Title

Learning with nature and learning from others: nature as setting and resource for early childhood education

Abstract

Nature-based learning is an increasingly popular type of early childhood education. Despite this, children's experiences in particular their form and function within different settings and how they are viewed by practitioners is relatively unknown. Accordingly, the use of nature as a setting and a resource for learning was researched. A description and an emerging understanding of nature-based learning was obtained through the use of a group discussion and case studies. Practitioners' views demonstrated their eagerness to share experience that ranged from positive examples to challenges encountered within practice. Case studies recorded in a Scottish nature kindergarten and two Nordic counterparts, take a situated view of nature-based learning. Findings indicate that nature is utilised as setting, as resource and as educator within children's learning and this holds true within different countries. Local, social and cultural contexts exert influence on pedagogical practice and implications for practice based upon these are given.

This paper reports the findings of research focused on nature-based learning. A substantial amount of literature has discussed the meaning of terms such as outdoor learning so that a clearer description can be shared (such as Beames, Higgins, & Nicol, 2011; Rickinson et al., 2004). There is, however, a need for similar discussion in relation to a description of nature-based learning. Given that such terms are broad to encompass cultural influences and variation in practice, this need is addressed by seeking an understanding of how nature-based learning comes about in different countries. This paper foregrounds the role of culture in nature-based learning, and particular consideration is given to the relationship between adult and child participants. This perspective recognises the adult-child relationship in unison with cultural influences and in this regard early childhood institutions are recognised as a 'significant loci of cultural transmission' (Gulløv, 2003, p. 26).

Nature-based learning

The consideration that nature offers qualities that feed human development is not new (Cobb, 1977). Yet, there is a growing recognition of natures inherent value and its special contribution within childhood (Gullestad, 1997; Kahn & Kellert, 2002; Louv, 2005; Warden, 2010). In Nordic nations and other mainland European countries, nature kindergartens[1] are an established form of early childhood provision and are a more recent introduction in Scotland in the last decade (Änggård, 2009; Lysklett , Emilsen, & Hagen, 2003; Nilsen 2008). Their increasing popularity feeds into a need "to gain a greater awareness and a deeper understanding" of their features (Hantrais, 1996, p. 5). These settings are distinctive for their emphasis on outdoor experience where nature provides the toys (Ouvry, 2003). Such provision is likely to involve a shared, consultative approach to learning between adult and child (Warden, 2010). Although "nature kindergartens" has been accepted as a descriptive label, attention to such practice requires scrutiny to explore the connection between nature-based learning and a consultative approach. To date, comparison that takes into account culture and context has been overlooked and this paper marks an attempt to address this. We consider that whilst practitioners working in such settings "inhabit a common ground of experience […each…] bring to bear a radically different conceptual frame to the task of its interpretation" (Ingold, 2000, p. 167). Practitioners' insight forms an integral part of the "deeper understanding" sought within this paper that includes a consideration of the ways in which nature features within children's learning. To this end, nature is viewed as a setting in terms of its role, and as a pedagogical environment. Equally, nature's resources as afforded by climate, landscape and sensory features are considered.

Nature, culture, and learning

A key feature of early childhood is the experiences available for learning that are governed by conventions and policy situated in cultural contexts. Studies of early childhood providers including England, Scotland, Denmark, and Finland have revealed the breadth of provision within and across countries (Kutnick et al., 2007; Osborn, 2003; Palaiologou, 2012). For example, curriculum guidelines in Scotland offer a framework in contrast to the more prescriptive approach in England (Jenkins, 2000; Macnab, 2003). In Denmark, culture and nature are viewed in relatively 'close interchange' (Schnack, 2008, p. 22) and a wider range of nature-based learning choices are available[2].

Nature is a symbol of cultural and historical identity across Nordic nations. Whilst different conceptions of nature have been noted (Berghoefer, Rozzi, & Jax, 2010; Henderson & Viklander, 2007; Mårtensson, 2004; Schnack, 2008) such debate does not undermine its potential given that 'nature [is] a contested term' and is accepted as different things to different people in different contexts (Ginn & Demeritt, 2010, p. 308). Nature has different interpretations when considering social and cultural practices because 'while we share a common vocabulary, we do not always share meanings' (Spodek, 2006, p. 39).

The value of comparison

This paper argues that nature-based experiences are constructed in relation to customary ways of behaving, including cultural influences that shape early childhood settings. Such customary ways are often unmasked when comparisons are made with practice from other cultures, thus within the current paper collection of data relating to more than one country is appropriate (Fetterman, 1989). Such comparison is the basis of much educational research and can help researchers to objectify their own behaviours and values (Alexander, Broadfoot, & Phillips, 1999; Crossley, Broadfoot, & Schweisfurth, 2006). In fact, there is evidence of countries (including the UK) looking to Nordic nations to develop their practice. Forest School[3], for example, is an interpretation of practice that originates from Denmark. Arnott and Ozga's (2010, p. 14) evaluation of education policy places Scotland in alignment with new comparators in education namely Iceland, Norway, Denmark, and Finland. Another form of evidence comes from the views of stakeholders within education. Following a visit to Norway in 2007, Bronwen Cohen[4] said "we have resources and nature in Scotland that are just as good, but we're not making as much use of them. The effect is that children in Scotland do seem more constrained; that was perhaps the overwhelming difference" (Hepburn,

2007, p. 14). This paper, by emphasising the role of culture seeks to recognise such influences within early childhood provision through the collection and analysis of empirical evidence.

The role of culture can be illustrated through the aspect of risk taking and risky behaviours. Previous research has considered the situational and cultural influences indirectly (Gill, 2007; Little, 2006; Sandseter, 2009b). Of particular relevance is the adults' role when children engaged in risk taking and findings can be subsumed within two categories. The first involves reducing the salience of risk in experiences, for example swapping tools for a "safer" alternative. The second form refers to the adult or practitioner intervening to make experiences "safer". Behaviour pertaining to either category suggests a form of erosion where opportunities are diluted and such interference may have a bearing on subsequent learning (Stan, 2010). Such understanding of inadvertent action that influences children's experience is of particular relevance to settings that endorse outdoor learning where there is consensus that risk taking is a central feature of practice (Gill, 2007; Sandseter, 2009b; Tovey, 2007). Accordingly, this paper considers adult-child relationships when nature is involved and considers the cultural and contextual situation of learning to investigate such erosion. Nature-based settings are optimal to further this line of investigation given their consultative environment as it involves the negotiation of expectations and responsibility between adults and children known to support risk in children's experience.

