
Pedagogy beyond the gate

The Ngahere Project

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The significance of experiences in nature for children's learning and development has been expounded by philosophers and educationalists for centuries. In many contemporary early childhood education (ECE) settings, such experiences are highly valued. Nowadays, Froebel's notion of kindergartens as "children's gardens" is likely to be complemented by ideas from Steiner, Montessori, Malaguzzi and, more recently, by Scandinavian notions of forest kindergartens (Knight, 2009). In Aotearoa New Zealand the natural environment of the bush or "ngahere", as it is known in te reo Māori, is also seen as a significant learning environment. This article explores some of the pedagogical issues a group of ECE teachers encountered with children during an action research project looking at teaching and learning possibilities in nature-based settings "beyond the gate".

Introduction

Taking children into the outdoors, as a primary site for learning and discovery, has been an important aspect of New Zealand early childhood education (ECE) for many years (Ministry of Education, 1996, 2009). In recent years a number of international projects such as the Forest Kindergarten movement in Scandinavia and United Kingdom (Borradaile, 2006; Chawla, 2006; Knight, 2009; Murray & O'Brien, 2005) have developed a similar emphasis on the natural environment. Coupled with heightened attention to sustainability (Pramling Samuelsson & Kaga, 2008; Davis, 2010) it is clear that there is a national and international resurgence of interest in the potential of outdoor experiences for learning.

Despite this renewed interest, relatively few empirical studies have focused explicitly on the associated pedagogies (White & Kelly et al., 2011). Compelling claims are made that educational experiences outdoors have positive benefits for children. Studies suggest that children's encounters with the outdoors will support them to develop respect for the environment and develop a sense of rhythm. The social benefits, and restorative potential

such engagement can provide in relation to health and wellbeing, are also widely cited (Littleddyke, Taylor, & Eames, 2009; Louv, 2009; Ward Thompson, Aspinall, & Montarzano, 2008; Wells & Lekies, 2006). Yet the evidence base to support these claims is slim in early years research. Of particular note, there is little research that focuses on the theoretical, pedagogical or broader educational issues of ECE for sustainability which Davis (2009) describes as the research "hole" (p. 236). From this perspective it appears that ECE practice is moving ahead of the research base. A notable exception in New Zealand is the work of Ritchie, Duhn, Rau and Craw (2010) investigating "caring for ourselves, each other and the environment". These provocations led a group of us to research outdoor pedagogical practice in New Zealand ECE communities that are already committed to sustainability. We wanted to understand this relationship and what it meant for teaching and learning. In this article we offer some insights from our action research *The Ngahere Project* as a means of theorising nature-based learning and its relationship to sustainability through an examination of the pedagogies beyond the gate.

The Ngahere Project—background to the research

The Ngahere Project: Teaching and learning possibilities in nature settings involved six diverse ECE settings operated under the auspices of Tauranga Region Kindergartens in the Bay of Plenty and Campus Crèche in the Waikato. Three sessional or extended day kindergartens, two full-day education and care centres and a home-based education setting made up the sample group (approximately 240 children, their families, teachers and the communities).¹ Teachers in these settings volunteered on the basis that they were already engaged in regular nature-based outings in their communities and shared a strong commitment to sustainability practices within their ECE contexts. With the exception of one rural kindergarten, they were all located in urban communities. Ngahere, the Māori word for bush, was specifically chosen for this project to differentiate what happens in these New Zealand settings from the Forest Kindergartens/Schools movement in Europe and the United Kingdom (Knight, 2009). As one teacher noted, “we are mindful of fads in early childhood that come from the northern hemisphere that aren’t relevant to us” [Cathie, Reconnaissance focus group]. In this action research project we set out to examine the pedagogical and practical implications of their practice for New Zealand-specific curriculum.

Cardno’s (2010) action research model (Figure 1) was employed to interrogate the pedagogies of these teachers during their outdoor experiences with children over a

¹ While the setting names are used, children chose pseudonyms and teachers and management representatives are identified by first names only.

14-month period in 2010–11. An initial 2-day reconnaissance meeting invited participants to share their current practice and engage in a focus group discussion around nature-based education and its relationship to sustainability (White, Kelly et al., 2011). Following the meeting, overarching research questions were finalised and teachers from each site worked with one of the researchers to develop setting-specific research questions under the umbrella of the overarching focus.

