

On snakes, snails and hedgehog tales: Critical reflections on early childhood education for sustainability (ECEfS) in the Anthropocene.

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In Aotearoa New Zealand and globally, anthropogenic climate change and other socio-environmental issues are having a profound and negative impact on natural ecosystems, cultural sites, human communities, and multiple species. These impacts have significant implications for the education of our children and early childhood education for sustainability (ECEfS) offers a hopeful way forward. In this article we suggest that the principles of ecopedagogy hold promise for a holistic form of ECEfS in Aotearoa New Zealand. ECEfS supports the development of sustainability values, dispositions and concepts in young children. The authors demonstrate how these characteristics of ECEfS link well with *Te Whāriki* (Ministry of Education, 2017) as a holistic, place-based and relational curriculum. In this paper we use vignettes drawn from our experiences as researchers and educators in ECE as prompts for reflection. The vignettes provide opportunities for teachers to inquiry into their own pedagogical practice and implications for weaving ecopedagogy into the curriculum. In this article we propose a holistic form of ECEfS that is cognisant of the interdependencies between healthy environments, non-human animals and communities.

Introduction

Te Whāriki: He Whāriki Mātauranga mō ngā Mokopuna o Aotearoa: Early Childhood Curriculum (Te Whāriki) (Ministry of Education [MoE], 2017) is the early childhood education (ECE) curriculum in Aotearoa New Zealand. This curriculum creates “a powerful base from which to develop ecological pedagogies” (Ritchie et al., 2010, p. 3). *Te Whāriki* is designed to be responsive to local contexts in order to foster a holistic place-based pedagogy. The framework asks teachers to weave a curriculum that, “must speak to our past, present and future” (MoE, 2017, p. 7). This article problematises what this means for ECE in Aotearoa New Zealand in the context of the Anthropocene, a geological epoch of human-induced climate change and other socio-environmental issues (Kress & Stine, 2017). This is a critical conversation that deserves our full attention.

Socio-environmental issues in the Anthropocene are having, and will continue to have, an increasingly dire effect on children’s well-being (Ritchie, 2015). Children are connected with “the other matter, things, and energies” that surround them (Tesar & Arndt, 2019, p. 191). As a result of this, children’s well-being is inextricably linked to the good health and stability of wider ecological systems (Sandifer et al, 2015). If we are to weave a curriculum that

“speaks to our past, present and future” (MoE, 2017, p. 7), then we need to consider how global neoliberal late stage capitalism is impacting the integrity of ecosystems planet-wide. The hyper extractive productive and consumptive patterns of capitalism has led to climate change, depleted resources, habitat destruction, biodiversity loss, food scarcity, social inequality, poverty, war and pandemics (Kahn, 2008). As educators of young children, we have an ethical responsibility to enable them to respond to these challenges.

Early childhood education for sustainability (ECEfS) is one response to global environmental crises that threaten the wellbeing of all life on Earth. ECEfS is a synthesis of ‘early childhood education’ and ‘education for sustainability’ (Davis, 2009, p. 229). However, ECEfS is not widespread across the ECE sector in Aotearoa New Zealand despite there being a growing number of services that are promoting sustainable practices and innovative nature-based programmes (Croft, 2017). Likewise, ECEfS is under-theorised by early childhood teachers and researchers (Davis, 2009; Payne, 2018).

As a prelude to the advocacy for ECEfS in this study, it is important to clarify what it is and differentiate it from the traditional provision of nature education and outdoor experiential play (Davis, 2009). While experiential learning in nature is a significant dimension of ECE (with roots in Froebel’s kindergartens or ‘children’s gardens’), ECEfS has a broader agenda. It focuses on sustainability issues and regards young children as “active, engaged young citizens” (Davis, 2009, p. 228). Citizenship education is not new in ECE. Indeed *Te Whāriki* visualises children as “secure in their sense of belonging and in the knowledge that they make a valued contribution to society” (MoE, 2017, p. 2). However, citizenship education under the umbrella of sustainability education is more focused on socio-environmental issues. It is regarded as a transformative space within which children can problem solve and take action with regard to sustainability issues.