Summary of studies

The research activities that comprise this paper include a group discussion and case studies that centralise practitioners' knowledge and experience of early childhood settings. To allow the cultural context underpinning practice to be explored an international perspective was taken that compared similar provision found in different countries.

This research takes a "situated perspective" considering learning as inseparable from its social, cultural, historical, and political contexts and this perspective is acknowledged as lacking from research investigating outdoor learning (Humberstone, 2009). Brown foregrounds the role of the physical environment saying "to be 'situated' is to be located in a place ascribed with social and cultural-historical meanings which combined with the physical features afford and constrain activity" (2009, p. 8). This perspective also allows for a discussion of how nature is used in learning over time, given that the same locations are visited on multiple occasions during different seasons. Take for example a steep, icy slope. Taking an affordances and risk taking perspective, Fjørtoft states that

”intuitively children [...] perceive the functions of the landscape and use them” (2004, p. 111). Children are more likely to engage in activities, risky or otherwise, when they are endorsed by adults of the same culture (Maynard & Waters, 2007; Roopnarine & Johnson 2001). As alluded to earlier adults may limit risk based on their ‘perception of what is dangerous’ (Sandseter, 2009b).

Case studies allow the collection of in-depth information in a real world context, whilst being open to subtleties within each case (Tobin, Wu, & Davidson, 1991; Yin, 2011). The methodology is particularly suited to nature kindergartens that are responsive to the fluxes of seasons and climate (Fjørtoft, 2004). A seasonal lens was included as each case was visited on multiple occasions during a 16-month period. Many experiences thought to characterise nature kindergartens and nature based learning involve woodland and forest areas, which possess multi-sensory qualities (Henwood & Pidgeon, 2001; Lee, Park, Tsunetsugu, Kagawa, & Miyazaki, 2009; Ward Thompson et al., 2004). In relation to early childhood, such qualities may be significant given they provide opportunities that evoke ‘a sense of excitement, adventure and curiosity at what might be found’ (Henwood & Pidgeon, 1998). Thus, the case study methodology sought to record how sensory engagement added to children’s experience within the natural environment, as such data is often collected at the expense of taste, touch and smell (Ingold, 2000; Valtonen, Markuksela, & Moisander, 2010). Observations were recorded in-situ and interviews undertaken sought out the experiences offered to children and explored the adult’s role and sensibilities in such experience.

The conception that nature should feature within children’s experience through play and learning was at the core of a conversation held with practitioners who had experience and knowledge of working in nature-based settings. Practitioner views were captured within a group discussion that acknowledged outside spaces as offering opportunities for learning. A group discussion is particularly suited to generating dialogue aimed at capturing practitioner’s views and insight as such discussion facilitates comparison of one’s own and others’ learning methods. Within such methodology, questioning and clarification of statements are part of the group dialogue, enabling ambiguity to be avoided and enhancing the likelihood of accurate comparison that acknowledges the role of culture. The group discussion stemmed from the belief that nature should feature within children’s experience through play and learning. Practitioners who had knowledge and experience of nature-based settings shared their views in relation to outside spaces as offering opportunities for learning.

This paper emphasises the situated nature of learning, looking at the immediate surroundings of learning (outdoor/indoor), who is involved in learning (adult and child, child alone or children learning with each other) and the culture that underpins such opportunities. A group discussion and case studies were employed to explore how these aspects interrelate and feature within practice.

Method

A group discussion and case studies were recorded to explore practice occurring in nature-based settings. The following sections provide the research design and outline the analysis undertaken for the data that was collected.

Participants and settings

The group discussion was held during an educational conference, the timing and duration of which was given careful consideration so that participation would not hinder delegate's conference experience. Parameters for the initial selection by email included confirmed attendance, ability to converse in English, "practitioner" status and representation of international settings. Seven participants agreed to participate, and were currently working in the United Kingdom, Denmark or Australia. Their responsibilities (within their current role) varied from management of early years settings, charity work, teaching in higher education (both initial teacher education and continued professional development), and advising outdoor learning organisations. Such information helps gauge the breadth of practitioners' knowledge who participated.

Due to the multiple interpretations of "focus group", participants were invited to partake in a "group discussion". A 5-minute lead in time allowed paperwork completion, introductions and queries to be addressed. A circular table and chair arrangement enabled participants to see who was speaking. A facilitator chaired the session and when the conversation ebbed, raised a question to promote the conversation. Consent was verbally given and a further check obtained with a consent form presented in plain English at the start of the exercise. Participants were cordially reminded that they could withdraw their consent or refrain from answering at any time. An audio recording facilitated an accurate transcription of the group discussion, supported with repeated inspections of the data and listening of the recording.

Over 16 months, 53 days in total were spent recording data in three nature kindergartens in Scotland, Denmark, and Finland. Scoping visits were used to rationalise the case study selection and

design and to refine methods. The selection of three cases suited to research from a possible 15 settings across five countries was based on specific, descriptive and practical characteristics including the composition and resources of the nature kindergartens and English-speaking practitioners. Adopting two cases from different Nordic nations is intended to challenge the conjecture of a Nordic norm (Riddoch, 2011). During four of a total of nine scoping visits, consent was granted to trial data collection methods, with particular attention to observational techniques. To record climatic and sensory elements, each setting was visited each season. Pink's (2009) sensory ethnography informed the design of observation methodologies that allowed 'sensory diversity and variability' to be recorded (Kellert, 2002, p. 139). Observation data can account for the senses and the subsequent interpretation of the meaning of sensory episodes to participants (Atkinson, Delamont, & Housley, 2007). Multiple sensory stimuli were used to support data collection. In this regard, sound (Feld, 1996), smell (Blackson, 2008) and other 'sensory-driven modes of inquiry' such as episodes involving taste, touch and sight were captured (Auer, 2008, p. 7). Contextualised and contingent data were recorded using systematic, time-sampled observations. An observation schedule was used to record core dimensions including the placements, tasks, and roles of participants (in relation to their interaction with nature and/or interaction with other persons present); adult: child ratios[5]; weather conditions and sensory events[6]. On average, children were between 5-7 years of age. The number of children in attendance at the Scottish (n=14) setting varied between 9 and 14. At the Finnish (n=15) and Danish (n=15) settings there was full attendance each visit.