The intervention phase involved the researchers and teachers in a 2-month period of planning and implementing field work. Part of this process involved reading scholarly articles about the area of practice and relevant methods that would support data generation. These included methods familiar to the teachers, such as Learning Stories (Carr, 2001), interviews with adults and children, audio-recorded meetings, video-recorded group times and reflective diaries (O’Connor & Diggins, 2002); and unfamiliar methods such as photo generation and stimulated interviews with children (Einarsdóttir, 2007), and video diary, a form of digital storytelling (Barrett, 2005).

A “mosaic” of individual site research questions and data generation methods were selected to foreground “voice” (Clark & Moss, 2001; Peters & Kelly, 2011; White, as cited in Johansson & White, 2011), in some cases sourced directly from children and in others mediated through the teachers’ hearing and seeing. The “mosaic approach”, typically used to examine aspects of pedagogy, emphasises a view of the child as the expert on their own life (Clark, 2004, 2005) while the “seeing approach” foregrounds the complex role others play in interpreting children’s voice

(White, 2011). Combining these methods across different data sources and research sites enabled us to have a fuller picture of teaching and learning experiences in nature settings.

The action phase ended with an evaluation meeting where researchers, teachers and management representatives reported on their specific research questions and we reflected on the process and the outcome of the overall project. The overarching research questions were addressed during an evaluation focus group which was video-recorded and analysed alongside data generated from the reconnaissance focus group to show shifts in participants’ thinking from the beginning to the end of the project based on the action research. In this article we report on some findings from four research sites that specifically related to one of research questions: *What are some of the pedagogical issues and provocations teachers face in nature-based learning in ECE settings?*

Pedagogical issues and provocations

Teachers faced significant challenges and provocations during their experiences beyond the gate. Many were associated with their personal (individual) and professional (team) philosophy of teaching and learning, their “image” of the child and their developing capacity to see the learning potential in everyday experiences from multiple perspectives. Approaching the experience with a commitment to listening and seeing enabled the teachers to learn more about themselves and others, and to revisit their priorities for teaching and learning as the examples discussed here show. Consequently, some teachers recognised and reported shifts in their practice as they became more aware of the impact of their practice on others, and the environment. The same was true in relation to some teachers’ views of risk versus opportunity. Many teachers came to recognise nature experiences as dialogic learning events comprised of trust and risk, rather than transmitted knowledge limited by safety concerns. They recognised the reciprocal nature of learning and their role as partners in the process. Both shifts are explored in the sections that follow.

Pedagogy of listening and seeing

Clark and Moss (2001) argue that listening to children focuses on the role of the adult in relation to the child involving an active process

FIGURE 1. ACTION RESEARCH CYCLE



Cardno, C. (2010).

of exchange of meanings. Throughout the research process, teachers became more attuned to young children's perspectives and viewpoints, and to the ways in which they interpret or filter and shape children's views in their moment-to-moment interactions with them (Peters & Kelly, 2011). Specific research questions, altered understandings based on reading and discussing relevant articles and an express commitment to hearing/seeing children's voices assisted them. This was made possible through various means including observation, documentation, reflection and examination of children and their complex theories. A revised appreciation of the complex relationships that took place between children and people, places and things in the natural world resulted.

An example of a significant pedagogical shift was evident in the investigations of the home-based ECE service in response to their question *What do children "see" in nature-based education beyond the gate?* Four children photographed what they saw on weekly learning journeys and then they were interviewed by the educator about the photographs they had taken. Cameras acted as tools for visually listening to the child and hearing their perspective. They were seen as an inclusive research method especially if young children's verbal and oral skills did not enable them to express their knowledge to adults. The "silent voice of the camera" added another dimension to hearing and seeing the world from the child's perspective (Clark, 2005, 2007). Following interpretation and meaning making with the child in subsequent interviews, photographs often revealed the child's understandings (that differed markedly from the adults') of their experience (Clark, 2007; White, 2009) and on occasions revealed the tacit knowledge they possessed, previously unknown to the adults around them (Richards, 2009).