Not all forms of ECEfS have the capacity to be transformative. Some forms of ECEfS, especially those premised on neoliberal assumptions of continued economic growth, are inadequate to face the challenges of the Anthropocene (Nelson et al., 2019; Tulloch, 2016). These models of ECEfS may be traced back to United Nations (UN) inspired neoliberal discourses of sustainable development (SD). Sustainable Development Discourse (SDD) dominates policy frameworks in education in Aotearoa and internationally (Tulloch, 2016). It focuses on individual behaviour change and the creation of future citizens who can employ soft-green technological fixes while largely ignoring the systemic underpinnings of socio-environmental issues (Tulloch, 2016). Nelson et al. (2019) have argued that these approaches to ECEfS are based on “neo-liberal and colonial modes of relating” to the world (p. 428). Both of these modes of relating to the world (including the underpinning values and attitudes) are based on the “western modernist meta-narrative that celebrates human-centred exploitation of the natural world” (Neilson, 2021, p. 12).

As early childhood educators, it is imperative that we rethink our approaches to sustainability education (Nelson et al., 2019). In doing so we unsettle deeper ontological premises about human-nature relations including those of human superiority and dominance over nature. These premises are supported by Western ideological binaries and division between nature and human (Tulloch, 2016). It is these kind of ontological premises that ecopedagogy seeks to challenge. Haila (2000) claims that the nature/culture dualism is entrenched in Western metaphysics and has led to a conceptual prison. This, she argues, has a detrimental effect on environmental thought as it leads to the objectification of nature instead of considering the environment as inextricably interwoven with human experience.

This kind of contextual thinking is more aligned with *Te Whāriki* if we conceive of “people, places and things” as interconnected and not separate (MoE, 2017, p. 24). Ecopedagogy as a basis for ECEfS promotes deep philosophical thinking in children and challenges these binaries that shape Euro-Western thought.

In this article we propose a re-imagining of ECEfS that supports a holistic metaphysics, regarding human existence and nature as intertwined and not separate. We also examine the potential of ECEfS as a compassionate practice of ecological and social justice and multispecies wellbeing. In doing so we hold onto the basic tenets of environmental education (EE) pedagogy – including the dimensions of learning ‘in, about and for’ the environment. We build on this framework to re-imagine possibilities for ECEfS supported by the relational and holistic aspects of *Te Whāriki* and ecopedagogical principles. This is illustrated by vignettes that demonstrate how ECEfS can provide space for children’s holistic engagement with nature and a reconfiguring of human and non-human relations. We also provide a vignette that contrasts with this. Our analysis illustrates and highlights the significance of a sociocultural and ecopedagogical approach in authentic, complex and meaningful ECEfS learning experiences.

Anthropogenic climate change: What does it mean for early childhood education?

Anthropogenic climate change and other socio-environmental issues have an effect on children’s experiences of security, place and stability. Extreme weather events can displace families, interrupt the continuity, regular events in their lives, and change the face of the environments that they knew. Children may experience differing levels of fear and insecurity through indirect or direct experience of these extreme weather events. It is critical that educators respond to these challenges by considering how to nurture the holistic well-being of children and their families. Teachers need to be prepared for this real-life learning in the Anthropocene. A way forward is to weave sustainability education through the local curriculum in a holistic way that will empower and support children, families and communities.

Tesar and Arndt (2019) argue that a post-human lens applied to a re-reading of *Te Whāriki* is important in ECE during the Anthropocene. This perspective elevates child voice in the processes that shape their world. Within this view, children are not regarded in terms of adult/child binaries, but rather as enmeshed within the assemblage of relationships between humans and the more-than-human world (Tesar & Arndt, 2019).

Anthropogenic climate change is catastrophic for life on Earth, hence why ECEfS is crucial for our children’s future. Climate change causes extreme weather events globally including forest fires, heatwaves, storms, floods, and cyclones (Chung et al., 2021; Kopnina & Shoreman-Ouimet, 2015; Kress & Stine, 2017). Scientists claim that the warming of the surface ocean from anthropogenic (human-induced) climate change is causing an increase in the intensity and frequency of tropical cyclones and extreme weather events (Intergovernmental Panel on Climate Change [IPCC], 2019). The Intergovernmental Panel on Climate Change claims that:

Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate (IPCC, 2019, p. 4).