At the start of each quarterly visit to each setting, the researcher was involved in daily activities, such as fishing, berry picking, den building, and cooking. These initial one or two days helped establish relationships with participants prior to the recorded observations, which followed in subsequent days. A semi-participant observer role was adopted and this non-authoritative stance was sensitive to being a guest meaning that the researcher watched, listened and awaited rather than initiated interaction (Evaldsson, 2003; Stake, 2000). Each observation day resulted in a completed observation schedule (a total of 53 were recorded, one per observation day). The schedule was completed through the use of three minute scans completed at half-hour intervals. The interval duration was based on recommendations regarding observation and trialled during a scoping study (Simpson & Tuson, 2003). The total number of scans that were recorded each day related to the length of a session, as determined by the seasonal context. For example, during winter the start of the Finnish kindergarten day was delayed by two hours to allow the outside temperature to rise above -25°c. The longest schedule duration was 6 hours (12 scans in total) in

Danish springtime, and the shortest duration was 2¼ hours (4 scans) in the Finnish winter. Photographs (panoramic 360° images) and audio-visual recordings were collected to coincide, as closely as possible, with the timing of the scans and later added to the appropriate schedules. Such visual records allowed repeated viewings of the data and are likely to support enhanced recall as they offer a comprehensive overview of events that were observed (Chawla, 1994; Løkken, 2011)

Practitioner interviews were conducted at the end of the kindergarten day and focused on the observed session, an approach likely to limit researcher bias (Brown & MacIntyre, 1993). Conversations with children occurred on an impromptu basis, and were located for example, around the fire, on rocky outcrops or in a den. Children volunteered contributions that they felt were pertinent. Interviews and conversations were recorded audio-visually, allowing subtle sensory details such as smoke from the fire blowing into the researchers and child's eyes to be incorporated. Participants discussed their nature-based experiences prompted by photographs and recordings to evoke descriptions of episodes and events (Sherman-Heyl, 2005). The audio-visual data were also used given that English may not have been the participant's first language, helping to avoid confusion or misunderstandings. All data were transcribed verbatim and, where necessary, translated into English.

Analysis

The data were analysed into four broad themes (e.g., adult and child relationships, comparisons amongst practitioners) and sub-themes (Practitioners' beliefs and parents' beliefs, Practitioners' engagement with parents, Seeking meaning beyond labels and Barriers to practice).

Analysis on data recorded during the group discussion focused on identifying content and emerging themes in line with methods appropriate for focus groups (Kagan, Burton, & Siddiquee, 2008; Wilkinson, 2004). Sole consideration of emergent themes sets to one side the consideration of talk as action, which would require looking at turns taken, what was said by whom and examining how interjections shaped the discussion. Rather, first and second coding cycles were utilised and codes then agglomerated into themes (Saldaña, 2009). Coding cycles involved repeated inspection and examination of the transcript, making notes regarding responses, focusing on what was said rather than the frequency of codes. Inconsistencies were resolved through discussion, which supported the creation and amalgamation of themes.

The case studies provided a wealth of data, for this article a focus was given to the complex human-nature relationships evident in each setting. Coding focused on making links between sensory cues, participant experience and the integration and interpretation of these respective contributions to learning (Auer, 2008). Emerging themes were identified through a process of *attribute coding* appropriate to a study of multiple sites with multiple data (Saldaña, 2009). E*laborative coding* was adopted, where analysis stems from constructs formed during an earlier piece of work, in this case the group discussion (Saldaña, 2009). *Process coding* is compatible with observation data from nature environments as it connects human action(for example, hiding, building, sliding, chopping) in relation to seasonal aspects (for example, snowing, raining) and sensory aspects (for example, shivering and tasting). In these dynamic settings, each change (action or process) were coded (Strauss & Corbin, 1998). Findings were collated into flow diagrams that afford description of human-nature relationships.

Whilst emerging themes could be meaningfully organized and interpreted, further corroboration was sought using member checks and verification between the authors regarding data analysis, both recognised as appropriate strategies when analysing qualitative data (Willig & Stainton-Rogers, 2007, p. 362). Regarding the group discussion verification took the form of discussion between the authors in relation to the coding strategies, theme generation, and overall analysis of the data.

Within the case studies, participant verification was utilised as an evaluative approach. Both adults and children were given the opportunity to comment on the representation of their experiences. This took two forms. The first occurred during data collection, usually towards the end of each seasonal visit. The second form relates to visits made by pedagogues to their counterpart cases, which took place both during and after the 16-month data collection period. A particular feature of these was debate about practice typical or atypical to different countries. For example, a Finnish pedagogue visited the Scottish case in the summer, two Danish pedagogues visited the following autumn and one Scottish pedagogue visited the Danish case in winter.

Findings

The contribution of nature to children's experience and learning was explored, which involved a group discussion and three case studies. These findings are part of a wider study and by necessity, only a fraction of this data is presented in line with the aim of this paper. In addressing this, excerpts

are presented that are illustrative of wider conversation (group discussion) and/or illustrate practice occurring within examples of nature kindergartens found in different countries (case studies). The development of these themes was informed by the research aims, literature, and the data (Ryan & Bernard, 2000). Taken together the findings consider how nature operates within children's experience, how learning with nature is contextualised in different countries and signals the value of learning from others' practice.

Theme 1. Local practice, global curiosity

During the group discussion, the situated and cultural context of practitioners' knowledge and experience was evident from the outset, where participants' inquisitiveness queried each others background, country of work, and how experience and knowledge was situated within these factors. Participants instigated such questioning, which is not surprising given that each participant possessed different accents that suggested their experience.