Such knowledge and insight was revealed in the unique perspectives children brought to their experiences. For example, two children photographed the same dead and decomposing rat on the pathway during two outings, yet each child talked about the significance of their photographs in completely different ways. When questioned about her photograph, a 3-year-old girl suggested that the "little mouse" (rat) should be at Christchurch "cause, at Christchurch ... everyone is dead at Christchurch". Seemingly the child was making connections with the tragic Christchurch earthquake that killed many people and was

widely reported in the media around this time. Meanwhile, a near-5-year-old boy explained in a matter-of-fact tone "the rat was run over by a bike" [Home-based interview transcripts]. These children and their peers were "actively engaged in a search for meanings" (Clark, 2007, p. 76) and constantly surprised and challenged the adults who worked with them:

The dead rat and other phenomena were surprising aspects of children's seeing which we came to see as a macabre fascination with the underworld. Despite consistent efforts on the part of the educator to return to the more 'desirable' elements of nature, the children persisted in photographing different types of poo and lots and lots of mud during their outdoor learning journeys. [Home-based analysis notes]

Dialogues provoked by the dead rat, and interpretations that invoked metaphors to describe what the children saw (such as red clay described as "hot chilli sauce"; the horizon as a "meeting of sea and sky"; and a rock as "like a hippopotamus") offered the educator increased opportunities for theorising *with* children. Pedagogy of this kind reflects the sociocultural nature of curriculum that is personally and culturally relevant (Elkonin, 2005). The meaning and relevance of what children saw was highlighted through their joint discussions and often enhanced through conversations with their families. These adults recognised that children can offer them remarkable insights into their thinking through visual and aural cues if their eyes and ears are attuned. And yet, adults recognised that these children's thinking often exceeded "adult ways of knowing" (White, 2009).

FIGURE 2. "THAT'S LIKE A HIPPOPOTAMUS"



These insights offered significant provocations for the educator's practice. They prompted her to change the way that she assessed children's learning. Before the research even concluded she began to involve children in the co-authorship of their Learning Stories, using images *they* had photographed and/or selected as important learning provocations rather than those *she* noticed and recognised as valued learning. In their reflections on the research, the co-ordinators highlighted:

The importance of creating different strategies for listening to the child and the multiple layers of listening; the intense and unique difference in perspective even when all children were looking at the same object, or were present in the same space; the importance of knowing the child and having a relationship with the child and their families; and the unexpected catalyst for change in the educator's practice. [Home-based analysis notes]

As a result of their investigations, this team also concluded that "important aspects of children's seeing reside in the lower world—on or under the ground—and are frequently overlooked in the literature about nature education" [Home-based analysis notes].

In response to their question *How do children express their working theories after regular engagement with nature outside the gate?* teachers at Papamoa Kindergarten gave heightened attention to children's theories expressed during and after regular engagement with nature. Their data gathering involved Learning Stories and video-recording children in group times following visits to a rural property known as Brann's farm. Provoked by Peters and Davis (2011) and confronted by video of their own practice they realised that their attempts to promote learning sometimes risked "hijacking" the children's working theories. Their analysis highlighted practices that privileged oral literacy over other literacies that children brought to their discoveries. During a group interview following an outing to Brann's farm the children described a fantail they had seen. Viewing the video footage, the teachers realised that they had focused on children's oral descriptions and omitted to see a child providing detailed depictions of the fantail with her hands.

FIGURE 3: THE FANTAIL



Similarly, the teachers almost overlooked a child's working theories about spiders as he had not contributed in the video-recorded group discussion about spiders; his theorising was evident in other ways. In hindsight teachers realised that this boy was likely to have been excluded because his verbal and oral skills marginalised him amongst his more verbally articulate peers. Teachers reflected:

At Brann's farm he was present wherever the webs were and similarly at kindergarten, although not necessarily talking but always listening. On every occasion he was right beside the teacher and children who were looking at or discussing webs.

