Collected Adolescents' Texts

My aim is to share details about my ongoing development as a nature-inspired teacher. This transformation is not possible without students and nature. I have framed the student component in the nature-inspired teacher transformation triad (teacher, student, nature) using the metaphor of a caterpillar's metamorphosis. In my study, adolescents' experience of time is positive when it is not measured in clock-time. When the participants in my study use time as a subtitle for an event or occasion, it is experienced positively— "a great time" or "the time of our lives." Nature allows temporal flexibility, permitting adolescents to regress to a childlike state. In nature, corporeality is the existential factor that heightens adolescents' awareness of their experiences. It is what connects them with nature, and it creates nature memories that may be useful once the adolescents leave nature. Adolescents engage deeply in sensory experiences providing them with a deep and meaningful understanding of their experiences and a strong connection with nature. In this study, I recognize that adolescents perceive nature as a destination—a space to which they travel, a realm apart from themselves. Once they arrive, they

may feel connected but also find themselves disconnecting once they leave nature. Even if they are initially reluctant to go into nature, this space is generally a positive experience. Regarding relationships, the adolescents in my study engaged with nature individually and in groups. Most relationships they described are with Nature and with the Transcendent. They wrote that their relationships are profound and life changing. They experience positive emotions with the potential to develop clear and long-lasting memories.

Educators strive to create ideal learning environments, and in my experience, the optimal setting for becoming a nature-inspired teacher is one where experiences can emerge freely, and old ones can be revisited without restriction. In nature, hierarchies dissolve, allowing students and teachers to share the role of learner. For adolescents, a recurring theme in their narratives is transformation. This change unfolds and is catalyzed by their shift in location—from not-nature to nature. Their transformations often involve new learning and embody the process of becoming, forming rhizomatic connections between past and future experiences.

Like my journey of becoming, the adolescents in this study underwent corporeal and relational changes as they immersed themselves in nature. This research focuses on my path toward becoming a nature-inspired teacher. In the final chapter, I engage with Deleuze and Guattari's (1987) concept of becoming to propose the Nature-inspired Pedagogy of Becoming (NIPB). Drawing on my experiences and those of the adolescents, I outline an ecological approach to pedagogy informed by becoming, rhizomes, lines of flight, and plateaus. This framework embraces principles intrinsic to natural environments—fluidity, interconnectedness, uncertainty, and temporality.

CHAPTER 6: A Pedagogical Approach and Drawing Conclusions

Standing in a forested area of Mount Royal in Montréal, students surround me, sketching "anything they consider natural." Leaves, branches, roots, logs, dirt paths, and puddles begin to appear on their well-worn sketch pads. It's October and the students now immerse themselves in the task without needing justification. They've gathered colourful leaves for their presentations on leaf senescence, and later, they'll create videos, interviewing each other about their experiences in the forest. Earlier, I engaged a small group in a conversation about entropy as they focused on the dying leaves— blending science with philosophy. This topic might evolve into their science project. One pair of students fixated on the idea that, hundreds of years ago, Indigenous peoples lived here, perhaps walking along the same path we now tread—they are creating a history class. In this space, I move freely between individuals and small groups, wait for students to approach me, sit back and observe, or sketch a leaf. Here, I'm not a traditional teacher, nor am I fully a nature-inspired educator. As I learn alongside the adolescents in this natural setting, I recognize that I shift physically and mentally between nodes of interest, making rhizomatic connections to my past, upbringing, training, and current curiosities. No point is a destination; it's a link to past and future experiences. I do not arrive at being. I am always in the process of *becoming* a nature-inspired teacher. The pedagogical approach extends to me, my students, and that natural environment in which we find ourselves. This vignette encapsulates the goal of my research, which is to describe, analyze, and interpret what it means to be in the process of *becoming a* nature-inspired teacher.

While being outdoors and in a natural environment provides an ideal setting for a nature-inspired pedagogical approach, it is not a requirement. Nature-inspired pedagogy is primarily a philosophical approach to teaching/learning. Inspired by Deleuze and Guattari's (1987) concepts, the teacher in a rhizomatic classroom designs the learning environment as a dynamic and interconnected system of knowledge rather than a rigid hierarchy. In this approach, authority is decentralized, and the teacher shifts from being the sole provider of knowledge to a facilitator who nurtures curiosity and exploration. The teacher encourages the students to take ownership of their learning, delving into intriguing topics while discovering connections between diverse ideas. Peer-to-peer collaboration becomes central, mimicking the structure of a rhizome where each node connects to others in unpredictable and meaningful ways.

The concept of plateaus in a rhizomatic classroom encourages moments of sustained intensity and focus without traditional beginnings or endings. These plateaus manifest as ongoing projects or inquiries that evolve organically, inviting students to revisit and reinterpret ideas over time. Lines of flight represent moments of creative escape or divergence from established norms. In a rhizomatic classroom, these lines of flight emerge when students challenge assumptions, explore unconventional ideas, or pursue unexpected tangents that arise during discussions or projects.

To maintain a non-hierarchical dynamic, the teacher adopts a role as a co-learner rather than an instructor. Students and teachers co-construct knowledge through shared inquiry, with students' contributions valued as equally important. They share decision-making as students take part in setting goals, choosing resources, and designing assessments, fostering a sense of agency and ownership. Success is not measured by reaching predetermined benchmarks but by the depth of engagement and the richness of the connections students draw between ideas. This leads us to the concept of "A Nature-inspired Pedagogy of Becoming," influenced by the philosophical insights of Deleuze and Guattari with practical applications in education.

A Nature-inspired Pedagogy of Becoming

Based on reflections on my autoethnographic narrative inquiry research, my years of teaching in a nature-inspired environment, and inspired by Deleuze and Guattari's (1987) concepts, I propose an approach to teaching/learning I call Nature-inspired Pedagogy of Becoming (NIPB). Applied to education, NIPB emphasizes that learning is not static but rather an evolving, co-creative journey involving the learner, educator, and nature. Educators and students continually *become*, shaped by seasonal changes, natural cycles, and the unpredictability of nature. Nature is an active participant, shaping and being shaped by human interaction. NIPB posits that the development of a nature-inspired teacher mirrors natural transformations, such as that of an egg to a butterfly, which is simultaneously interacting with and impacted by other social and environmental forces, including cultural values, ecological changes, community dynamics, and educational policies. The key touchstones of NIPB are:

- authority is de-centralized, redistributing it across the learning community through shared decision-making, flexible-roles, and collaborative, peer-to-peer interactions;
- teachers, students, and nature evolve together simultaneously, in stages and rhizomatically;
- teaching/learning is holistic, immersive, unpredictable, relational, emergent, and transformative;
- wonder and curiosity drive teaching/learning experiences—more inquiry, fewer definitive answers;
- intersects with eco-pedagogy encouraging stewardship and sustainable living.