The "inquisitiveness" noted during the group discussion was also apparent within case study participants. Allied to this are accounts in the literature of "stark contrast to what [one] would expect at home" (Wagner, 2006, p. 289) and a researcher "totally bowled over by what I saw" (Williams-Siegfredsen, 2012, p. 1). The researcher involved in the case studies was introduced to the Finnish Kindergarten Union and subsequently 17 members toured settings in Scotland. The group's key aim was:

> the opportunity to see how it is done here

Similarly, one of the Danish pedagogues visiting Scotland noted:

> We [in Denmark] have not found the golden stones, we may not be right, but it is just the way we do it. Here it is done differently, but we see the big, nature picture outside is the same.

A Finn at the Scottish setting observed:

> "your snow is different to our snow, more wet. This is muddy snow!"

Such examples from the group discussion and case studies indicate that practitioners were eager to engage with others working in nature-based settings and a feature of such opportunities appeared to be that misunderstandings frequently arose about what nature-based learning is in practice. Practitioners' comments and comparisons indicate that such practice involves a cultural dimension.

It is these dimensions of contrast and resonance in the use of nature settings that indicates local practice as an area of interest to practitioners from other countries.

Theme 2 Adult and child relationships in early childhood education

The second theme considers the role of relationship between adult and a child or children and three subthemes are presented. Throughout the group discussion and case studies, there was widespread recognition as to the important role practitioners are privileged to hold in children's lives.

2.1 Practitioners' engagement with parents

Within this excerpt a group discussion participant comments on whether parents and practitioners at an early childhood setting share similar viewpoints. The point develops to suggest that involving parents is crucial so that regular opportunities can be integrated into practice. In particular, use of the word "shift" is revealing suggesting that parents' views need to align with that held by practitioners.

> You know it's just staff and parents, and if the parents think it's a good idea, or they understand why their kids are going out and coming home messy that then I think… or if you've got parents who are saying I want my children to go outdoors, then I think you've got half the battle done then and you've got the support to do it, and that's the shift I think that needs to happen as well. (Practitioner 1, UK, Group discussion)[7]

A different practitioner further illustrates the value of establishing a connection between practitioners and parents. In this excerpt, the practitioner explains that engaging with parents takes time and can start with a set purpose from which a relationship can emerge. Practitioners continued attempts to connect with parents reveals their appreciation of the role they play in children's lives.

> We had the poster up for a really long time and, you know, thanked families when they did donate and made it very public and that sort of stuff so that was our gradual way of getting them into the mind-set that we do want to spend more time in the outdoor environment**.** (Practitioner, Australia, Group discussion).

The practitioners' attempts to connect with parents can be understood in a different light by the next comment. This participant explains that practitioners sought guidance and he offered guidance that was sensitive to the pressures experienced by practitioners. It is clear that there is a general questioning by practitioners of their own skill and ability, which is set into context when

practitioners need to have confidence in order to deal with parents' concerns regarding the nature of childcare provision. Children enjoyed relationships with parents and practitioners. Practitioners did not always experience similar ease in their relationships with parents.

> There's very little confidence in their own ability to sort of… to sort of, to sort of contest with needs certain things with other people, I think and then when it comes down for me trying to tell them that we need to sort of stand up to parents when they say, oh, I don't want my kid doing this, you need to be the one telling them, but then how can I expect them to stand up to the parents when they're always being told [unclear] everyone else sort of coming in so I think that's a really, really big difference definitely. (Practitioner 2, UK, Group discussion)

The influence of parents upon nature-based settings is a given, as parents select such provision for their child. The group discussion noted uncertainties voiced by practitioners in relation to parents. In contrast, parental support within settings evaluated in the case studies is revealing, as parents made a commitment to the ethos of nature kindergarten. For example, in the Scottish setting, two parents sought part-time employment. In Finland, a father spoke about mining, another parent visited whilst hunting, and shared a recent kill with children. Such practice can be mapped onto similar forms occurring in other countries. For example, in Denmark, a chicken was slaughtered, and its carcass butchered to help children understand that animals are reared for consumption:

> "Life is not Disney, we need to understand earth to mouth"
> (Practitioner, Denmark).

The extension of the connection between early childcare provision and grandparents indicates an appreciation of the cultural role and the knowledge nature-based learning offers within children's lives. A numeracy exercise, for example, focused upon traditional Finnish words used for measurement by older generations that are no longer common parlance.

> We do this every year to save the words. The children take the words home and share with their families. (Practitioner, Finland).

This intergenerational connection was enhanced as grandparents frequently attended the Finnish case on particular occasions but also were involved in activities for example, an ice fishing trip.

> My grandfather shares the nature today. This is my special week and the cold gives us lots to do. (Child, Finland)[8]

These excerpts suggest within the adult-child relationship, the involvement of parents and other generations was a significant aspect. An emerging theme is that despite selecting a nature-based setting for the child, some parents appear to retain uncertainties and anxiety. Thus, a feature of nature-based learning involved addressing those concerns and sharing children's experiences. The point that continued attempts were made and parents concerns were dampened, signals that viewing children's learning as indoor and outdoor is limited, instead it should consider a wider frame of reference and include the home context given that parents (as an adult) also influence children's experience.

2.2 The practitioner's role in learning

Emphasis on the role of the adult in relation to children's learning is echoed in the next quote. When discussing supporting learning outside, initiating and maintaining a dialogue with children was signalled as an important feature of practice.

> …it does rely on a skill pedagogue. We're talking about the conversations that are first the adult working with the children in that setting would be recording and speaking to the children about what they were learning, and I suppose that sort of side. (Practitioner 4, UK, Group discussion)

A key element of practitioners' relationships with children in their care is supported by going outside. The following quote suggests that learning outside induces a degree of mutual responsibility between learners.

> … that's what's so lovely about taking them outdoors because you've got to trust the adult you're with, you've got to trust the other children you're with. (Practitioner 1, UK, Group discussion)

The following excerpt sums up a longer part of the discussion that debated how practitioners recognised what children were learning from their experiences outside. The view expressed by the practitioner in the following quote describes subtle forms of interaction.

