Place-responsive Pedagogy: Learning from Teachers' Experiences of Excursions in Nature

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The nature-based excursion has been a significant teaching strategy in environmental education for decades. This article draws upon empirical data from a collaborative research project where teachers were encouraged to visit natural areas to provide an understanding of their roles and experiences of planning and enacting excursions. The analysis indicates that teachers' sensitisation towards place was aided by collaboration, advance planning visits, and the very practice of making place-responsive excursions with pupils. The authors build on the analysis to propose a theory of place-responsive pedagogy. At its core, place-responsive pedagogy involves the explicit efforts to teach by-means-of-an-environment with the aim of understanding and improving human-environment relations. Some implications for teacher professional development are offered.

Keywords: environmental education, place, nature, pedagogy, excursions, outdoor, learning, teacher development, teacher expertise, place-responsive.

Introduction

In industrialized countries, there has been a marked concern for the time children spend in nature and in how this might be necessary for children's development (Louv 2005). Yet, in the UK, researchers have found opportunities for learning beyond the classroom are either very limited, irregular, or in decline (O'Donnell, Morris and Wilson 2006, Mannion, Sankey, Doyle, Mattu, and Wilson 2007, Power, Taylor, Rees and Jones 2009) despite excursion making of all kinds becoming formally legitimated in curricula (DCSF 2006, Scottish Executive 2004, Learning and Teaching Scotland 2010, Waite 2011).[i]

Historically, nature excursions have played a role in environmental education in diverse cultural contexts (see Henderson and Vikander 2007, Takano et al. 2009). They have formed part of classical nature education, conservation education, and more recently formed part of outdoor learning, outdoor education, and place-based education (Hammerman and Hammerman 1964, Cooper 1992, Dahlgren and

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Szezepanski 1998, Martin 2004, Gruenewald 2003, Sandell and Öhman 2010). In Scandinavia, where the philosophy of the outdoor lifestyle or *friluftsliv* is deep rooted, the idea of using local natural places for learning through schooling has emerged as a grassroots movement (see Jordet 1998, Bentsen, Mygind and Randrup 2009). However contextualised, excursions in nature have been identified as aiding the development of pupils' admiration for nature, opportunities to develop actions and a caring attitude towards nature, and the development of scientific understandings (see Postma 2006). Within this work, there is still a clear need to better understand and theorise the role of teachers in harnessing place as a key context for environmental education.

Through making links with our empirical analysis of nature excursions, this article seeks to explore teachers' roles in excursion making and, using the findings as a springboard, to theorise place-responsive pedagogy. In part, this is in response to a call for greater attention to ontological considerations of place (Karrow and Fazio 2010), to the lived experiences of historically embodied actors in material, social, symbolic and environmental conditions (Payne 2005), and to the theoretical debates around the role of the socio-material in emerging post-humanist understandings of (environmental) educational practice (Rautio 2012). We propose the term *place-responsive pedagogy* to capture one way of considering how educators make explicit efforts to collaborate in assembling people, places and purposeful activities together, to produce viable and valuable environmental educational experiences. As such, our proposals for what counts as place-responsive pedagogy may have significance for understanding approaches taken to nature excursions of all kinds, as well as for the role of place generally in educational practice.

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In our literature section, we first frame the article's theoretical contribution with an introduction to selected literature on place and the ontological consideration of nature-culture relations. We further position the work, by briefly looking at research on nature excursions. Then, we draw upon an action research project to analyse empirical examples of teachers' lived experiences of planning and enacting excursions. We build upon the analysis to propose some elements of a place-responsive pedagogy. In the conclusion, we explore the consequences of such a proposal for teacher education.

The Literature

Place and Ontological Considerations

How researchers account for the role of place in environmentally focused pedagogy is a moot point. In the United States and Australia, place has emerged as a key context for pedagogies of various kinds (Gruenewald 2003, Sobel 2004, Skamp 2009). However, what exactly is operational in people's learning with and in places remains under theorised (Nespor 2008). In redress, we feel some emerging perspectives (Ingold 2000, 2010, Wattchow and Brown 2011, Payne and Wattchow 2009, Karrow and Fazio 2010) can come to our aid. In different ways, these authors all suggest that people and places are in reciprocal relation. Material, specific, local-yet-connected places, by this view, are core to experiences and vice versa. Jones captures the lively view of place we find useful: places are "temporal processes where all manners of trajectories – people, non-humans, economies, technologies, ideas and more – come together to assemble enduring (but also changing/open to change) distinctive patterns which are still fully networked into the wider world" (Jones 2009 p 304). For Karrow