Rhizomatic development: Plateaus, ruptures and lines of flight

As described earlier, a butterfly's development is not a rigid sequence but a flexible process that can respond to environmental changes. In a rhizomatic system, there is no single correct pathway to becoming a butterfly; instead, many possible routes are shaped by a complex network of influences. A similar unpredictability has characterized my experience of developing or becoming a nature-inspired teacher. Becoming a nature-inspired teacher is not a rigid, prescriptive process. While there may be identifiable stages of development, each teacher's journey is unique, shaped by their individual experiences and the transformative impact of their own rhizomatic life events—or, like the Forrest Gump quote, cited at the beginning of this dissertation, "I don't know if we each have a destiny or if we're all floating around accidental, like on a breeze. But I think maybe it's both, maybe both are happening at the same time." Sharing my journey of *becoming* a nature-inspired teacher can be helpful for others—not as a road map, but more like a travel guide, offering insights from my experiences to support their development.

In a linear model, certain stages of the butterfly's life cycle—especially the adult butterfly—are often seen as more important or valuable than others, such as the egg or caterpillar. A rhizomatic view challenges this hierarchy, suggesting that each evolution of the butterfly's development holds equal significance. The egg, caterpillar, chrysalis, and butterfly are all crucial parts of the larger life cycle, and each plays an essential role in the species' survival and reproduction. While many celebrate the adult butterfly's beauty and role in pollination, the

caterpillar gathers the energy needed for metamorphosis through constant feeding. Without this crucial energy accumulation phase, the butterfly's transformation would not be possible. Similarly, the chrysalis is critical for metamorphosis, during which the caterpillar's body undergoes a profound transformation. Looking back at my life experiences, valuing one more than another is impossible. Each interacts with others to assist in my development as a nature-inspired teacher. My religious upbringing, my grade five teacher's influence that sent me to Africa for two years, my travels in Canada's North, and the founding of an alternative school, are equally important in my *becoming.*

In a linear model, many see the butterfly's emergence from the chrysalis as the final stage of development. A rhizomatic perspective highlights that even after the butterfly emerges, its life evolves through feedback loops and interactions with its environment. After emerging as an adult, the butterfly participates in pollination, contributing to the reproduction of plants and the maintenance of ecological systems. These interactions, in turn, influence future generations of butterflies by shaping the availability of resources and the conditions for reproduction. Additionally, the butterfly's role in the food chain, as prey for birds and other predators, influences the survival of its species and other organisms in its ecosystem. In this way, the butterfly's development is part of a continuous cycle of transformation and adaptation, where each change contributes to the ongoing evolution of the ecosystem. I am constantly evolving through my daily interactions with students and our environment. I'm also keenly aware of how I encourage my students to engage with academic and non-academic subjects. In this way, I am continuously contributing to the cycle of nature-inspired teacher development—especially as I see several former students becoming teachers.

Reflective practice is central to the theory of *becoming*, emphasizing that the ongoing transformation of the teacher is crucial in guiding students. As I change, so do my pedagogical methods, philosophies, and student interactions. This transformation reveals how past experiences in nature have shaped my approaches to teaching and my place in the world. Nature-inspired, holistic, immersive teaching emphasizes a comprehensive, hands-on approach that engages learners through physical interaction and sensory experiences in natural environments. It intentionally connects mind and body to develop a complete understanding of concepts. Learners (including individuals recognized as teachers) engage all senses and are fully present in their environment, whether exploring nature, interacting with materials, or participating in sensory-stimulating activities. This approach integrates emotional, physical, and intellectual understanding, creating meaningful, embodied learning experiences.

When applied to education, NIPB reconceptualizes learning as a dynamic and co-evolving process, where the learner, teacher, and natural environment interact continuously. This approach emphasizes that learning is not a fixed or unidirectional transfer of knowledge but rather an ongoing exchange and mutual adaptation shaped by the unique qualities of both the individuals involved and the natural surroundings. This perspective rejects the traditional, linear learning model—from ignorance to knowledge—in favour of a dynamic process of continual transformation. In this context, nature-inspired educators create personal meaning through experiences in nature, synchronize their teaching rhythms with natural cycles, and engage in constant transformation. Unlike other theories of *becoming*, NIPB includes nature as an equal partner with agency to impact people and vulnerable to change.

Nature-inspired pedagogies are naturally holistic and immersive. Holistic learning is about breadth, considering the whole person and integrating knowledge with personal growth. It connects intellectual, emotional, physical, social, and spiritual dimensions. Immersive learning is

about depth, focusing on total absorption in the experience. It aims for full engagement through hands-on activities or direct interaction with the environment. This approach creates lasting connections with the subject matter, promoting retention, personal growth, and an enduring relationship with nature.

Applying Deleuze and Guattari's Theory of *Becoming* to NIPB

Deleuze and Guattari's (1987) concept of *becoming* offers a philosophical framework for understanding Nature-inspired Pedagogies of Becoming. In their work, *A Thousand Plateaus* (1987), the notion of *becoming* challenges fixed identities and static processes, proposing instead that life and learning are fluid, dynamic, and ever-changing. This framework aligns with the principles of nature-inspired teaching/learning, where the natural world and its inherent cycles encourage a view of learning as an open-ended, co-evolving process. Educators can reconceptualize teaching and learning as transformative, relational, and non-linear by integrating the concept of *becoming* into a Nature-inspired Pedagogy.