This increase in temperature impacts biodiversity and ecosystems, including extinction of a range of plant and animal species (IPCC, 2019). It also impacts human systems through: “Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth” (IPCC, 2019, p. 9).

The threshold of 1.5°C is of crucial significance because scientists say that beyond that all survival on Earth is at risk and the impacts of climate change will be severe. Top climate specialists are sceptical that we will be able to meet the target of 1.5°C, and indeed we are likely to go well beyond this by the end of the century (Tollefson, 2021).

As we write this article the subject is particularly poignant. It is mid-summer in Aotearoa New Zealand and the climate is usually benign during this season. However, currently the North Island is experiencing severe weather events resulting from climate change including flooding and two ex-tropical cyclones. These events have caused loss of human life, including children’s lives; the lives of countless non-human animals who have been swept away in flood waters; ecosystem damage and disruptions to access to water, food and electricity. Roads have been damaged, cutting off and isolating communities (Dreaver, 2023; Dunseath, 2023; Ikram, 2023). For Māori who have suffered the impact of colonisation and dispossession of their lands, climate change and loss of place leads to further trauma.

The above discussion of anthropogenic climate change highlights the problematic space educators are now in when creating a curriculum that asks us to speak to children’s “past, present and futures” (MoE, 2017, p. 7). The accelerating and disturbing consequences of climate change must be critically considered by early childhood educators.

The ‘in’, ‘about’ and ‘for’ approach and ECEfS

Sustainability and environmental education in the early years is one response to climate change and socio-environmental issues. It is a holistic pedagogy that can support children in learning ‘in, about and for’ the environment (otherwise known as heart, head and hands) (Barker & Rogers, 2004; Eames & Barker, 2011). The ‘in, about and for’ approach originates in environmental education and can be transferred to ECE contexts. This approach engages children in learning ‘in’ the environment and developing a love of nature and investigating environmental issues first hand. This interplays nicely with learning ‘about’ the environment, whereby children inquire into the importance of ecological integrity and the cause of various environmental issues. The aspect of ‘for’ the environment invites children to take action and address an environmental issue and make positive change (Barker & Rogers, 2004). It is important that the three dimensions of ‘in’, ‘about’ and ‘for’ work holistically together.

The ‘in, about and for’ approach provides a framework for ECEfS in that it considers the totality of the child’s experience (head, heart and hands) in engaging them in sustainability education. The ‘in’ aspect of ECEfS supports children in having “quality learning experiences and interactions in rich environments in which nature has a central place” (Davis, 2009, p.4).

Otherwise known as the heart dimension, the ‘in’ aspect encourages ECE teachers to prioritise the more-than-human world, and to support engagement with plants and animals and non-human environments. The natural environment provides spaces for children to build relationships with other-than-humans in localised contexts. This includes, for example, rivers, mountains, beaches, and forest. It provides space for spiritual connection and engagement. Being

'in' the world, experiencing it with the senses, immersing oneself in a sense of wonder is of critical significance as it fosters in children a sense of spirituality. The significance of 'in' the environment experiences has been established by Barrable and Booth (2020) who argue that, "We do know that children who have nature-rich routines tend to be more empathetic towards non-human animals, as well as cognitively more aware of the human-nature relationship" (p. 3).

Learning 'about' the world around us encourages children to critically inquire into what they experience 'in' the environment. It supports life-long learning attitudes and behaviours such as dispositional learning, emotional and social competence, ability to problem solve, and critically think. Finally, the 'for' aspect encourages children to take action based on their experiences 'in' and knowledge 'about' the natural world of which they are an integral part.

We now consider how the 'in, about and for' dimensions of environmental education align with *Te Whāriki* as a relational, place-based and holistic curriculum.