and Fazio (2010), "Educating-within-place" (purposefully hyphenated and shaped a verb) is based on a sense of "ongoingness, intimacy, imbeddedness, the active, inevitable, evocation of the possible" (p 202) based on a view of "place as the open region where entities come into appearance" (p 198). According to Karrow and Fazio (2010), this ontological understanding is absent from most perspectives on place-based education. They argue we should consider the natural and cultural as intermingled and co-emergent. By this view, place and pedagogy are ontologically linked dimensions of a process within which teachers and learners work and are themselves re-worked.

Similarly, informed by Heidegger and Deleuze, Ingold sees people (and other organisms) as "points of growth" (Ingold 2003 p. 304) in an entangled way with places. Theoretically, Ingold suggests that ecological, socio-cultural, material-relational places make up the world in which we live. This world of dwelt-in places is the only source of our capacities to communicate and learn, the only world in which our activities take effect, and the only world in which meaning inheres.

More widely, we locate our contribution within some linked strands of research on curriculum making: as a lived experience (Aoki, 2005), as a rhizomatic practice (Gough, 2007), as an experimental activity involving the perception of embodied learners (Ellsworth, 2005), and as a path that may demand uncertain or unknowable outcomes (Osberg, Biesta & Cilliers, 2008).

Empirical Research on Excursions in Nature

Morag and Tal (2012) use existing literature to provide a framework for identifying and assessing good practice in planning and executing field trips. For Morag and Tal (2012), the category of 'field trip' includes excursions in nature but also other kinds

of outdoor visits teachers facilitate alongside other specialists. In their observations of trips, they found (inter alia) that good preparation and links to the formal curriculum were uncommon and that the immediate environment was insufficiently used as a learning resource.

Another strand of the research has been concerned with impacts and outcomes *for learners* (see for example, Brody 2005, Mygind 2009, Morag and Tal 2012). In the Australian context, Ballantyne and Packer (2002) show that nature excursions can impact on pupils' attitudes towards the environment, their desire to look after it, their behaviour in natural areas, and their household environmental practices. Ballantyne and Packer (2009) identify the importance of opportunities for learners to touch and interact with wildlife, the value of allowing some free choice for pupils in the tasks and activities undertaken, and the role of adults in excursions. They assert that "the greatest benefits for environmental education will be obtained from the use of experienced-based learning strategies in natural environments" (p. 260). Bögeholz's (2006), German based study, suggests that experiences focusing on aesthetic or social dimensions are less effective than scientific experiences for key environmental education outcomes such as the generation of environmental knowledge, motivation and intention to act.

In practice, many factors combine in complex ways in teachers' locally situated contexts to influence when, if, and how teachers enact excursions (Higgins, Nicol and Ross 2006): finance, time, teacher-pupil ratios, safety, weather, transport, disruption to classes, and teacher qualifications – all interact. Natural England's study also shows the nested importance of a range of factors including teachers' views on their subject, the wider role of education, teachers' self-efficacy, their work practices,

their school leaders' commitment, and the relationship between schools and providers (Natural England, 2010).

We know that significant adults, such as teachers, can play a vital role in longer-term effects on pro-environmental behaviour (Chawla 2009), yet, we still know little about how teachers facilitate this as an outcome. Dillon et al (2005), DeWitt and Osborne (2007), and Morag and Tal (2012) all suggest some areas for *teacher development* but do not explore how we might do this, nor do they address any associated ontological issues. In line with other authors, DeWitt and Osborne (2007) suggest teachers need to (a) become familiar with the setting beforehand, (b) orient students to the place and the learning objectives, (c) do pre-visit and post-visit activities with pupils, (d) allow students time to explore while on trips, and (e) plan activities that support the formally intended curriculum whilst also taking advantage of the uniqueness of the setting.

These literatures (above) suggest a clear need to further understand empirically and theoretically the role of place in environmental education. Another gap in the literature is an understanding of how, in practice, teachers plan for excursions and develop their ability to work in natural settings to meet the aims of environmental education. It is timely that we now look closer at how 'teachers matter' (Day, Kington, Stobart, Sammons and Gu 2007) in nature excursions, but we wish to do this while being open to understanding teachers' work in a way that is interconnected with their embodied activities in material places (Payne 2005).