The fluidity of teaching, learning and identity

In Deleuze and Guattari's (1987) philosophy, *becoming* rejects static identities and embraces continuous transformation. Applying this understanding to nature-inspired teaching reframes learning as a fluid, co-evolving process between the learner, the teacher, and the natural environment. Much like the concept of *becoming*, nature-inspired education does not view knowledge acquisition as linear or goal-oriented but as a dynamic, unfolding process that mirrors the unpredictable rhythms of the natural world.

As I review my narratives and those of the youth I have worked with, I identify transformation in connection to time in nature. Many times, it happened unexpectedly, like the spiritual experiences of the counselors or my understanding of the fluidity of *becoming* a nature-inspired teacher throughout my career. In NIPB, teachers and students are not progressing toward fixed identities or predefined knowledge outcomes. Instead, they constantly reshape their understanding of the world as they interact with natural environments. As my students and I explore a forest together, we are not simply learning facts about ecosystems. We are continually *becoming,* shaped by encounters with plants, animals, the changing seasons, and each other. This interaction challenges the static model of teaching, where knowledge is fixed and transmitted from teacher to student. Instead, it promotes a fluid educational model where both teacher and student are co-participants in a never-ending process of discovery and transformation. In this context, *becoming* a teacher (specifically a nature-inspired teacher) is not about reaching a singular moment of proficiency but sustaining an engaged, reflective practice over time. As educators navigate different teaching environments, students, and educational challenges, their approach to teaching is continuously reshaped. Transformation characterizes a teacher's journey—an idea that aligns with Deleuze's (1987) view of *becoming* as a process without closure. In nature-inspired teaching, this rhizomatic approach is apparent. Interactions with both human and non-human elements inform the teacher's development. These interconnected experiences contribute to an evolving understanding of pedagogy that is flexible, adaptive, and responsive to the dynamic realities of teaching in a natural setting.

Describing *becoming*

Deleuze and Guattari (1987) might suggest that measuring *becoming* would undermine its very nature, as it would try to impose boundaries on a process that thrives on the dissolution of fixed points and categories. Assessment is a challenge for nature-based pedagogies. Much of society expects quantitative measures of progress. Student reports, historically, have been used to categorize and direct students' futures. A common question I encounter is: "How do you know your students are learning?" My approach to assessment is qualitative and reflective. For example, at the end of each day spent outside the classroom, students text me to describe how they have engaged with at least four of our seven core values (7 Cs) mentioned earlier. Some recent assessments include: "I experienced critical thinking when I missed the metro. I texted my friend and was able to catch up with the group. In the past, I would have panicked." "In my group, I experienced community when I realized that I had not spoken to B all year. It made me think if there were others in the class I had not yet spoken with." "I experienced consequences when I was showing off on the swings. When I jumped, I twisted my ankle." And, "I experienced courage when I had to present my project to the whole class. Last year, that would not have been possible." At the end of each week, students describe their experiences, identifying one thing they enjoyed and one thing they learned. This method prioritizes self-awareness and reflection, allowing for a richer understanding of their growth beyond traditional measures.

As I develop, I keep journals that I review at the start of each school year. I look for transformations from past years and instances of growth, including my expanding collection of objects, such as rocks, wasp nests, and woodpecker-drilled bark. I also note affinities that evolve, such as my recent fascination with the metamorphosis of caterpillars into butterflies. Additionally, I observe any ruptures, such as shifts in directives from the Ministry of Education, or new adventures, like this year's school boat trip from Montréal to Boucherville. I document my experiences as a learner while being in nature with my students, often recognizing moments when I experience NIPB's proposal: that nature-inspired learning occurs in the dynamic interaction between teachers, students, and the natural world.

Becoming and the interconnectedness of nature

Deleuze and Guattari (1987) emphasized that *becoming* occurs through relations with and interactions between entities. This relationship is particularly relevant in a Nature-inspired Pedagogy of Becoming, where the learner's relationship with nature is central to the educational experience. Nature-inspired education situates learning within changing and unpredictable ecosystems. The educator, learner, and nature form an interconnected triad of influence, where all are in a constant state of *becoming*. For example, as my students and I hike mountains or paddle rivers, we are becoming *with* nature. We are not passive observers but active participants, shaped by nature's rhythms and characteristics. The forest is not an inconsequential backdrop for learning but an active participant in the process, influencing the students' perceptions, emotions, and intellectual engagement. In turn, the students shape nature through their presence, stories, and ecological stewardship, further exemplifying Deleuze and Guattari's (1987) vision of *becoming as* a co-creation process. Another area at Education Plus where NIPB is evident is our cross-curricular learning approach. Formal schooling has programmed students to switch curricular thinking on and off at the ring of a bell. Nature is organic and naturally interconnected.

In one class, students can discuss a moral issue that arose from a reading, represent it artistically, and research its historical roots for a presentation. One of the best questions a student can ask at the end of our time together is, "Sir, what subject was that?"

Beyond fixed knowledge: Embracing uncertainty and openness

One of the critical features of Deleuze and Guattari's (1987) *becoming* is its rejection of teleological processes—there is no ultimate end or fixed state to be achieved. In nature-inspired teaching, this philosophy translates into a learning process that embraces uncertainty and fluidity rather than adhering to rigid outcomes or benchmarks. The unpredictability of the natural world—whether through climate, wildlife encounters, or shifting ecosystems—requires educators and learners to remain adaptable and open to the unexpected.

Travel requires a level of flexibility and adaptability. My travels as a teacher to Africa, Iceland, Greenland, Slovenia, and Haiti taught me to expect the unexpected. Excursions with students into forests and down rivers are similar. Like nature itself, the nature-inspired teacher disappears into the mixture of teacher/student/nature to be imperceivable and expect the unexpected. This can be difficult, especially when danger arises. When students want to put aerosol cans into the campfire, it is difficult to stand back and say, "Cool, let's see what will happen." (I have found that these kinds of events are rare and relatively easy to avoid.) Many of my best experiences in nature are serendipitous and not scripted. I set out in a direction with an idea but ended up with unexpected stories and experiences. Our time in Africa is an excellent example. We had a one-month visitor's visa that we extended each month for two years. Getting off a plane at Kotoka International Airport in Accra, with four duffle bags and no contacts, required an embracing of the unknown.