However, his preferred language was not verbal. Teachers recognised his working theories and realised his expression was multimodal using a different medium when they saw how he understood the complexities of spiders' webs in his artwork construction:

He was able to express his working theory and learning about how spiders spin webs through the silent weaving he spent two days doing in the kindergarten garden. One of the teachers reported that he told her that he was just putting in the windows for the spiders to look through. [Teachers' analysis notes—Papamoa]

Realising that their pedagogy was giving primacy to children who expressed their working theories orally unsettled the teachers and caused them to hypothesise:

Do some children have 'preferred languages'? Can children who cannot verbally articulate a theory do so in other forms? Are some children more able to express a working theory verbally—once they have 'got it out of their head' in

another form e.g. graphic representation. For some children, not all questions are articulated; sometimes children show by their actions that they had 'questions in mind'. [Teachers' analysis notes—Papamoa]

FIGURE 4: SPIDER'S WEB WITH "WINDOWS FOR THE SPIDERS TO LOOK OUT"



A pedagogy of risk versus opportunity

One aspect of outdoor education that consistently appears in recent ECE literature is the issue of safety and its interrelationship with risk and challenge (Cooke, 2010; Elliott, 2010; Huggins & Wickett, 2011; Stephenson, 2003; Waite, 2011; Waite, Davis, & Brown, 2006). Throughout the research it became obvious that these constructs meant different things to different participants, or were valued differently by teachers, even within the same setting. Teachers were challenged to see children as competent and capable in nature settings while not losing sight of their vulnerability.

The tension between the competent and the vulnerable toddler was evident at Campus Crèche Teenies. It was the provocation for their question *What professional judgements do teachers make during outings with children, and why?* These teachers were eager to investigate their practice and used video diaries, a form of digital storytelling as their data collection method:

I'm hoping that we can really walk the talk about children's competency and to trust. When we've got them locked up a lot of the time, actually we don't really walk the talk. I think that somehow when we get out it's easier to see their competency and to actually live in that

trust of them. [Lex, Reconnaissance focus group]

Some teachers had a strong commitment to nature-based learning as evidenced in their weekly outings with toddlers to the expansive university campus across the road. Other adults, teachers and parents had concerns regarding the regulations and the capacity of toddlers to be safe in unknown landscapes such as duck ponds or slippery stairs not designed for 2-year-olds. Stephenson (2003) articulates this concern as a potentially limiting discourse "on the 'darker' side of risk—seeing the uncertainty, the possibility of failure, of injury" (p. 42). Teachers felt this keenly and wanted to explore the extent to which this "darker" side dictated what they did outdoors. They saw this tension affecting their pedagogy and the research enabled them to begin to explore the decisions and judgements they were making during these outings, and what was behind these actions.

Several key aspects of outdoors pedagogical practice emerged for ECE teachers that are of particular relevance to the under-3 age group. Teachers cannot dismiss the dual nature of the safe and agentic or competent toddler. In recognising this dualism they bridge a complex pedagogical space called "an opportunity space", a term borrowed from Dysthe (2011). Such spaces are those that are pedagogically attuned to the learner, rather than any predetermined learning outcome. They therefore represent an openness to the possibilities that exist in every teaching moment. Dysthe argues that teachers therefore need to be creative when advocating for learning within the context of the regulatory environment. For Teenies teachers, this advocacy meant foregrounding the multiple opportunities water represented for learning. Children's capacity to predict and explore water increased as a result of repeat visits. Teachers also recognised the significance of their role in knowing the potential of the particular environment, how toddlers might encounter it and the extent to which they (teachers) might intervene or step back. Knowing the potential and dangers of the environment² and how individual, and groups of, toddlers might encounter them became central to their pedagogy.

The potential of the environment in terms of learning and risk and challenge featured in

² In New Zealand, teachers are required to complete a risk assessment plan prior to taking children into the outdoors (Ministry of Education, 2009).

all of the research sites. The image of the child held by the teacher had a considerable impact on how they viewed children's competence/vulnerability in nature settings. Recognition of children's agency is evident in the views of this kindergarten teacher:

We held a kōrero with the children about keeping safe, and how we could be safe in the space. I've noticed, and the team will back me up on this, the children are amazing at managing their own risks, and assessing risk. I don't think we've ever had to go 'Oooh, step away from the edge!' or whatever. They know! And actually the children that were feeling a little bit unsure ... you notice from their body language that they're feeling that way, you'll just feel them just slip in behind you and put their hand in your hand or they'll move themselves to the inside of the path because that's where they feel more comfortable. [Gill, Evaluation focus group]