The Research

Method and Design

The research project reported upon herein was a teachers' collaborative action enquiry project on nature excursions in Scotland funded by Scottish Natural Heritage (SNH) (Scotland's national conservation body). The project was conceived of as an experiment that permitted teachers to learn how to lead their own excursions by working collaboratively through an exploratory approach (Allwright 2003). As such, it blurs the boundaries between teacher development and educational research (Elliot 1993, Hart 1996).

During the 16-month project, 18 volunteering teachers from primary and secondary schools in four different geographical areas across a range of subject areas were encouraged to plan and execute excursions in four different locations. The chosen locations were three diverse National Nature Reserves[ii] (NNRs) and one other natural area, all of which were local to the teachers' schools. The teachers were asked to:

- Get to know their area through planning and visiting the sites
- Select a focus for some educational activity in the form of a puzzle
- Refine their thinking (discussion/research/reflection).
- Find/design/adapt the outdoor activities
- Use these strategies with their class group
- Record how it went
- Generate new knowledge and practices
- Potentially, revisit the site again with pupils
- Collaborate, reflect, and interpret and consider the implications

Teachers worked within four teams to plan for the excursions. All teachers made planning visits to the chosen locations ahead of their excursions with pupils; many teachers made more than one planning visit. All teachers felt these planning visits were a very necessary aspect of the planning process and their own

development towards harnessing the outdoor context into their teaching. When the time came to make the excursions with pupils, teachers often linked up with other staff and/or with nature reserve staff, countryside rangers, parents and local people (for example, historians, land owners, farmers).

At an initial project workshop, teachers were provided with some background on outdoor educational provisions in Scotland, health and safety regulations, the natural heritage of Scotland, and research evidence on the processes of planning and execution of excursions. This included evidence from an earlier research project on provisions of outdoor learning in Scotland and evidence from young people about what kinds of outdoor experiences in nature they valued (see Mannion et al. 2007) which indicated the likely relevance of the synergy among people, natural places, and activities. We asked teachers to generate their own locally relevant curriculum through excursions in nature while yet addressing the needs of the nationally agreed outcomes for pupils. Following Allwright's (2003) teacher-led approach, to orient their work further, teachers were invited to identify a puzzle that would be meaningful for themselves, and their school pupils. Teachers' puzzles addressed a wide range of topics in diverse subject areas. They included how excursions in nature in their local area could (i) enhance children's understanding of prayer, (ii) be used for improvised dramatisations of local legends, (iii) provide inspiration for senior art and design students, and (iv) be contexts for an area-based historical study. We focus here on the teachers' experiences of their efforts, drawing on the data they provided as the project unfolded (see Mannion, Fenwick, Nugent and I'Anson 2011; and project website: www.teachinginnature.stir.ac.uk).

In total, three residential project workshops were provided giving support for teachers in a spirit of collegiality and experimentation (Berliner 2001, Joyce and

Showers 1998). At these events, plans and experiences were shared. Funds were made available for teachers to attend.

Data Collection and Analysis

As university researchers, we employed an ethnographic mixed method approach (Yin 1994) informed by pragmatist and post-phenomenological approaches (Payne 2005) and relational materialism (Hultman and Taguchi 2010). We sought to witness and interpret the embodied relational experiences of teachers and pupils and the effects and connections between the forces and flows of the material in these experiences (rather than the internalised experience of human subjects).

For the data collection, we took a case to mean a single teacher-led excursion with pupils plus all associated planning/preparatory visits by teachers, excursion review processes, and any related texts/outputs. Out of the 18 potential cases (created by the 18 participating teachers), nine were chosen from lower, middle, upper primary years and secondary schools (see table 1, below) for inclusion in more in-depth ethnographic fieldwork and data collection. The teachers in the selected cases had varying degrees of expertise[iii] in teaching outdoors. We draw exemplar data below from these cases in subsequent sections.