Nature-inspired Pedagogy of Becoming encourages educators to allow the learning process to be shaped by the unpredictability of nature, moving away from traditional, classroom-based models that prioritize control and predefined learning outcomes. The unpredictability of the natural world is an opportunity for creativity and emergent learning, where new knowledge and insights arise organically from the interactions between learners, teachers, and the environment. This openness to possibility encourages deeper engagement with the natural world and encourages learners to see education as a continuous, evolving journey rather than a destination. At Education Plus the day ends gradually. Often, I will say, "once you are ready to go, return your journals, paints, and other supplies. Text me if you have questions or comments to add." It is not unusual for students to stay for an extra hour and then text throughout the evening, extending the class, at their speed. While our students learn all required subjects, our approach differs from other schools: we don't have traditional grade levels. Although many still see a high school diploma as a 'destination,' we encourage students to view it as a plateau in their interconnected, rhizomatic journey of learning and life. Over time, they come to recognize themselves as lifelong learners, with high school as one phase in a continual process of growth and discovery.

For my part, I resist having lesson plans with objectives and measurable outcomes. For example, I might ask students to suggest a location to study—like a local park. I might explain what an urban ecosystem is and then, on location, have them conceive and develop a project (solo or in groups) to represent part of the ecosystem—plants, animals, people, human structures, or weather. Knowledge would not be divided into separate subjects; instead, students would explore themes and topics linking disciplines, following their own interests and finding

unexpected connections. Two groups might collaborate when they observe overlapping interests. Some groups might splinter into special interest pods. They would share their experiential learning with the group, which might be a painting, a model, a recorded interview with someone in the park, or a photo montage. As a nature-inspired teacher, I am a facilitator as I set up situations where this kind of learning is possible. I encourage *lines of flight* especially when students follow their curiosity and passion. Because my students grew up in "the system," I find myself pointing at power dynamics and structures and suggesting that they analyze societal norms and traditional roles. In most classes, I find myself—seated with my students—figuring out my *lines of flight* as I am among the learners.

Becoming-Minoritarian and nature-inspired pedagogy

Deleuze and Guattari's (1987) concept of *becoming-minoritarian*—moving away from dominant or majoritarian perspectives—also holds profound implications for nature-inspired teaching. Traditional education systems often prioritize specific knowledge structures, values, and ways of being that align with dominant cultural and societal norms. These systems emphasize mastery of fixed knowledge, static skills, and rigid authority structures. Hierarchical authority structures are prevalent in high schools. Once in nature, those structures often fade and sometimes crumble. Many students are more knowledgeable than I am about various elements of nature. In these situations, students share their knowledge, and I learn. NIPB, rooted in nature-based education, challenges majoritarian structures. It shifts the focus from mastery and control toward a more relational, process-oriented, and collaborative learning model. Through their interactions with the natural world, my students and I develop a profound sense of ecological stewardship, ethical responsibility, and respect for diverse ways of knowing. This shift toward minoritarian perspectives includes engagement with Indigenous knowledge systems, ecological wisdom, and non-Western ways of engaging with nature, emphasizing interconnectedness, reciprocity, and fluidity in ways that align with *becoming*. For example, Indigenous Land-based education often operates from a relational worldview where Land, learners, and educators are all interconnected, constantly influencing and shaping one another. Deleuze and Guattari's (1987) views amplify this view, offering a philosophical grounding for an education that rejects dominance over nature and instead promotes co-evolution, respect, and continuous transformation.

Temporalities of *becoming*: Moving beyond linear time

In Nature-inspired Pedagogy of Becoming, time takes on new dimensions. Deleuze and Guattari (1987) challenged the linear, goal-oriented structures often imposed on education—structures that view time as segmented and measurable in terms of outcomes. Instead, *becoming* operates rhizomatically: sometimes cyclical and appearing like the natural cycles of seasons, growth, decay, and renewal. Other times, based on ruptures, the *lines of flight* appear random and non-teleological. In the adolescents' narratives, their concepts of time in nature is not clock time and their experiences are not goal-oriented. Most tell stories of events that unfold without expectations or goals. Some attempted to summit hills, but many were passive participants to nature's whims. When applied to nature-inspired education, this approach to time encourages educators and learners to align themselves with the temporal rhythms of nature. Learning becomes a seasonal and ecological process, where growth and transformation happen

organically, in their own time. Nature-inspired Pedagogy of Becoming encourages educators to move away from rigid academic calendars or schedules and instead embrace time's cyclical and unpredictable rhythms as they unfold in natural settings. This broader view of time allows for a deeper engagement with the natural world, recognizing that learning and transformation unfold harmoniously with ecological rhythms rather than artificial deadlines. Allowing students extra time in class activities or for homework assignments produces better outcomes. I constantly remind myself of what I want—a student's best work—for some, this requires more time. I often remind them that even after a project is submitted, it will be returned, and they can continue working on it.

Ethical dimensions of *becoming*

Deleuze and Guattari's (1987) *becoming* also carries ethical implications for nature-inspired education. As students and educators engage with nature in a state of *becoming*, they develop a deeper sense of ethical responsibility toward the environment (Hill et al., 2024). The awareness that humans are not separate from but intimately connected to nature encourages an ethic of care, stewardship, and sustainability. In Nature-inspired Pedagogy of Becoming, educators, students, and nature transmit knowledge and facilitate ongoing, co-evolutionary learning experiences that instill a sense of accountability to the broader ecosystem. This ethical dimension aligns with Deleuze and Guattari's (1987) broader critique of anthropocentrism, suggesting that humans are not the central actors in the world but part of a more extensive, interconnected web of life. As students and teachers *become*, through their interactions with nature, they appear to develop a sense of responsibility to protect and nurture nature that shapes them. This ethical awareness encourages curriculum development emphasizing sustainability, ecological engagement, and respect for all life forms. I have been rewarded not only by seeing my students refrain from leaving garbage behind when we are in nature, but also by witnessing some of them take the initiative to pick up litter and dispose of it properly. Time in nature and perhaps a teacher's modeling appears to develop an appreciation and affinity for it to the point of protecting it. Recently I showed one class part of the James Dean movie, *Rebel Without a Cause.* At one point, Jim (James Dean) tosses a cigarette out his car window. I expected my students to gravitate toward his cool, rebellious, disaffected attitude. Instead, in their journal reflections, many pointed out that Dean had no respect for nature. It is now essential to consider the future directions and broader implications of this work. This leads us to the next steps—outlining the potential pathways for further development and application of nature-inspired pedagogies.