Te Whāriki: A relational and holistic curriculum

Te Whāriki is strongly positioned to foster the delivery of authentic, meaningful and place-based ECEFS (Ritchie et al., 2010). According to *Te Whāriki*, ECE services should be integrated in a holistic fashion with their families, wider communities and localities (MoE, 2017). Place-based ECEFS focuses on children developing ecological knowledge 'about' and 'in' their own place, which makes it meaningful to their local context and community. Children also learn to take action 'for' positive changes 'in' their own localities. These sociocultural underpinnings of *Te Whāriki* support a holistic localised curriculum that form the basis for ECEFS.

Te Whāriki also regards the child as a holistic learner, which supports the 'in, about and for' approach of environmental education. It is the whole child who is at the centre of *Te Whāriki*, including their culture, history, family and environment broadly speaking. The child is conceived of within *Te Whāriki*, as agentic, resourceful, resilient, and capable. This aligns well with the 'for' dimension of ECEFS – supporting the child as capable of taking action to make a positive difference to their world.

Ecopedagogy

From the above section it is clear that the holistic nature of *Te Whāriki* is grounded in key tenets of place-based education learning 'about' the environment; curriculum integration embedded in the everyday lives of children; experience 'in' the lived environment and active child participation 'for' the environment.

In this article we are suggesting that viewing *Te Whāriki* through an ecopedagogical lens deepens the practice of ECEFS. Ecopedagogy is a type of environmental and sustainability education that aims to develop a "more just, democratic and sustainable planetary civilization" (Kahn, 2008, p. 9). In this regard ecopedagogy is more than just a way of teaching and learning in environmental education (Antunes & Gadotti, 2005).

Ecopedagogy is a form of pedagogy that supports children in life-long learning dispositions and problem-solving in a holistic way that takes into account both social justice and environmental sustainability (Gaard, 2008). It is thus a

fitting pedagogy for ECEfs, especially given the challenges of climate change and other socio-environmental issues of survival on Earth. It is based on a culture of peace and sustainability and the following premises: “educate to think globally; educate feelings; teach about the Earth’s identity as essential to the human condition; shape the planetary consciousness; educate for simplicity, care and peacefulness” (Antunes & Gadotti, 2005, p. 135).

Through ecopedagogy, children are given opportunities to develop a self-identity that is connected with nature; to an emotional and spiritual connection; to see oneself in terms of one-ness with the Earth. Ecopedagogy supports an attitude of care and respect for the Earth, but can also provide opportunities to challenge the dominant human/ non-human binary that shapes relations with the other-than-human. It is focused on ecologies, interdependencies and relationships.

This worldview aligns with indigenous worldviews. According to Ritchie (2015), indigenous people “do not position themselves as superior beings to the land, flora and fauna, but as ‘co-habitors’ of these places and spaces” (p. 43). In Aotearoa New Zealand this has particular significance for Māori, who are tangata whenua (indigenous people of this land).

Children live within local, regional and global ecologies. Ecopedagogy seeks to develop basic environmental literacy and address social justice. It explores human-nature relations and encourages children to be environmental subjects that listen to what the non-human world has to say (Gaard, 2008). The child is positioned as open to change and interacts with the ‘other-than-human’ in empathetic ways. The concepts of ecological democracy and multispecies wellbeing are central here.

Through ecopedagogy in ECE we can challenge the logic of human domination over nature and instead promote the holistic ecological values of community, caring for the Earth and listening to non-human animals. Strengthening children’s nature-human connections is at the heart of ecopedagogy as it asks us to consider the more-than-human worlds.

The following vignettes are drawn from lived experiences of three different authors. They may provide prompts for reflecting on integrating ECEfs into teacher practice to contribute to positive learning outcomes for children.

Vignette # 1: Prickly tales (Michelle Andrews)

Facilitating an environment that integrates kinship with the other-than-human into teaching and learning is illustrated in the following vignette about Hemi the hedgehog.

This vignette comes from my early days as a manager of an early childhood community-based education and care centre. It was a typical morning where children pursued their interests and directed their own learning. A child came across a hedgehog under a bush. Soon a group of children gathered around asking questions, “what is it?”. It became evident that the hedgehog was extremely unwell, he had no prickles, and his skin was scaly.

The children had so many questions, “why has he not got prickles?” and “what is wrong with him?” From a health and safety point of view common sense would suggest it would not be in the best interest of children to touch the hedgehog - who knew what diseases he could transmit?