[Table goes here]

Following Ingold (2011), we conceived of data collection as the enactment of place-sensitive itineration within a unified relational field of people, place and activity. In part, this involved walking with the teachers and interviewing them while on planning trips and on excursions. Field-notes and observations by a team of researchers who were present at planning visits and excursions provided some 'thick' description (Geertz 1983) of events. We video recorded phases of three different

group planning visits and phases of the nine chosen case excursions. This provided data on the interactions, activities and the topography of the specific places visited. We also audio recorded and transcribed the group discussions during workshops. Additional contextual data in the form of classroom texts (such as student-produced work), communications (e-mails between teacher-researchers) and teachers' final project reflections were collected. After excursions, teachers wrote Excursion Reviews and provided written responses to the following questions:

1) Reflecting on your excursions and associated work, what were the most influential factors that affected whether you brought a class group outdoors into nature or not?
2) Thinking about educational outdoor events in nature generally, please nominate the most important ingredients[iv] required to enhance the educational value of excursions?

The data collection and interpretive analysis was shared to a substantial degree among the project team of university staff with assistance from the teachers. Insights and findings were shared with the teachers as the project ensued. We generated single case study notes and, thereafter, compared cases. Short summary videos of the nine excursions were produced. These offered a context for understanding other data sources (Pink 2007) and were used as prompts for tape-recorded workshop conversations, which were transcribed and analysed using coding mechanisms derived from the case study analysis (Bogdan and Biklen 1992). Project reports were discussed with teachers before finalising them. University staff gained consent for research activities from teachers, head teachers, pupils and parents.

Excursion Reports proved very interesting as summative records of teachers' reflections on experiences. These were analysed for teacher-reported factors in excursion execution. We derived five main sets of factors and refined these by revisiting all the datasets:

1. **school factors**: head teacher and collegial support, timetable, finances,

2. **wider support factors:** parental help, experts, curriculum imperatives, transport, professional development programmes.
3. **pupil factors:** their dispositions and experience as outdoor learners.
4. **teacher factors:** their planning, dispositions, collaborations, perceptions, biographies.
5. **place factors:** the seasonal, topographical, historical and other aspects of the place, place responses, place contingencies, place and its connection to teaching strategy.

For this article, we present selected data from various data sources under themes four and five. We present these under the headings of (a) place-responsive planning and (b) place-responsive enactments. These headings reflect our increasing sensitisation to the importance of teachers' dispositions to place as the project evolved.

Findings

Place-responsive planning

In line with Joyce and Showers' (1998) finding on collaboration, teachers commented favourably on the peer-to-peer elements of the action enquiry approach taken. They valued the permission to fail, and the mutual support structures, opportunities for "listening to other people's ideas regarding taking pupils out" (ST)[v], the "professional discussions" (PT)[vi], and "working with fellow professionals to plan" (PT). Another teacher said: "*Doing* this with others [is important] as possibilities will occur to them that you haven't envisaged – *collaboration*".

> T[vii] 1: The collaborative approach has really motivated us.
> T 2: And encourages each other. (Workshop 3 Focus Group*)*

All teachers spoke convincingly about the importance of making collaborative planning visits in advance of taking their pupils. These visits enabled teachers to

consider health and safety aspects, share ideas for teaching, and to learn about the place. Reflecting on the planning visits one teacher said:

> PT: It just opens up…sees all the opportunities….possibilities that are there …. what could you do there … to be able to point out things to them that you've seen as a starting point for them [the pupils] (Novice Outdoor)[viii].

Novice outdoor educators were more concerned with perceived risks, health and safety, the perception of burdensome paperwork and logistical issues, for example whether the terrain would be too difficult for younger pupils. But, the collaborative approach provided "that bit of reassurance from other people" (PT) and issues became more surmountable:

> PT: We were seeing possibilities together and perhaps talking about some of the problems and maybe thinking of some solutions for instance the health and safety issue … the fact that there weren't toilets and … it just helped us to sort of think through some of the issues. (Novice Outdoor).

Teachers who self-reported that they were more experienced in teaching outdoors were more ambivalent about these sorts of issues, viewing some element of risk-taking as an important. These three written comments came from teachers' Excursion Reviews:

> Risk assessments – finding a way through the school and authority maze. We need a simple 'this is what you need to do' list." (Novice Outdoor teacher).
>
> Worries about narrow paths (Novice Outdoor)
>
> Balancing being safe from harm and physically comfortable (sensible and suitable clothing) with an element of danger (jumping rivers, ground, wild animals encounters (Experienced Outdoor).

As the project unfolded, we discovered that the majority of teachers had undertaken more than one planning visit prior to their excursions. These visits were

motivated by the "responsibility of being a teacher" (PT): their felt need to be well planned, prepared, and connected with the place.