Next Steps—Branching Out, Connecting, and Transforming

In this research, I have contributed to the field of pedagogy, particularly in nature-inspired teaching. I have brought Deleuze and Guattari's (1987) philosophical framework to life by giving it substance beyond abstract theory. In a sense, I have put *flesh* on the *philosophical bones*—transforming their ideas into tangible context, content, and experience. Through the exploration of my journey as a nature-inspired teacher, as well as the experiences of adolescents interacting with nature, I have grounded concepts in real-world practices and personal reflection. This process not only bridges the gap between theory and practice but also allows for a richer, more embodied understanding of their ideas, illustrating how Deleuze and Guattari's (1987) concepts of becoming, rhizomes, and transformation manifest in everyday experiences. By

sharing my personal experiences, I provide a travel guide for aspiring nature-inspired educators. Through analyzing my narratives and the stories of camp counsellors, I have crafted an approach to teaching and proposed a theoretical framework that could benefit future generations of students and teachers. By applying Deleuze and Guattari's (1987) concept of *becoming to* nature-inspired pedagogy, educators can recognize that they are constantly *becoming* and should afford the same expectations to their students. Teachers can cultivate a dynamic, transformative, and relational approach to teaching/learning in a natural environment. Nature-inspired Pedagogy of Becoming guides students and teachers to embrace uncertainty, fluidity, and interconnectedness, aligning with the rhythms of the natural world. It challenges traditional, static education models, and it offers a view of learning as an ever-evolving process shaped by relationships with nature, other beings, and the broader ecosystem. Through this framework, nature-inspired education becomes a powerful means of teaching and transforming individuals and their relationship with the world around them.

Limitations

Several constraints and limitations exist in this research. Autoethnography, as a qualitative research methodology, inherently carries the potential for biases due to its personal and subjective nature. Since I am both the subject and the analyst, there is a risk of selective memory, confirmation bias, and emotional influence shaping the interpretation of events and experiences. I may have unconsciously highlighted experiences that align with my preconceived beliefs or theoretical framework while downplaying or omitting contradictory evidence. Additionally, the lack of external verification or triangulation can render autoethnographic findings less generalizable and more susceptible to criticism for being overly anecdotal. While these biases do not undermine the value of autoethnography, they underscore the importance of reflexivity—ongoing self-awareness and critical examination of my positionality, assumptions, and influence on the research process. Addressing these biases requires transparency in the methodology, an acknowledgment of limitations, and an openness to the multiplicity of interpretations and voices beyond my own. To include the voices of others, I included a chapter in which I analyze adolescent nature-narratives.

This research is not meant to serve as a universal model of becoming but as a travel guide of one educator's unfolding relationship with nature, pedagogy, and self. While this gave me creative space, it also limited the study's applicability to more conventional educational research frameworks.

The deterritorializing tendencies central to Deleuzian thought challenge traditional notions of validity, coherence, and linearity. My assemblages are inherently unstable and in flux; they may shift in time, space, and context. While philosophically consistent with the study's theoretical grounding, this instability complicates efforts to draw definitive conclusions or causal links. Future research might consider collaborative autoethnographies that map multiple becomings, further experimenting with methodological multiplicity in ways that deepen and destabilize what it means to learn, teach, and live pedagogically in relation to nature.

One under-represented topic in my research is the impact of human presence on natural environments, in terms of ecological change and how these interactions influence the relational dynamic between humans and nature. My primary focus has been on disrupting traditional educational hierarchies by flattening the teacher-student distinction and reimagining nature as an active teacher. However, this perspective often assumes that the flow of learning is

unidirectional—from nature to humans. What remains less explored is the idea that nature is also transformed by its encounters with humans. Natural environments are not static; they respond to and are reshaped by human activity. This occurs through physical encroachment, such as land development, pollution, and resource extraction, but also through subtler means like symbolic representation, storytelling, and pedagogical framing. Each human interaction with nature carries the potential to alter not just the landscape, but the meaning and role of that landscape within broader ecological and educational systems. If we consider the idea that nature teaches seriously, we must also consider what it absorbs—what it "learns"—from human behaviour. This reciprocal model invites a more complex understanding of nature as both subject and participant in educational processes. It also challenges us to think critically about our role in shaping the environments we claim to learn from. Whether our influence is beneficial or harmful, nature is inevitably marked by our presence. This calls for greater reflexivity in research and pedagogy, urging us to recognize that teaching and learning with nature involves mutual transformation.

Through my research and as an active participant in education in Québec, I recognize that the way curriculum is delivered in most Québec high schools needs to change. However, I also understand that this transformation cannot happen overnight. It is not a superficial adjustment that can be resolved through policy shifts or the introduction of new technologies. The issue extends beyond pedagogy; it also necessitates a change in the curriculum content. The problem is systemic; therefore, the change must also be systemic. This transformation requires Ministries of Education to relinquish outdated systems, including the reliance on standardized testing. Universities must develop teacher training curriculum and pedagogical frameworks that are eco-centric, while placing greater emphasis on Indigenous approaches to learning. Scholars must commit to advancing research in nature-based and Land-based pedagogies. Teachers need access to literature on nature-based education and robust, practical training for outdoor learning environments. My research is limited in scope, focusing specifically on the educational framework in Québec. Conducting studies in other regions of the world could produce different results due to varying pedagogical approaches. Additionally, as an autoethnographic study, it reflects my experiences. Interviewing teachers and students could further enrich the understanding of the phenomenon of *becoming* a nature-inspired teacher, adding depth and texture to the research. This is not a conclusion but a continuation of my own process of *becoming*. My study invites other educators to add their stories to mine, creating new rhizomes, collectively enriching and expanding the vision of nature-inspired education.