> With children about five six years I wouldn't act like a teacher and talk about a lot about she… you can cut this iron tube in half and you both have half the amount… I wouldn't bring that in at all. I would only look upon the possibilities it gives the children because learning is kind of a spiral thing. (Practitioner 1, Denmark, Group discussion)

The following examples, taken from the case studies, also show the subtlety of learning that takes place, where adults adopt a background role. The transition between indoor and outdoor spaces is a key element of practice, yet in both Nordic cases, there was little or no instruction between adult and child at these times. In Finland, for example, establishing knowledge of "correct clothing" was ad hoc rather than didactic as evidenced in this exchange:

Child: I'm as warm as a feather

Adult: What do you mean?

Child: Feathers must be warm because it is all the birds wear in winter

Adult: [laughs] Birds and children are different. Nature has many ways of keeping birds and animals warm, like shelter in the forest, we all know the forest tries to keep us warmer.

The child may have been building upon prior knowledge. For example, in the changing area during February in Finland:

… these are my September gloves, these are no good, these are too thin. I know my hands will get cold.

These excerpts reflect that children were encouraged to take ownership of preparations for example, getting toileted and appropriately clothed-even in extreme weather conditions. This may suggest a shared responsibility where children are viewed as competent decision makers. Such decision making may have developed through mutual or prior experience or an understanding between a child and his/her social setting that is culturally and historically entwined. These exchanges suggest that nature offers children a means of relating their understanding that was picked up by the adult and used to develop children's thinking. Crucially, the adult employs nature to make and develop such links and by doing so suggests to the child that such connections are valuable, indicating that the human-nature relationship plays a vital role within experience and learning. Comparison of the nature kindergarten cases evidenced how learning was supported by nature related to how each setting utilised cultural, social and historical elements within its provision. Children's experiences were not formulaic or tantamount to replications of activities within different settings. Nature Kindergartens offer a diverse and complex learning environment such nature-based learning is being embraced by educators and is reflected in the experiences offered to children.

Theme 3 Seeking clarity about practice

The third theme captured concerns regarding misconstrued interpretation of outdoor learning and develops to look at features of practice.

3.1 Seeking meaning beyond labels

A significant proportion of the group discussion explored labels such as nature kindergarten. Practitioners describe their confusion about such terms when the practice occurring within such settings is still being understood. The following quote illustrates the variation in nature-based early childhood settings.

> … One of the groups is staying all the time in the day-care centre; another group has, as you said, one specific place they visit every day by bus, every day, no matter how the weather is, all year long. And another third group, and that's why I think it's interesting, is going also by bus, but to different locations every day. (Practitioner 1, Denmark, Group discussion)

The following quote points out the circular nature of labels and nature-based provision. Such provision came about in part from a demand and interest from parents, which appears to feed into the continuation of inaccurate or confusing labels ascribed to nature-based practice. It would appear (based on this practitioners comment) that such labels are not well regarded by practitioners.

> …and the parents want to have the children in a nature kindergarten because it sounds better than in art kindergarten or a sports kindergarten, we don't use these words, but it's the highest buzzword in the day-care centre terminology in Denmark I would say so everybody wants to use it. We should be maybe more sharp on the definition. (Practitioner 1, Denmark, Group discussion)

Practitioners explored the parameters of their provision comparing examples to reveal continuities and differences in their practice, evident within the group discussion and case studies. The over-reliance on broad terms and examples taken without reference to the cultural and situated elements inherent in them was criticised and is summed up in the following exchange taken from the group discussion.

> (Practitioner 2, Denmark): we very much rely on the belief that the staff is able to see if things are working and moving in the right direction, and what is the right direction, yes, that is what we have written in the curriculum. We don't need anyone external to come in and have a look at it and say, okay.
>
> (Practitioner 4, UK): And I think we always talk about Scandinavia as being the model, yes.

(Practitioner 2, Denmark): Don't put us up on a pedestal.

3.2 Place-based practice

Moving on from discontinuities, there were aspects of practice that were echoed by practitioners. The importance of visiting and re-visiting a single location was stressed so that a continued relationship can be established. Explanations given to support such practice included opening up the relationship to wider frames of reference, including seasonal changes and allowing a deeper relationship to develop.

> I think the other thing that's quite important is that it's the same place as well so the children or the user group, whoever they are, can gain a relationship with that place, but also see the change in the seasons and experience that and be part of that. (Practitioner 1, UK, Group discussion)

There are strong links between the previous quote and the following that adds to the role of place in experience explaining that learning outdoors somewhere local facilitates the relationship but also increases the likelihood of it being visited regularly.

> …make that connection somewhere local, and hopefully that will get the longevity of them visiting that in the future. (Practitioner 2, UK, Group discussion)

The role of place within children's education is also evident within two Finnish episodes, where children appear to have a strong sense of self and this fed into their connection to a nature-based setting. The first involves a "quinzee", a snow structure and familiar feature of Finnish winters, constructed by children and adults over 1-2 days. Children revisited and enjoyed the structures, then saw them melt or disappear but were not despondent at such occurrences. This may be in part as Nordic children experience snow for a longer period in their winter and as such appear to understand its prolonged status during a number of months.

The second example occurred on arrival at the forest one morning where the participants found that a shelter had been vandalised overnight, as evidenced in this exchange:

Practitioner:	Look, what has been done here?
Child 1:	it [the knotted ropes] has been cut with a knife
Child 2:	not teeth, it's been cut with a knife
Child 3:	I saw some of our rope on the road coming … they went over there.

The resilience of the participants was clear as the task of repairing and strengthening the shelter was immediate. Both examples indicate children retain positive attitudes, their composure unaffected by the inherent unpredictability of their setting. Such resilience and indeed an awareness to changes in place may be borne in part by characteristics of their nature settings, which is caused by both natural and man-made events. Alternatively, it may be because change is experienced first-hand. Even so, despite frequent change a sense of place was still established.