> ST: I went on back on the Sunday on my own with my dog … And sometimes being there on your own…I mean if I go somewhere on my own it feels more that this is *my place* … because that gives you that kind of ownership.

> ST: I went back the following weekend … cos I wanted in my head to know as much about the area as I could before I take my children cos you'll need to be prepared.

The prospect of going into nature to teach resulted in some teachers feeling less competent than they would normally in indoor environments. At the same time, being outside in nature was experienced as a space for exploring a new, less constrained professional identity.

> ST: I become more relaxed when I'm outdoors, I become more 'me'…. and the children feed off on that I think … when you appear in a school you're filling a pretty narrow personality slot there's only certain parts of you that really are going to be acceptable in there but as soon as you take the walls away and go out then you can kind of like a sponge kind of fill up a bit and be a bigger person.

> PT: If you're in the middle of a wood, there's only us … There's no other public kind of watching you in that professional role.

On planning trips, some remembered and compared their own experiences of nature as children with that of their pupils. Some teachers made connections between their role as a parent and as an educator.

> PT: I think when you're in a place like that …it makes you reflect on your own experience … you make a relationship between the two things.

Teachers reported that the planning visits opened up new possibilities and changed and challenged views on what they regularly did with their pupils indoors. For example, this art and design teacher said:

> ST: We have dusty old bits of junk in the classroom and what not, and they kind of know that's school stuff. (Novice Outdoor).

One primary teacher looked forward to having her group outdoors and "being able to be there on their own. I think that's something quite special". This secondary teacher said (comparing indoor schooling with the nature excursion): "It's a form of incarceration, so a day out is a form of freedom."

Evidence suggested that collaborative planning visits, extended time in natural settings, and opportunity for reflection were all useful ingredients in planning excursions, particularly for the 'novice outdoor' teachers. There was evidence that through these approaches, teachers found new scope to re-work their own perspectives of themselves as educators. We found that place and material context were not backdrops to the actions of teachers; the new socio-material context was implicated in planning (and, as we will see, later in the teaching). For these teachers, spending time in the nature reserves involved getting to know the place, and themselves better; through this reconnaissance, they looked again at what role the materiality of the world would play in their pedagogies and in their plans for the generation of new meanings with their learners. In part, this may be because of the design of the study in that it asked them to consider place as part of the curriculum design process but we expect this is a wider phenomenon common to more than this context.

So far, this strand of analysis provides empirical support for the potential of considering curriculum design as a socio-material and embodied practice in places. There is resonance in our findings with Wattchow and Brown's (2011) signposts for a "pedagogy of place" which includes:

1. Being present in and with a place

2. The power of place-based stories and narratives
3. Apprenticing ourselves to outdoor places
4. The representation of place experiences

Space here permits an exploration of how the data relates to numbers 1 and 3 above (since numbers 2 and 4 would require a more extensive theorisation of the role of texts, narratives, and representations; see also Ross and Mannion 2012 for related argument on these aspects where curriculum making itself is conceived of as a form of dwelling).

We found that planning with place in mind was easier for teachers who had spent time accruing a deeper relationship with the natural places visited, a view supported by Martin (2004). More expert outdoor teachers were able to explain how they did this more comprehensively, while novice outdoor teachers found they needed to learn new dispositions or orientations to place. In line with Ingold (2011), we found evidence that supported the idea of outdoor curriculum making as a form of dwelling: a coming together of teachers, learners, generations, *and places*, and, through this coming together, relations were re-made (see Ross and Mannion 2012). One might suggest that changing the place for education (in this case, from indoors to a natural setting) was a form of interruption in the ways in which the normal everyday school curriculum was socio-materially assembled. There is scope, therefore, for understanding curriculum making as requiring a form of interruption demanding new forms of attention and response to place.