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APPENDICES

Appendix A. Informed assent form
Appendix B. Story writing activity introduction
Appendix C. Letter to camp directors
Appendix D. Story writing activity master sheet
Appendix E. Script for the introduction of research to potential participants
Appendix F. Parental consent letter and form
Appendix G. Ethics
Appendix H. Nature-based lesson plans

Appendix A

INFORMATION AND ASSENT TO PARTICIPATE IN A RESEARCH STUDY

Study Title: Adolescent – Nature Interactions

Researcher: James Watts
Ph.D. Department of Education

Researcher's Contact Information: **Concordia University**
Department of Education, Room FG-5.150
1455 de Maisonneuve Street W.
Montréal, Québec H3G 1M8
Wattts764@gmail.com

Faculty Supervisor: Dr. Carolina Cambre
Faculty Supervisor's Contact Information: Carolina.cambre@concordia.ca
Source of funding for the study: No funding

We invite you to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate. If there is anything you do not understand, or if you want more information, at any time during this process, please ask the researcher.

A. PURPOSE

The research aims to describe the experiences of young people as they interact with the natural world.

B. PROCEDURES

If you participate, you will:

- write a 300 – 400-word story about an experience you had in nature
- potentially have a 15-20-minute, **audio-recorded** discussion with the researcher while at camp
- give assent for the researcher to observe and take notes as you go about your daily tasks at camp

C. RISKS AND BENEFITS

You might face certain risks by participating in this research. These risks include:

- you will spend some camp time participating in a discussion and writing

Benefits include:

- You are participating in an important Ph.D. study.
- You may enjoy recalling an important event that happened to you in nature.
- If you are a writer, you may find this an excellent creative outlet.
- Your input may encourage others who read the research to engage in similar experiences in nature.
- I may publish the results of this research in educational journals. Your input may lead to changes in how teachers teach in schools.
- I will share the results with the camp director. Your input may influence conservation efforts at camp.
- You can request your own copy of the outcomes of this research.

D. CONFIDENTIALITY

I will code information collected in discussions and from observations. I will not use your name. Only I will have access to your identity in the discussion, your identity in your writing, and your identity during observations. I will safeguard that information. After 5 years, I will shred all papers and delete all electronic/magnetic audio-recording and written texts stored on USB keys. I will not reuse USB storage units.

We will gather the following information as part of this research:
your name, age, gender, and city where you live.

We will only use the information for the research described in this form.

We intend to publish the results of the research. It will not be possible to identify you in the published results.

In certain situations, legally we must disclose the information you provide. This includes situations where your life or another's life is at risk. If this situation arises, we will disclose the information as required by law.

F. CONDITIONS OF PARTICIPATION

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time. You can also ask that we not use the information you provide. We will honour your choice. I will destroy your input, whether audio recordings, electronic texts, and/or paper texts. If you decide that you don't want us to use your information, you must tell the researcher before August 31st, 2023.

As a compensatory indemnity for participating in this research, you will receive $5 in tuck credits. If you withdraw before the end of the research, you will still receive $5 in tuck credits.

From among the stories submitted at the end of the week, a random draw will select one entry to win a $100 certificate for camp merchandise. Your chance of winning depends on the number of entries submitted.

We will tell you if we learn of anything that could affect your decision to stay in the research.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information.

G. PARTICIPANT'S DECLARATION

I read and understand this form. I had the chance to ask questions and I received answers to all my questions. I agree to participate in this research under the conditions described.

NAME (please print) _____

SIGNATURE _____

DATE _____

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher at concordiajim@gmail.com. You may also contact his faculty supervisor.
If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

Appendix B

Story writing activity – page 1

Please complete and submit the assent form in the folder before writing the story.

This activity is open to staff at camp, between the ages of 13 and 19 inclusively.

Thank you for participating in this activity.
I will add $5 to your tuck account.
There is one winner at each participating camp.
The random drawing is on _____.
The prize is a $100 certificate for camp merchandise.
Good luck!

Detach and deposit in the raffle box

Name (for prize draw) _____

Detach and keep

Researcher: James Watts Contact email: concordiawatts@gmail.com

Concordia University – Dept. of Education
Supervisor: Dr. Carolina Cambre

Please contact me if you want:

additional information about this research

to receive a copy of the outcomes of the research

to have any or all your participation in this research removed and destroyed

Story writing activity – page 2

Booklet # _____

Story Details

In 300 – 400 words, write the story of an experience you had in nature - either here at camp or elsewhere.

Camp's name _____

Your name _____

Where you live (city) _____

Age ___ Male/Female/Rather not say Date _____

Please include an email address if you want to receive a copy of this research.

Appendix C

James Watts
Wattts764@gmail.com
514-748-2131

Dear camp director and board,

My name is James Watts. I am a Ph.D. candidate at Concordia University in Montréal. My research looks at the pedagogical transaction that may occur when adolescents are in natural environments like summer camps. I would like to do some of my research at your camp.

My data collection has three parts. The first is asking the camp staff – counsellors, kitchen staff, maintenance crew and lifeguards to write a story about one of their experiences in nature. It is a story writing activity. I will reward all participants with tuck credits and a random draw will select a winner. I will supply booklets and pens.

The second component is a brief (15-20 minute) discussion with some staff to hear about their experiences in natural environments. This I will audio record.

The third part will involve me walking around the camp and taking field notes about my observations of the camp and the staff.

An outline for all three parts is in the formal, University sanctioned, consent forms for parents and assent forms for staff. We will explain the study to participants and answer their questions before asking them to sign.

The camp's commitment would include allowing the participants the time (1-2 hours) to write about their experiences in nature, allowing the participants the time for brief discussions, and giving me permission to take field notes at your camp.

The benefits to the camp include the opportunity for staff to write and talk about their experiences in nature and receive rewards, as well as the option for you to get specific, objective feedback from the results of this study that could inform, improve, and support the way you run your camp.

Please let me know by email if you will partner with me in this research. If there are specific dates that are better than others, you should include them as well. If you require additional information, please contact me or my Ph.D. supervisor Carolina Cambre at carolina.cambre@concordia.ca

Thank you for your assistance as we work together to improve the lives of our young people.

James Watts

Appendix D

Story writing activity – Master sheet

Name	Booklet #	Gender	Age	City

Appendix E

Script for the introduction of research to potential participants

Thank you for the introduction (camp director) and for a few minutes of your time to introduce my research project.

I am a Ph.D. candidate in the Education department at Concordia University in Montréal. My research focuses on the experiences young people have **in nature.** I invite you to participate in this research.