> "This is so special, I am happiest ever ..ever here" (Child, Scotland)

Seasonal and meteorological changes are a significant element within such settings and was recognised by practitioners and children.

> "… because flowers are here sometimes, but in winter we can eat snow pizzas. They taste so cold. Use your thumb, get a slice, eat it!"(Child, Denmark)

Children in the Scottish nature kindergarten harvested vegetables for soup and in the Finnish setting wild summer berries frozen as cordial were later reheated on the fire in the autumn. In the Finnish winter, for example, the duration of a session was reduced by extreme weather conditions. Whilst limiting in this respect, participants did not generally view weather as a barrier to their use of the natural environment, but rather the weather extended the range of possible opportunities if participants were adequately prepared. Each nature kindergarten used shelters in the forest at different times for different purposes. For example, data recordings of wet socks that had been removed and lay steaming next to the open fire as child warmed their bare feet.

Further examples evidence that place and nature are inextricably linked. The first quote suggests how snow in the winter provides a distinct environment for a child.

> …it's good how the seasons make a different place for us all the time … in the snow is best – we walk higher in the snow. Winter is my favourite. (Child, Finland)[9]

Additional support is provided by an example recorded during a reflective session held in Scotland. Practitioners used Talking and Thinking Floorbooks™ [10] when consulting with children to revisit earlier experiences. Children volunteered comments describing seasonal changes by referring to specific locations and the experiences they afforded, noting how places special to them varied during the course of seasons. Recognition of such seasonal changes was widespread and entrenched in both adult's and children's views regarding their setting.

3.3 Barriers to practice

The value of outdoor learning was repeatedly touched upon in the group discussion and in relation to supporting the continuation of such opportunities the discussion revealed a number of challenges to the provision of good practice. One such barrier was linked to pressures taking place in different countries when educational reforms were occurring. The following comment sums up this thread from the group discussion suggesting that learning outside when accommodating changes in policy can lead to tension amongst practitioners.

> …they're frightened what they say might not be the current thinking, you know, that it might have changed and they haven't noticed so, you know, with us we've just got a new national framework for Australia and we've got an early years framework as well, so all that comes in now and we have to do that… our documentation in accordance to that now, which is totally different. (Practitioner, Australia, Group discussion)

A particularly relevant point related to the cultural contexts operating in non-Nordic countries where the availability of open-ended opportunities was considered. Practitioners reported concerns that pressure to meet targets or specific outcomes would hamper the availability of such opportunities in nature-based settings.

> I don't know in your settings whether that would be possible, but I can't imagine many settings where they would allow children that kind of freedom to pursue their own learning journey. (Practitioner 4, UK, Group discussion)

Practitioners need to maintain the form and shape of experiences avoid making them tokenistic. Allowing children the opportunity to explore their environment without artificially introducing learning opportunities or creating specific goal-orientated projects were recognised as key features of nature-based practice. An additional constraint related to the attitude and beliefs held by the adult/s who accompany children outdoors. The following quote illustrates a UK example that evidences the difficulties some practitioners encounter when attempting to engage with outdoor learning. The changeable nature of policy and guidance has reduced the saliency of such opportunities; leading practitioners to question their skills before they have had a chance to test out methods most suited to nature-based learning.

> She's just lost all confidence as well, she said it (policy) will change again, and I could tell that she wasn't really that keen, she wasn't keen on getting on board.....even though she's got this big book of evidence, she still feels like if someone inspects her, I'm not going to be able to tell them I've done anything. (Practitioner 2, UK, Group discussion)

Theme 4. Good practice

This theme focuses on the contribution of nature to practice, considering nature as resource and has been labelled good practice, in relation to practitioners desire to learn from others (as noted in theme 1) so that they can develop their knowledge and provide learning opportunities that most benefit children. Such pedagogical practice is presented in two subthemes.

Theme 4.1 Risk rich practice

Not surprisingly, given the status of risk in outdoor learning, practitioners made frequent reference to risk rich episodes. The following excerpts illustrate how cultural diversity and seasonal or meteorological aspects may contribute to variations in risk rich practice in combination with responses to sensory cues across cases.

> *Tree-climbing*
>
> life is dangerous. We let them climb up, they will climb down 99 times out of 100. Practitioner, Denmark)
>
> when the children are climbing a tree, we always stay close by. We ask the child to only go as high as they feel safe. (Practitioner, Scotland)
>
> *Use of fire*
>
> the children don't feed the fire. Our policy is that an adult is always at the fire site when the fire is lit. (Practitioner, Scotland)
>
> It is exciting, not dangerous, little by little, they learn to handle it. (Practitioner, Finland)
>
> Light the fire is usually the first job, we all need to keep warm … and today we have Joonas's salmon to cook! (Practitioner, Finland)
>
> *Attitude towards risk within learning*
>
> our culture has a different attitude to hurting and harm … the adult must let go, only then will the child learn. Education inspectors left Denmark 25 years ago. They trusted us to be doing our job properly and we trust the children to behave with knives or fire or whatever. (Practitioner, Denmark)

Underlying these opportunities is the ethos of mutual reciprocity between participants when experiences are risk rich. Children are seen and see themselves as competent partners in learning, who share responsibility for their learning. The positive dispositions to learning may stem from such experience and their recognition is vital. The following excerpts show that adults recognise their

role in creating and supporting such opportunities for learning. The final comment given by a child suggests how learners reflect on such skills,

> we enter with the child into the dangerous world. (Practitioner, Finland)
>
> there are about 1:10 staff ratio...[the children] can do a lot themselves, they don't need many of us.(Practitioner, Denmark)
>
> we need this [the petroleum jelly] well out of the way to keep us safe. (Child, Scotland)

Interestingly, in contrast to research from English speaking (UK and USA) nations, Nordic literature and evidence makes only limited reference to risk and perhaps a reason in the attitudes expressed here. This may suggest that nature environments as a setting are influential in the offer of risk rich opportunities. Further research is needed to explore and investigate this finding.