Faced with the dilemma of pursuing this interest to promote learning or disregard the interest and redirect children away from the hedgehog was the problem posed for teachers at this centre. Fortunately, the kaiako (teachers) were incredibly skilled and very focused on dispositional learning. They noticed the interest, recognised the potential learning opportunity and responded to the emergent curriculum and potential learning opportunities this hedgehog posed.

The hedgehog was later named Hemi by the children. He became the basis of a long-term research project that many children engaged in over a sustained period. Hemi became an intentional and integral part of assessment, planning and evaluation processes in teaching and learning. Children became involved in taking Hemi to the vet and finding out what was wrong with him and what medication was needed to nurture him back to good health. This meant that children extended the learning to their local community through their involvement in visits or phone calls to the local vet.

They visited the library to get books out on hedgehogs. Children discovered Hemi had mange and that it was not safe to handle Hemi until his treatment had been completed. They became aware of the process to get Hemi back to good health and when it would be safe to handle him.

Overtime, intentional planning included the questions that emerged (notice, recognise and respond planning) from children. The children directed the inquiry and research and became in tune with Hemi. They were able to convey to their parents Hemi’s possible needs and could clearly articulate what they were doing to support Hemi’s wellbeing and health. They shared what they knew and what they were still trying to find out. Over time the value of having Hemi at the centre eventually began to win the approval of parents, particularly when they could read the analysis of learning observed in their children’s learning stories.

The children became strong advocates and could provide a rationale to their parents as to why Hemi was not ‘disgusting’. Children could discuss the process of the inquiry which was displayed on the wall. They confidently talked to their families about the exciting journey through their exploration and discovery. They shared what they had learned with their parents and demonstrated the ability to convey the value they placed on the relationship they had developed with Hemi. They demonstrated the ability to empathise, consider the worldview of the hedgehog and rationalise a moral, intrinsically motivated argument on the benefits of nurturing Hemi back to health. They could clearly articulate a culture of care.

Children began to wonder what Hemi would eat and the more they learned the more they wanted to find out what they did not have the answer to. They inquired and researched their questions, testing their working theories and problem solved how they could find out the answer. They drew pictures and held deep conversations sharing their thinking, suggestions, ideas, and predictions with each other. What would Hemi look like with prickles? What could they observe in Hemi’s behaviour that indicated positive gains to health and wellbeing? What did the vet think and

suggest about how well Hemi was progressing? What cat food and insects did Hemi prefer to eat? Was Hemi hibernating or was he dead? Kaiako skilfully wove in literacy, mathematics, social engagement, the arts and science through this strong interest. This demonstrates holistic learning.

This vignette has demonstrated that children's relationships, connections and experiences within the other-than-human world enriches the depth of the learning in a multitude of ways. This links to an ecopedagogical view of sustainability as experiencing "the relationship we have with ourselves, with others, and with nature" (Antunes & Gadotti, 2005, p. 137).

Experiences 'in' the natural world can spark curiosity as highlighted by the natural line of inquiry prompted by Hemi the hedgehog. The children's interests were used to prompt critical reflection 'about' the more-than-human world. One seemingly small everyday occurrence in the environment was turned into an emergent curriculum. It was picked up by children and fuelled by curiosity through which responsive pedagogy was then used to support children's understanding about the non-human animal.

Through an ecopedagogical lens, Hemi's story demonstrates how children might be supported to think more holistically about their relationship with non-human animals and consider the agency of non-human animals primarily labelled as 'pests' in Aotearoa New Zealand. This vignette demonstrates how to support children in developing an ethic of care and compassion toward all non-human animals and consider their history, subjectivity and agency in their own lives.

Thinking in a relational way instead of a compartmentalised fashion is crucial for compassionate ethics. When we look at our world in relational and pluralist ways then we make space for other modes of experiencing the world. As teachers we can provide opportunities for children to consider other voices from the 'other-than-human' world (such as Hemi's voice). This is an important way to guide children in developing a kinship with non-human animals.