Other teachers nodded their agreement and support for this recognition of the agentic child. Yet an inherent contradiction identified was the importance of risk taking for children's development, against the regulatory environment many teachers saw being imposed by external agencies/management. Some argued that these regulations were prohibitive for taking children to challenging nearby environments, such as the farm next door or the nearby estuary, because of prohibitive one-to-one adult child ratios:

It comes across very strongly to me from management, that risk-taking is definitely to be encouraged and indeed last night a comment was made, 'Where's the risk-taking in that?' But to me, for teachers it's the other message that's being put on, and I just feel sometimes that the risk-taking element is actually being squashed. [Fiona, Evaluation focus group]

The Teenies research had much in common with that of Paengaroa Kindergarten. Their research question *How does the nature environment influence teacher pedagogy?* was addressed through data collected in teachers' reflective diaries and audio-recorded staff meetings. Safety and risk were issues this team also grappled within the "opportunity space" offered by the nature environment. As they reflected individually on their pedagogy beyond the gate, one teacher described having "an inner turmoil

between risk management and children's safety versus teaching intent, for example providing the risk in a controlled setting", while another confessed, "I still get nervous when children are venturing around narrow and high pathways as well as when dealing with fire ... we need to do/have more regular experiences around fire etc. so that children have the skills and become the competent and capable beings they are" [Mary Anne and Debbie, Paengaroa reflective diaries].

These issues and tensions required ongoing dialogue and common understanding among teachers about appropriate pedagogy including child/group management strategies. In this and other settings teachers acknowledged their fears, embraced child leadership and considered issues of teacher power and control in relation to children's agency, and autonomy. Such notions were significant features of their pedagogy beyond the gate.

As a result of their reflections, and the debate generated from the research process, the teachers' pedagogy altered as the weeks passed by. At Teenies specifically, and in other settings, a greater awareness was shared regarding the importance of "the process rather than the destination" [Amy, Teenies video diary], higher degrees of preparedness and strategies around the trips (including divergent use of groups and spaces), as well as trust within the teams who went on the trips, ensuring consistency and preparedness. They recognised that the capacity for teachers to support toddlers and young children effectively is not so much in the challenges that the environment or even the children offer, but in the intentionality of the teachers to promote learning.

We concluded that a deep knowledge of the particular environment including the weather, opportunities alongside potential risks and the nature and culture of the place supports intentional teaching. A second key consideration is developmental knowledge of individual children. In the Teenies research, aspects such as judgement, size and movement were connected to teachers' decisions about whose hand to hold when they crossed the road, for example, and a realisation that toddlers fall often and that this is sometimes OK. A third factor was regulatory knowledge which enabled teachers to interpret the rules in a manner that did not limit the opportunities yet responded to them creatively; and fourthly, team relationships. By this we mean the relationships between staff, their shared acceptance of what constitutes manageable risk

and what does not (e.g., falling into the lake) and their ability to trust one another to watch their backs, as it were.

A shared outcome for all of the teams in the outdoors was developing children's agency: their ability to identify their own interests, mediate learning for themselves and their peers, and learning to take some authority in their lives. Carr et al. (2009) describe the latter as "resilience", one of three key learning dispositions (the others being reciprocity and imagination) for young children to develop. One teacher reflected on her support for children's agency, recounting an episode from a recent trip beyond the Paengaroa Kindergarten gate:

'If you can't see me, you need to turn round and come back.' So he headed off. Then the other two said 'Oh, can we go too?' and I said 'Absolutely.' So they ventured off over the fence by themselves and up the hill, then they came back, and then they went again, then they came back ... [Debbie, Paengaroa reflective diary]

Trusting relationships with people and places often featured in the Paengaroa Kindergarten teachers' reflections. They reiterated the importance of communication, as well as trusting the environment and each other, including parent helpers. Knowing the environment and fellow teachers' skill sets contributed to the level of confidence among the team on various outings:

You don't always reach a consensus but we've learnt a lot about working with each other and how to manage working with each other. Because we don't always go out with the same people either, so if you know that you're going out there with a teacher who, you know, has identified, say health and safety or hazards as something that is very important in her belief around nature education, then we support that. We're aware of that and we support that with other aspects of teachers' values and beliefs that come through that we need to know, we have to know, and then we trust each other to support each other. [Julie D, Evaluation focus group]

Over time, some teachers grew more confident in their pedagogical stance. Perhaps they were seeing their role as more than a facilitator or provocateur of learning in the moment, but instead as "learners of the learners" (Rule, 2011, p. 938). In order to respond appropriately to

children as agents of their own learning some teachers were prepared to overstep the limits of protection, restriction and prevention to see risk as an opportunity. Some actually began to see the necessary restraints as *opportunities* to encourage problem solving and self-reliance.

Teachers supported Cooke's (2010) premise that "healthy child development relies on being able to take risks, face challenge and overcome diversity" (p. 250). They recognised the enormous benefits of challenging nature-based education including more effective self-management; autonomy; building dispositions for learning (Carr et al., 2009); and the ability to predict. Teachers described this knowledge as empowering and affirming of their practice. At the same time it challenged them to continually seek out the learner in unpredictable outdoor opportunity spaces.

Both management groups in this research continue to grapple with organisational challenges around the regulations, equipping teachers to be facilitators of nature-based education in a variety of environments, and shared understandings and expectations about what that might look like. Throughout the sector "one size cannot fit all" because of the diversity of: philosophies and practices; local environments; children and communities; and the varying experience of teachers and teaching teams. One management representative explains:

We've got 20 kindergartens with 100 teachers and many of them are on different phases of this journey. We [need to] ensure that teachers are taking the journey at their own pace and not wanting to leap to what they see as these other spaces really quickly without having the little steps on the way. [Marion, Evaluation focus group]

Conclusion

This study highlights the complex issues and tensions teachers face in pedagogies beyond the ECE gate. There are also implications for pedagogy within, and between, the ECE setting and its wider landscapes. These findings suggest that there are increased opportunities for learning within all of these environments when adults are prepared to embrace uncertainty and risk as necessary components of the teaching experience. The way teachers define and enact pedagogy, specifically pedagogy for nature education, is ongoing and specific. It is

influenced by their individual and collective values, beliefs, expectations, experiences, teaching strategies, philosophies around teaching and learning and sustainability (White & Kelly et al., 2011), and ideas about what and how children learn or should learn, held by ECE learning communities within the regulatory context of the time.

These teachers have identified their ongoing personal and professional ethic to fill the "pedagogical hole" that exists in relation to ECE for sustainability. In conjunction with their management groups they intend to disseminate the findings, spread the word, keep the momentum going and expand their nature-based education programmes in order to enhance children's learning in ECE settings committed to sustainability. *The Ngahere Project: Teaching and learning possibilities in nature settings* has merely whetted their appetites in this regard.

This research and its continued dissemination can assist the New Zealand ECE sector to uncover the specific learning potential in contexts beyond, and within, the gate. We claim that Aotearoa New Zealand offers unique opportunities for strategic engagement with the natural environment and associated sustainability issues that we believe are only beginning to be realised in the literature (for example, Ritchie et al., 2010). Our contribution to the wider international ECE community, as world curriculum leaders, can enrich debates about the pedagogical implications for education in the outdoors. This will be in keeping with New Zealand's emphasis on diversity, a cornerstone of the early childhood curriculum *Tē Whāriki* (Ministry of Education, 1996) and a central tenet of nature-based education beyond the gate raised by the teachers in this study. This research suggests that engagement with the outdoors and sustainability are partners in the pedagogical process. Neither is exclusive to one another. Teachers who are committed to sustainability have an important role to play in promoting nature as a route to sustainable practice as this teacher suggests:

Education in natural settings links beautifully with enviro and sustainability because it can be a burden for small children to be taught that they have to care for their environment because they see modelled around them people who are not caring for it, even in their own

families, so how do we allow them not to feel guilt and how do we take away that burden? I think it is taking them into natural settings, allowing them to see things that they are in awe of and that they love. They will grow to understand why it is important that we protect these things and then in future days they will be the engineers of all that too. [Cathie, Reconnaissance focus group]

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