4.2 Nature as the educator

One crucial factor relates to the pervasive belief amongst the practitioners that nature is the educator. Practitioners frequently referred to the notion of affordance, both at an informed and subconscious level. The use of nature, as setting and resource, affords flexibility in pedagogical practice and provide multiple possibilities for children's learning and development. This inherent flexibility makes it difficult to represent the open-ended and varied learning opportunities and was presented repeatedly by different practitioners:

> …we work in nature time. A learning point may develop during a whole season say, when leaves turn and fall. (Practitioner, Scotland)
>
> plans for each day are according to what is happening in the nature, what the nature gives us. (Practitioner, Finland)
>
> There is no hurry. The children have time to study nature. (Practitioner, Finland)
>
> Life is not Disney. The children understand earth to mouth. They see death and life in the nature (Practitioner, Denmark)
>
> if we catch fish, we will eat that, but if there is no fish, there has to be another plan, another menu! (Practitioner, Finland)

Scottish practitioners were regularly involved in a child's departure at the end of each day. This may be in the form of a pastoral episode such as help with changing boots, but it customarily was in the form of verbal feedback or written evidence in for example, entries in Talking and Thinking Floorbooks™ about their day. Such action was based on the requirement in the UK for written evidence of learning, often used as a reporting mechanism between early childhood settings and

home (DfE, 2012; Scottish Government, 2008). In Denmark, a response to the question of a requirement for documented evidence of children's learning offered a stark contrast:

> …it's enough that we are with [the children]. Sometimes we tell [the parents]. Writing about it … we have absolutely no time for that. No possibility for that. (Practitioner, Denmark) The children will remember the sun on their faces and the parents will see dirty knees. That's enough (Practitioner, Scotland)

Summary

A group discussion and case studies considered the cultural and situational factors that feature in nature-based practice. The group discussion provided an opportunity for practitioners to engage and converse with like-minded peers. The case study approach used observational methods to develop a description of nature kindergartens found in different countries. Specific research strategies enabled contextualised and contingent data to be recorded that allowed a rich picture of nature kindergartens as setting and resource for learning to emerge when cultural and situational factors were included.

Practitioners were willing to share their experience and offer illustrative examples where cultural and situated factors influenced practice. Practitioners from different countries were curious in how their peers use nature and eager to learn from others. This interest manifested as a willingness to share, consider situational factors and engage in a nature-based learning 'community'.

Practitioners engaged with parents in multiple ways to support a child's experience in their setting. Such engagement was proactive when settings sought to converse with parents, however, on other occasions examples given within the group discussion were reactive, for example when parents and practitioners held different beliefs.

A lack of transparency regarding practice within nature-based learning or nature kindergartens was given considerable debate; part of the debate focused on preconceptions, noting that they are too easily shared and accepted given that they ignore the cultural context in which practice is rooted. Although familiar with nature-based learning, practitioners did voice their concerns noting that reforms and educational change posed threats to such practice. Discussion straddled practitioners' concerns when their preferred mode of working was in conflict with newer recommendations and explained that such changes had consequences for teachers' confidence and belief in their skill. The

subtlety of such skills are seen as key elements of nature-based learning utilised by practitioners when interacting with children to support learning. Adult-child consultation and trust during risk rich episodes suggests an ethos of mutual reciprocity underlies much of nature kindergarten practice.

Nature-based practitioners covet the use of nature as the educator and support children's connection to nature during that process. Human-nature interactions were recorded in all weathers and are interpreted by practitioners as opportunities or affordances offered by nature. The case studies evidenced distinct contrast in what may constitute "good practice" in different countries.

Recognition of sense of place was noted by adults and children alike. An appreciation of the context in which learning operates was noted when the discussion considered visiting and re-visiting locations, in particular that locality was likely to be element evident in longitudinal connections. A description of practice can be obtained when nature-based learning is broken into its component parts, in so far as these components are embraced as being situated and context dependent so that their individual contributions to nature-based learning are made apparent.

Discussion

This paper explored practice occurring in nature-based settings using practitioner's voices and on-site observation as data. The methodology developed for these studies was sensitive to the situated context thereby avoiding "forced comparisons" (Judge, 2000, p. 155). The research describes how nature, as an education setting and resource, is differentiated and contextualised across settings.

An emerging theme reflected the value of the intergenerational relationship between practitioners, parents and grandparents. The group discussion noted that practitioners had to contend with parents concerns, regarding outdoor learning, where opportunities and experiences were likely to involve a degree of risk. How practitioners addressed these concerns was an aspect of practice that influenced the adult-child relationship. Although, parent's selection of the setting their child attends may give an indication of favourable views regarding such provision, parents may still hold concerns regarding the experiences offered to their child. Intergenerational relationships were also identified within the case studies, where parents and grandparents became involved in children's experiences, enabling the transmission of culturally dependent information. Such intergenerational interaction is set apart from other research that shows grandparents role in children's upbringing was geared

towards supporting parents return to work (Gray, 2005; Hank & Buber, 2009) or used as a means of engaging parents with their child's school (Mannion & Adey, 2011). Future research examining parent's selection of childcare provision where connection with nature is recognised as an element contributing to a "good childhood" is warranted.

Pre and misconceptions of practice were clearly identifiable. The group discussion in particular explored the variability in such terminology. The inherent flexibility in nature-based provision makes it difficult to comprehensively represent its open-ended and varied forms of learning opportunities. This aside, the use of terminology and labelling of provision ought to be used with due consideration to the breadth of practice the label envelops. Practitioners referred to or implied that nature-based learning held multiple affordances. A discussion of affordances in relation to early years provision that builds upon current literature is valid because research generated by the three case studies uses the concept of the affordances to address where flexibility in pedagogical practice appears to go hand in hand with multiple possibilities for children's learning (Sandseter, 2009a; Warden, 2010). By recording cases of nature kindergartens using observation and taking account of their sensory aspects enhances understanding of these affordances.