While the 'for' dimension of this story does not fit into a traditional environmental education lens (whereby children are taking action to address an environmental issue), the children were nonetheless engaged in taking action by compassionately responding to Hemi's needs. The 'for' dimension of environmental education can be expanded upon to encompass acting with care and compassion toward other living-beings. In this way, interspecies encounters like the one with Hemi can support young children in high level thinking and acting holistically through emotional responses, problem-solving, and care. This process is enabled by allowing child voice and agency (the children were concerned about Hemi). The teachers really listened with their hearts and negotiated the response to Hemi's plight with the children. This is a genuine example of responsive and reciprocal relationships between all those involved: Hemi, the teachers, children, wider community, and parents.

The deeper philosophical learning that comes from interspecies encounters like that of Hemi and the children is captured by Taylor and Pacini-Ketchabaw (2015): "We want young children to sense and register, in more than cognitive ways, that it is never just about 'us'. And we also want to stay open to the possibility that other species and life forms shape us in ways that exceed our ability to fully comprehend" (p. 512). This kind of deep philosophical learning is based on relationality with the Earth and will support children to view the world holistically. This is

important for ongoing life-long learning in the Anthropocene. The aim is for children to be able to perceive and respond to socio-environmental issues through a multitude of lenses. It supports the development of high level dispositions such as empathy and compassion and encourages children to view themselves as change-makers and advocates for the world they live in.

Vignette #2: Snake and snail trails (Tanya Shorter)

Time spent as a consulting teacher in forest schools prompted me to reflect on the notion of holistic curricula and ECEfs. Arriving one morning at a forest school in 2019, I was surprised to find a series of polystyrene trays being delivered. Audible gasps of surprise filled the room as their lids were removed, revealing giant African snails and a snake. I assumed that the rationality behind bringing these animals into the centre was to instil a sense of wonder and awe with children about animals from rainforests. These animals had come from a sister centre in England but had originally travelled from a rainforest in Africa. The children were able to hold the snake and snails and touch them. They were then returned to the sister centre. The encounter lasted for approximately 30-40 minutes.

Although, I too welcomed the opportunity to experience the weight of a snake in my arms and the extraordinary texture of its skin, I wondered about the wellbeing of these animals, before, during, and after this experience; their journey to London and their supposed return to Africa, contrast in living conditions (between their natural habitat and their present living conditions) and what ethical responsibilities, we as humans were depriving them of.

Open-ended questions beginning with sentences starters such as “I wonder...?” were not used to stimulate conversation, empathy, or critical thinking. I wondered how the experience supported children’s developing working theories; children’s unique way of thinking and inquiring in order to make sense of their world.

Many opportunities for children’s learning were missed during this brief encounter with rainforest animals. It demonstrates how animals may be used by teachers with unformed intent. Prior to the arrival of these animals, there had been no conversation or experiences enabling children to develop a curiosity or explore their own knowledge of these non-human animals. Upon reflection, I considered the lack of depth this experience provided children with.

This vignette speaks to the passive nature within which these non-human animals were positioned by the adults. This was an adult-driven experience and not child-centric or driven by children’s interests. The non-human animals were objectified for the purpose of child wonderment. This was role-modelled by teachers, encouraging children to regard the snake and snails as specimens of exoticism and awe.

To develop empathetic ecological consciousness, inter-species encounters (such as this one) ideally occur ‘in’ nature and authentic place-based contexts. The snake and snails had been removed from the original ecological context in which they belonged. This removal highlights the separatist (as opposed to holistic) Euro-Western ideological framework that positions the other-than-human as an object of the human gaze. We contrast this vignette with that of Hemi in which the learning was contextualised and allowed for the development of empathetic kinship with other species – a hallmark of ecopedagogy.

Vignette #3: “Is it alive?” (Kayla Charteris)

This vignette shares an insight into the daily lived experiences of my son and I as we co-construct knowledge and unpack philosophical wonderings about the Earth and the many wonderful ‘things’ which inhabit it.