Place-responsive Enactments

When enacting excursions, the ways in which teachers responded to natural places and how they saw themselves in relation to these places continued to be a core theme in our analysis. Teachers noted that some of the key factors in perceived excursion success were how confident, willing, motivated, and enthusiastic they felt about teaching in nature. Other teachers saw themselves as 'outdoor people' (PT) in their non-professional lives and regarded this as a factor.[ix] Another comment captures the sense of challenge faced by some: "Don't be naive to the reality that it is a scary prospect for many teachers!" (PT). Importantly, all teachers were quite concerned to take account of the settings in nature in their excursions but did this in place-specific ways:

> ST: Hopefully with this [visit] they're going to get that added thing that we were all talking about, the sense of kind of ownership and the connection with the place that it's going to add something else to it. (Novice Outdoor)

Post-excursion, one teacher looked at her efforts at teaching outdoors heretofore as being "very mechanical and dull" involving her in solely instructing pupils in the technical aspects of scientific procedures: "This is a quadrat, this is how you use it and this is what I want you to do". After this development project, she suggests a new approach: "the importance of the place in itself is now something I would want to cover if I took a biology class out" (ST).

This teacher reflected on her intrinsic valuation of nature: "The value of nature itself is the greatest hurdle [for schools] when looking at [it] on a larger scale but I feel it is the most important factor". Two teachers saw the natural setting as key because some "activities could not have taken place indoors" or "can only be done outdoors". More expert outdoor teachers noted that a teacher's *knowledge* of the place was important: "Teachers should be able to appreciate the area and share this with the

children." A number of teachers viewed their role as key in bringing together educational purposes, teaching strategies and place elements. One primary teacher put it like this:

> I always think: WHY – am I doing this, WHAT – do I want to get from it, HOW – is it relevant, WHERE – is most appropriate? (Novice Outdoor, Excursion Review)

This evidence suggests that this collaborative form of professional development for nature-based excursions demanded a responsive approach in teachers to these places that was striking. This finding supports Day et al's (2007) work on teacher's own life *orientations* being important guides for practice; in this case, orientation to place was a dominant guide. DeWitt and Osborne (2007) list a number of ways in which teachers can engage students effectively in learning on field trips. One of these is the need to orient *students* to the setting. Unsurprisingly, perhaps, our findings suggest that before teachers attune pupils to a place, there is likely a need to develop relevant new personal and professional orientations in teachers themselves towards those same places. This adds weight to the idea that place-responsive pedagogy requires an apprenticeship to place by the educator (Wattchow and Brown 2011). In these teachers' accounts of engagement in curriculum making, we found processes that appeared to us as a form of apprenticeship to place that spanned both the planning phases and the enactment of excursions. We noticed that these processes were differentiated by teachers' levels of expertise and experience in teaching in outdoor settings.

Interviews and reviews of excursions also showed that teachers sought to be responsive towards *pupils' experiences of the places visited,* and *towards the place itself and the contingent events that emerged*. Teachers said they valued opportunities

for pupils to respond to natural places through multi-sensory, memorable experiences that generated a greater degree of enthusiasm, attentiveness, and focus (in single subject and inter-disciplinary study). Indeed, the more memorable experiences recounted were those that emphasised place-specific elements. Examples included encounters with wildlife, the feel of plants, the sense of openness in mountain landscapes, and listening to the sound of wildlife. Other examples included opportunities for physically interacting with places: jumping across streams, climbing, investigating riverbanks, or splashing each other. This primary teacher recounts one of the many contingent memorable events in our data that involved inter-species encounters:

> Two children disturbed an adder […] - so we've called it Taigh an Nathrach ['House of the Snake' in Gaelic]. [Pupil name] heard its warning hiss and looked down to see it curled up in a ball near his feet. He took a step away and watched it move off underneath the stones of the house site. […] They were able to describe it as very dark, almost black with a white patch. Everyone else is very jealous of them! I think it was the highlight of their day. (Experienced Outdoor, Excursion Report)

Teachers valued pupils' emergent and participatory engagement while on excursions, but also valued their input in the planning of trips. For some teachers, outdoor tasks had been more clearly negotiated with pupils. One primary teacher wrote:

> Normally, I would have started with books and timelines, but I think the children have come up with many more questions. (Excursion Review)

The teachers all valued activities that were more pupil-directed. They all reported that fun, less time-limited, open-ended, yet purposeful tasks were an important factor on excursions. For teachers, having a sense that pupils were learning and enjoying the event was particularly impactful. One teacher, for example, noted: "the positive effect on the pupils' behaviour, interest and excitement at being

outside". Mygind (2009) too found outdoor contexts afforded less enmity, boredom and disturbances among pupils. All our respondents noted improved relations among pupils, and between teachers and pupils, and improved engagement by pupils with additional support needs. Other teachers reported improved tolerance among class members and greater respect for individual differences.