The outcomes of my research may result in a better understanding of the impact this summer camp has on campers and staff. It might also inform educators of new approaches to teaching.

It will require a little of your time to read and sign an informed assent form (about 15 minutes), time to write your story (about 300-400 words) about a time – either here at camp or somewhere else – where you had an experience in nature (maybe one hour), and then about 15 minutes of your time to chat about your experience.

Anyone who participates will receive $5 added to their tuck account. Once I collect the stories, there will be a random draw for a $100 certificate for camp merchandise.

If, at any time, you would like to withdraw your participation, you may do so. You will still receive $5 added to your tuck account.

If you would like to participate, I have informed assent forms for you to complete and return to me any time this week.

Any questions?

Appendix F
Parental Consent Form

June 2023

Dear Parent(s) / Guardian(s),

I am a Ph.D. candidate at Concordia University in Montréal. My research examines the pedagogical transaction that may occur when adolescents interact with nature. Camp _____ has granted me permission to do my research with them this summer. I would like your permission to invite your child to participate in this research.

I will ask the camp staff to write a story about one of their experiences in nature. A random draw will select an entry to win a $100 camp gift certificate. All participants will receive tuck credits. I will supply booklets and pens.

The second component is a brief (15-20 minute) discussion with some staff to hear about their experiences in natural environments. I will audio record our discussion.

The third part will involve me walking around the camp, taking field notes about my observations of the camp and the staff, as they go about their daily lives.

I will not identify participants in the research, and I will destroy all data, written and recorded, after five years.

An outline for all three parts is in the formal, University sanctioned informed assent form that we will explain to your child before asking them to sign.

The camp will allow staff time (1-2 hours) to write about their experiences in nature and time to participate in a brief discussion.

If you require additional information, please contact me concordiawatts@gmail.com or my Ph.D. supervisor Carolina Cambre caroline.cambre@concordia.ca

Thank you for your assistance.

James Watts

Appendix G

INFORMATION AND CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Study Title: Adolescent – Nature Interactions

Researcher: James Watts
Ph.D. Department of Education

Researcher's Contact Information: **Concordia University**
Department of Education, Room FG-5.150
1455 de Maisonneuve Street W.
Montréal, Québec H3G 1M8
Wattts764@gmail.com

Faculty Supervisor: Dr. Carolina Cambre
Faculty Supervisor's Contact Information: Carolina.cambre@concordia.ca
Source of funding for the study: No funding

We are inviting your child to participate in the research study mentioned above. This form provides information about what participating means. Please read it carefully before deciding if you want your child to participate. If there is anything you do not understand, or if you want more information, at any time during this process, please ask the researcher.

A. PURPOSE

The research aims to describe young people's experiences as they interact with the natural world.

B. PROCEDURES

If your child participates, they will:

- write a 300 – 400-word story about an experience they had in nature
- potentially have a 15-20-minute, audio-recorded discussion with the researcher while at camp
- give assent for the researcher to observe and take notes as they go about their daily tasks at camp

C. RISKS AND BENEFITS

They might face certain risks by participating in this research. These risks include:

- spending some camp time participating in a discussion and writing

- being triggered by a negative memory of an experience in nature

Benefits include:

- They are participating in an important Ph.D. study.
- They may enjoy recalling an important event that happened to them in nature.
- If they are writers, they may find this an excellent creative outlet.
- Their input may encourage others who read the research to engage in similar experiences in nature.
- I may publish the results of this research in educational journals. Their input may lead to changes in how teachers teach in schools.
- I will share the results of this research with the camp director. Their input may influence conservation efforts here at camp.
- They may request their own copy of the outcomes of this research.

D. CONFIDENTIALITY

I will code the information collected in the discussion and from observations. I will not use their name. Only the researcher will have access to their identity in the discussion, in their writing, and during observations. I will safeguard that information. After five years, I will shred all papers and delete all electronic/magnetic audio-recording and written texts stored on USB keys. I will not reuse USB storage units.

We will gather the following information as part of this research:

their name, age, gender, and the city where they live.

We will only use the information for the research described in this form.

We intend to publish the results of the research. However, I will not identify participants in the published results.

In certain situations, we must disclose the information that they provide. This includes situations where their life or another's life is at risk. If this situation arises, we will disclose the information as required by law.

F. CONDITIONS OF PARTICIPATION

They do not have to participate in this research. It is purely their decision. If they do participate, they can stop at any time. They can also ask that we not use the information they provide. I will respect their choice. I will destroy their input, whether audio recordings, electronic texts, and/or paper texts. If they decide that they don't want us to use their information, they or you must tell the researcher before August 31st, 2022.

As a compensatory indemnity for participating in this research, they will receive $5 in tuck credits. If they withdraw before the end of the research, they will receive $5 in tuck credits.

From among the stories submitted at the end of the week, we will randomly one entry to win a $100 certificate for camp merchandise. Their chance of winning depends on the number of entries submitted.

We will tell them if we learn of anything that could affect their decision to stay in the research.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use their information.

G. PARTICIPANT'S DECLARATION

I read and understand this form. I had the chance to ask questions and I received answers to all my questions. I agree that my child may choose to participate in this research under the conditions described.

CHILD'S NAME _____

NAME (please print) _____

SIGNATURE _____

DATE _____

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher at concordiajim@gmail.com. You may also contact his faculty supervisor.
If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

CERTIFICATION OF ETHICAL ACCEPTABILITY
FOR RESEARCH INVOLVING HUMAN SUBJECTS

Name of Applicant:	James Watts
Department:	Faculty of Arts and Science\Education
Agency:	N/A
Title of Project:	Biophilia and Learning in Adolescent – Nature Interactions
Certification Number:	30016442

Valid From: May 02, 2022 To: May 01, 2023

The members of the University Human Research Ethics Committee have examined the application for a grant to support the above-named project, and consider the experimental procedures, as outlined by the applicant, to be acceptable on ethical grounds for research involving human subjects.