Our beliefs about our position in relation to other-than-humans shapes how we teach our tamariki (children) and the values that we innately instil, whether we do this consciously or unconsciously. One must be mindful of how our attitudes influence what is role modelled to tamariki; the way we respond to a surprise visit from a spider for example, or the words that we utter as we see a cockroach scuttle along the floor. Tamariki absorb these kinds of attitudes and learnt responses, and apply them as a result of our role modelled behaviour. From the time my son Caden was conceived I wondered how I could pass on a disposition of compassion for the environment and other-than-humans, as I personally feel that given the state of the Earth, it is more important now than ever that Caden views himself as being no more ‘powerful’ than the other-than-humans that he will share this planet with.

Two methods which I frequently use to support Caden’s developing concept of self in relation to other-than-humans is through role modelling and questioning. These two methods come naturally to me as a parent, however they both could be translated into an ECE context.

I bought Caden a Peace Lily for his bedroom when he was 18 months old. It has continued to grow and flourish and has moved from his bedroom into our lounge. When we are playing a game inside which gets us moving around the place, Caden is reminded to ‘watch out for Lily’. If a ball brushes past Lily’s leaves he will tend to her, asking if she was okay and gently stroking her leaves. Personifying plants has encouraged Caden to develop an awareness of how our actions impact others, and to consider that they too have physical and emotional needs. I continue to get signposts that I am on the right path of instilling values in Caden which steer him towards living with compassion, as exemplified by his response as a two-year-old when asked what plants need to grow, “Water, sunshine, love and kindness”.

During the Christmas break I took Caden bushwalking along a track at the base of Mount Pirongia. It was family-friendly and had signs along the way which prompted people to stop and notice particular things (a fun way to share information about the forest). We came to a signpost which asked the question, “Is this tree stump alive?” followed by some information about what happened to the tree, and a description of what could be found living in and on the stump. Caden stopped to consider this question. He gazed at the stump which was disintegrating and covered in all sorts of living things. His first response was “no”, to which I then began asking a series of questions. The kinds of questions that I tend to ask Caden are in relation to increasing his awareness and knowledge of other-than-humans and are used to encourage him to think critically. In this instance of the tree stump, my questions were along the lines of: “Why do you think it is not alive?”, “What kind of things can we see growing on this stump? Are they alive?”. After our conversation he had changed his mind; the stump was alive!

Questions which I ask Caden are often philosophical in nature, as it is my intention for him to think critically when he reflects, and to challenge his own ways of thinking in the hopes that he becomes intrinsically motivated to care for others in ways that are based on his developing belief system. Caden himself, will now initiate the process of questioning and critical reflection since our time spent philosophising while on our bushwalk. I could tell that he had spent some time pondering deeply about the notion of being alive, and what constitutes being alive, as he began asking his own questions about the status of other-than-humans and things found in nature. We continuously co-

construct definitions together, and I see my role as being a facilitator in helping to unpack his working theories about the world. Role modelling and questioning are two very valuable tools I use to support Caden and his relationship with Earth and other-than-humans.

The above vignette demonstrates how role modelling and questioning are two accessible tools that can be used while 'in' the environment to support children's developing ecological consciousness and working theories. In turn, children learn 'about' the environment and the interdependencies between all species. This knowledge is important in forming a base to take agentic change 'for' the Earth. The insights Caden developed through philosophising in this story shapes his worldview and supports lifelong learning.

This vignette also illustrates the importance of providing children with authentic contexts. Opportunities for children to be immersed within nature provides them with authentic and meaningful ways to experience the taste, sounds, smells and textures and sights of the other-than-human world. This type of pedagogy is supported by the holistic underpinnings in *Te Whāriki* and ecopedagogy.

Conclusion

ECEfS provides a unique opportunity for an education that is holistic, place-based, immersed in local contexts, relational and culturally responsive. In this article we have proposed that ecopedagogy is an appropriate lens from which to re-imagine possibilities for ECEfS in Aotearoa New Zealand (and elsewhere). We have presented vignettes from our vast experiences as ECE educators and researchers that critically explore the holistic nature of ECEfS. In doing so we argue that ECEfS can support multi-species wellbeing; champion ecojustice; involve communities and families; integrate indigenous worldviews; connect children meaningfully with nature; and critically challenge dominant Euro-Western views about human/non-human relations. Further, we have detailed how ECE educators might interweave ECEfS with New Zealand early childhood education curriculum to support children in learning holistically with all aspects of their being.

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