Of particular interest was that all teachers identified the importance of feeling equipped to handle and respond to *contingencies* as they arose in the places they encountered. Examples included: changes in the weather or seasons, local access issues, chance encounters with wildlife or wildflowers, pupils' needs, opportunities for discussions about physical elements of the landscape "as these came into view" (PT), and noticing natural habitats or natural phenomena such as erosion. Novice teachers' experience of the challenge of handling contingencies was more accentuated as a learning point:

> T 1: I think our first [visit] was [about learning] how to … expect the unexpected.
> T 2: Well, you can go out there and do all the site visits in the beginning, but something will always happen that you didn't plan for.
> T 3: And then you have to go with the children as well.
> T 4: You've got to expect it so that you're not *fazed* by it when you're *faced* by it…
> T 5: So that you, you then do have the confidence to drop what you, somebody else is doing and just go with a child or children to take their experience further. (Workshop Three, Focus Group)

Whilst some formal planning was seen as important, teachers noted that *spontaneity* was also important. One said: "You have to have prior knowledge of the site and allow for flexibility when you get there [since] nature has a habit of changing" (Workshop discussion). Another said: "In a small school like ours, where we try to cover all areas outside, planning is essential, but also allowing the project to develop on its own" (Workshop discussion). Another teacher considered flexibility to

be important in all teaching but especially so when outdoors: "*flexibility* is important. In an outdoor environment things may happen you haven't planned for. You have to be willing to go with the flow and use the opportunities creatively." Teachers did plan for pupils' purposeful activity, but these were never the *only* activities undertaken, nor were they always completely predictable.

In this study, the teachers' experiences of excursion planning and enactment influenced (and were in turn influenced by) their sense of professional competence, self-efficacy and their experience of the pedagogical choices made. Teachers reported that through their chosen strategies they sought to take account of natural places as a key ingredient in excursion making. Perhaps as a baseline requirement, teachers need to be willing, motivated, enthusiastic about learning to develop their expertise as these teachers all were. But this project has shown that teachers can further develop their expertise in this area through (a) spending time in nature as part of planning and enacting excursions, (b) getting to know a specific natural place and developing their own relations with this place, (c) devising place-responsive teaching approaches that included pupil-directed, fun, less time-limited, open-ended, yet purposeful tasks, (d) actively making contingent responses to places with their pupils, and (d) collaborating in these efforts and reflecting on their import with other teachers. We suggest that these empirical findings can be taken as supportive of a theory of place-responsive pedagogy that we flesh out below.

Place-responsive Pedagogy

Drawing upon the empirical findings (above), we wish to delineate a theoretical contribution we shall call place-responsive pedagogy. At its core*, we suggest place-*

responsive pedagogy involves explicitly teaching by-means-of-an-environment with the aim of understanding and improving human-environment relations. We see place-responsive pedagogy is one element in a wider process of curriculum making that emerges through the *intra*-activity (Barad 2007) of (i) educators' own experiences and dispositions to place, (ii) learners' dispositions and experiences of place, and (iii) the on-going contingent events in the place itself (including the presence and activities of other living things).

At a practical level, we suggest place responsive pedagogy requires in educators a degree of flexibility, creativity, a recognition of differences found in the ecological and social domains, and the ability to respond to places and the entities found there via the contingent facilitation of pupils' first-hand experiences. Our data analysis suggests it might be important to slow down the pace of pedagogy (see Payne and Wattchow 2009), and to accept that teachers' and pupils' orientations to place may need time to change. We suggest that place-responsive pedagogy can be supported by opportunities for collaborative planning among teachers, and through teacher-pupil interactions in outdoor natural places that are flexible, contingent, open-ended, yet purposeful through being for the aim of understanding and improving human-environment relations. This is supported by Bonnett's (2009) affirmation of the value of bodily engagement for knowledge generation through sensory experiences in nature by responsible-responsive actors – actors who are not mere spectators but are involved in the world through perceiving, experiencing and acting in it in the midst of other agencies.

Importantly, we suggest place-responsive pedagogy is based on a view that place plays a key role in any educational endeavour alongside social factors. One way to theorise place-responsive pedagogical events is as emergent assemblages. By this

view, place-responsive pedagogy is enabled as educators and learners respond to emergent changes and differences found in a unified relational field (Ingold 2000) of self, other people, and the environment. Within this framing, teachers can play a role in curriculum assembling, but other entities, such as the weather and other species, will play a role too.