Richard DeMont

Dr. Richard DeMont, Chair, University Human Research Ethics Committee

Appendix H

Nature-based lesson guides

English class: *The Lady of Shalott* Indoors

In a nature-based-inspired English lesson on Tennyson's *The Lady of Shalott*, students explore the poem through non-linear, open-ended methods that encourage creative, diverse interpretations in line with Deleuze's ideas on rhizomatic thought and "lines of flight." Here's how this lesson might unfold:

Exploring *The Lady of Shalott*

Subject Area: English literature (Grade 10-11)

Setting: Indoors

Duration: 1–2 hours

Encourage students to connect personally with *The Lady of Shalott*, integrating their interpretations with interdisciplinary ideas and creative expressions, all while embracing multiplicity and non-linear thinking.

Outline:

Setting the Rhizomatic Ground: Moving Beyond a Single Narrative

1. *Activity:* Begin with a brainstorming session where students share words and themes that the poem evokes (e.g., isolation, vision, art, enchantment, desire, mirrors, freedom). These are mapped on the board as a web, showing connections as themes emerge. Introduce the idea of "rhizomes"—where ideas interconnect in unexpected ways.

Deterritorializing the Text: Breaking Away from Fixed Interpretations

1. *Activity:* Divide students into groups, each with a different lens through which to explore the poem:
    - **Historical Context:** Examining Victorian ideals of femininity and confinement.
    - **Psychoanalysis:** Exploring the Lady's mirror as a symbol of self-perception and the tension between inner and outer worlds.
    - **Artistic Representation:** Considering how mirrors and weaving relate to artistic creation.
    - **Romantic/Medieval Myth:** Analyzing how the poem connects to or subverts traditional myths of isolation or enchantment.
    - Each group shares their interpretations, fostering a discussion that encourages connections and contradictions.

Experimenting with Assemblage: Building on Prior Knowledge

1. *Activity:* Students create a small "assemblage" inspired by the poem, combining images, quotes, lyrics, or personal reflections. For instance:
    - A digital collage of mirrors, water, and art materials might express the Lady's isolation and creativity.
    - A song choice might highlight themes of desire and entrapment.
    - Students share in small groups, discussing how their choices resonate with the poem, expanding their understanding.

Lines of Flight: Reimagining the Ending

1. *Activity:* In pairs, students brainstorm new endings where the Lady escapes her curse or finds self-determination. Each pair presents their alternative ending creatively and explains how it changes the poem's themes.

Rhizomatic Reflection

1. *Activity:* End with a free-write on one of these prompts:
    - What new connections did you make about *The Lady of Shalott*?
    - How did different perspectives shift your understanding?
    - How do the Lady's experiences relate to modern life?
    - Students share these reflections, enriching each other's perspectives on the poem.

Math class: Exploring Linear Equations Outdoors

A nature-based lesson on linear equations, set in a forest, encourages students to think beyond abstract math, using natural patterns and spatial awareness to understand mathematical concepts. Situated in nature, this lesson allows students to draw connections between math and the natural world.

Discovering Patterns, Relationships, and Lines in Nature

Subject Area: Mathematics (Linear Equations) (Grade 10-11)

Setting: Forest

Duration: 1–2 hours

Outline:

1. **Opening: Observing Patterns and Lines in Nature**
2. *Objective:* Connect the concept of "lines" to natural formations and growth structures.
3. *Activity:* Students discuss where they see "lines" or patterns in the forest, like tree trunks, paths, or branches. In pairs, they document examples, noting repeating patterns, directions, or shapes.

Introduction to Linear Equations Using Forest Landmarks

1. *Objective:* Tangibly introduce linear equations with natural markers.
2. *Activity:* Using two landmarks (e.g., trees or rocks) as endpoints of a "line," students observe the "slope" (angle or elevation) and "y-intercept" (imaginary baseline crossing). Each pair measures and documents their line's "slope" and creates an equation, reflecting on how it represents a natural relationship.

Rhizomatic Problem Solving: Diverse Approaches to Lines

1. Emphasize that there are multiple ways to explore the concept.
2. *Activity:* Groups interpret lines through different lenses:
    - **Path as Line:** Walking from one point to another and observing direction.
    - **Shadow Lines:** Observing how shadows shift with the sun.
    - **Natural Lines:** Observing logs or branches as imperfect but directional lines.
    - Groups share their interpretations, showcasing various perspectives on linear relationships.

Assemblage Creation: Mapping Personal Equations

1. *Activity:* Each student creates a "line" based on their observations, pairing it with personal reflections. They might sketch, photograph, or write out their equation. Using string or markers, they map their line on the forest floor, visualizing slope and intercept.

Lines of Flight: Challenging Linearity

1. Students explore elements that deviate from strict linearity, such as twisting roots or streams.
2. *Activity:* Reflecting on these "non-linear" elements, students discuss how patterns emerge even without a strict equation, challenging the idea of linearity in nature.

Reflection and Rhizomatic Feedback

1. *Activity:* In a closing circle, students reflect on questions like:
    - How has your view of lines or patterns changed in math and nature?
    - How did being outdoors affect your understanding of linear equations?
    - Students journal or share aloud, offering peer feedback on each other's unique equations.

Evaluations

Feedback, in the first lesson, focuses on each student's assemblage, discussion contributions, and final reflections, valuing originality, creative connections, and the willingness to explore unconventional ideas. This approach encourages students to view *The Lady of Shalott* as a dynamic text that invites multiple, intersecting interpretations.

Evaluation of the second lesson focuses on originality, openness to diverse interpretations, and the ability to connect math concepts with the natural world. Students are encouraged to appreciate linear and non-linear thinking, seeing math as a flexible, creative process drawing on real-world experiences.

Teachers should self-evaluate to ascertain that the class is nature-based and does not fall into traditional frameworks. Questions for the teacher could include: How did I become a learner during the lesson? What new/unexpected connections were made to the text? How did I create an environment where nature-based learning was encouraged? How did I provide students with an opportunity to self-evaluate? What were some of my challenges during the class?

These lessons work best for developing critical thinking, interdisciplinary connections, and creative engagement rather than preparing students for standardized tests or conventional assessments. Both lesson plans focus on nature-based, experiential, and non-linear learning inspired by Deleuzian philosophy, encouraging students to approach traditional subjects with creativity and personal insight. The difficulty is with assessment within the current Québec pedagogical system that emphasizes measurable outcomes and traditional content mastery.