The current paper suggests that a foundation of trust and mutuality underpin children's connection to certain areas. The case studies showed that children were offered opportunities with real tools to utilise their risk assessing skills meaningfully, without inadvertent intervention from adults. Such mutual reciprocity illustrates how negotiation and trust on the part of the adult and child can enable children to learn with nature. It was this form of interaction and underlying mind-set that was evident in both the group discussion and visits made to other countries by practitioners involved in the case studies. On the basis that developing a sense of place involves socio-emotional skills, practitioners will need to be sensitive to children's emotional capabilities and have the requisite skills to support children's emotional development, and could provide an avenue for future study. A tension noted by group discussion participants concerned the requirements set by different countries in relation to learning, in that UK policy requests completion of documentation and this was not the case in settings located in other countries. This should not suggest that a singular approach is optimal rather that contextually dependent pressures influence pedagogical practice. A similar point was noted within the case studies as practitioners were eager to visit countries and learn from examples. Practitioners may however, encounter difficulties in translating observed examples to their settings, as such transfer involves addressing the cultural and situated context of learning, not just replicating a specific experience or method. Further scrutiny is called for, in

particularly how practitioners reframe their approach to learning given that nature offers flexibility in how it is used (Stelter, 2005. as cited in Bentsen, Mygind, & Randrup, 2009). Comprehension of such subtle influences upon practice cannot be underestimated on the grounds that if evidence or formal documentation is required, practitioners will have the resource, and setting in which, learning can take place and the capabilities to complete relevant tasks.

The practice and examples reported in this paper should not be considered as representative of each country. Rather knowledge gleamed from such practice foregrounds a need to identify key features of nature-based learning such as risk taking and its potential across cultural boundaries. We have shown that addressing preconceptions and ambiguities using comparison in an empirical and critical way is a valuable next step and should be encouraged in future research. This paper offers a description of adult-child relationships in nature-based settings and having taken on board the local conditions relating to each setting, suggests how such practice may be contextualised elsewhere. The pioneering models of nature education such as Froebel and others, that underpin contemporary ideas, were responses to particular conditions. As ideas moved to different contexts, the models were adapted, as with the more recent example of Forest School. Similarly, Nordic approaches to nature-based learning are likely to be adapted to suit the particular conditions, pedagogical or otherwise, in which they develop. Development of such knowledge cannot be underestimated so that "naive" comparisons are avoided (Alexander, 2000). There is growing recognition in Scotland as to the value of nature environments and their potential within early childhood education, and was alluded to by a (former) Member of Scottish Parliament whose responsibilities at that time included Children and Early Years (personal communication, May 26, 2009). This paper suggest a 'community of practice' underlies those committed to nature-based education, including parents, children, practitioners and wider stakeholders (Wenger, 1999). The 'commonly shared focal point' of this community is the development of human-nature relationships through and a connection of children to nature through nature-based learning (Fetterman, 2010, p. 17). Fleer (2003) considers the impact of a specialised discourse in early childhood education and questions the profession's openness to new ideas and practices. If we distil this broad discourse into nature-based early childhood education, these studies suggest a curiosity that crosses boundaries but is receptive to cultural factors. Of significance is that local practice, behaviours, and values are of interest globally to nature-based early childhood practitioners.

This paper shows that practitioners are eager to share illustrative details of their approach, which then can transform their perception of their own and others methods. In turn, such engagement

can modify practice, help objectify behaviours and values in one's own and others' methods. Future work could consider how reflective thinking enables practitioners to take ownership and become confident. One likely approach may explore how practitioners identify themselves in relation to experience – do they view themselves as outsiders on the verge of experience or entrenched in practice? Miller, Dalli, and Urban (2011) note that practitioner's insight is crucial when changes supporting a transformation in practice are anticipated. Given the concerns raised during the group discussion regarding practitioner's self-belief, this would appear to be an avenue worth considering, particularly if erosion of nature-based learning is be countered. While the group discussion and case studies have provided insight regarding nature-based learning, further research is needed to see whether these are generalisable to other examples of nature-based learning within other countries.

Conclusion

Pedagogy (Alexander, 2000) encompasses the teacher and so much more and it is exciting to see research encompassing the many strands and perspectives of nature-based learning. The emerging findings reported in this paper promise to yield new understanding about the interweaving of pedagogical and cultural factors in practice. Addressing preconceptions and ambiguities using comparison in an empirical and critical way is a valuable next step and should be encouraged in future research. There exists a cohort of practitioners who are eager to connect children and nature through nature-based learning. By considering practitioners as gatekeepers who shape each child's nature-based learning in ways understood as being culturally significant and meaningful, this paper has shown by listening to their voices, we can gain an understanding of how nature as setting and resource can have a central role in early childhood settings.

Footnotes

1 Also known as outdoor nurseries, forest kindergartens, *naturbørnehaven* (Denmark) or *luontopäiväkoti* (Finland), nature kindergartens are a specialist early childhood provision for children aged between two and seven years that use outdoor, natural environments as a key resource and setting. They may be sited in forests, woodland, beaches, and other natural environments. Around 90% of each day is spent outdoors.

2 Readers are advised to see (Bentsen et al., 2009)

3 Forest School was established in the UK in the late 1990's. It is a part-time provision using predominantly woodland areas by 3-18 year olds. For more detailed studies see Borradaile (2006), and Knight (2011).

4 Chief Executive, Children in Scotland

5 Adult : child ratios refer to the maximum number of children per adult in early childhood institutions. In the UK, guidelines from Ofsted and other regulatory bodies, aim to ensure each child receives sufficient care and supervision. Ratios are determined by the age of the child and the type of activity.

6 For the purpose of this study, sensory episodes are limited to human-environment interactions and the effect of climate and weather.

7 Multiple practitioners from a country are numbered to help show the different voices being reported

8 The "special week" is an occasion where each child invited family members, friends from other settings and significant others to share time at nature kindergarten. Visitors would stay for between one day and the full week.

9 The child in this excerpt is referring to how, during winter months, the step into the forest hut and the benches around the site were buried under compacted snow.

10 Talking and Thinking Floorbooks (Warden, 2006) are a participatory tool designed with a pedagogical purpose. Akin to Classroom Books (Dockett & Perry, 2005; Einarsdottir, Dockett, & Perry, 2009), participants at the Scottish nature kindergarten used the books to record evidence of events and episodes.

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