Our analysis of the data challenges the conceptualisation of nature-as-pristine-wilderness separated from culture (Cronon 1996); we saw the relations and interactions of teacher, pupils and places as examples of how culture and nature interact coextensively and contingently. We derive that place-responsive pedagogy might best take *as a starting point* a co-extensive view of nature and culture within a process ontology – an awareness that people, places and activities are interconnected processes (Bennett 2010).

One might argue that *all* teachers' (and pupils') activities of curriculum making as entangled or enmeshed (Ingold's term) with the socio-material environments in which they plan and work. If this is the case, one could further argue that teachers need no development to be place-responsive! However, for us, at its core, place-responsive pedagogy, demands that teachers *explicitly* teach or faciliate learning by-means-of-an-environment (whereas teaching in a non place-responsive way would be to fail to notice, or to actively ignore our socio-material entanglements). In place responsive pedagogy, following (Karrow and Fazio 2010), teachers need to understand that curriculum making requires places to be engaged with; thus, the places of the curriculum are not a derivative of experience to be reflected upon, but are open regions within which entities that learn come into appearance. Drawing on Deleuze, Sellers (2009), similarly suggests that curriculum needs to be considered as a 'milieu of becoming' wherein the assembled entities

change as they expand their connections to each other and to new entities. Perhaps there is scope here to consider place-responsive pedagogy requiring such a milieu. After Sellers (2009), this work may involve a deterritorialisation of the curriculum since it opens up any intended curriculum outcome or experience to (literally) unexplored material and discursive territorial assemblages and "unexpected, disparate, productive connections towards creating nascent ways of thinking and learning-living" (Sellers 2009 p16).

Place-responsive pedagogy, therefore, can be aligned with emerging post-humanist lines of thinking and theorising that attend to the socio-material which we consider a critical feature of emerging debates in environmental education about how to change human-environment relations. Indeed, after Rautio (2012), if we acknowledge teachers' experience of differences within natural places as having the potential to disrupt the common sense understanding of agency in curriculum making, they may also better foster an "openness to the serendipitous agency of one's material surroundings – human as well as nonhuman and also inanimate" (Rautio 2012 p9).

In summary, our sense is that place-responsive teachers need to explicitly attend to the role of the places – the socio-material contingent events, and relations between humans and other species – in their educational endeavours. In place-responsive pedagogy, teachers (in collaboration with pupils and others), as historically embodied subjects, explicitly set out to create new place-based practices and place-relations. We suggest that this involves learning to dwell or inhabit places differently, all the while accepting our shared immersion in the world (see Ross and Mannion 2012). The implications of place-responsive pedagogy for curriculum design are considerable with relevance for all kinds of education / environmental education, but

perhaps particularly for education in outdoor, natural environments (for example, forest schools, nature kindergarten, *udeskole*).

Conclusion

Our article set out to draw upon selected data from a small-scale, in-depth study of teachers' experiences of planning and enacting nature excursions. The analysis was used to support a theorisation of place-responsive pedagogy. We argued that this approach requires paying explicit attention to place in the planning and enacting of curricula based on a process ontology. Our contribution here does not comprehensively delineate all aspects of a practice of place-responsive pedagogy – to do so would ironically be impossible since it will inevitably be socio-materially located some 'where'. We should also bear in mind that our analysis will likley reflect the experience in industrialised western world contexts where nature excursions have 'local' cultural meaning.

Clearly, further research into the lived experiences of teachers and pupils will help us better understand how place-responsive pedagogy might be developed. We wonder if pupils taught by 'more place-responsive' teachers also learn to be place-responsive in their own lives. We wonder if there are any identifiable features of place-responsive teaching strategies, differences between diverse cultures' experiences, or stages of teacher expertise in how they become more place-responsive. We also wonder how this relates to pre- and post-visit indoor classroom practice, to pupil experiences and outcomes. How might this approach address the more critical ends of environmental education? Further research would also be warranted to explore the connections with teacher biography.

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We already know much about teacher education and professional development (Garet et al 2001, Guskey 2002, Joyce and Showers 1998) upon which to build better programmes to develop place-responsiveness in teachers. Firstly, teachers will likely need support to understand the effects on their role of taking this approach. Ross and Mannion (2012 p312) suggest that "curriculum making is precisely the process of the coming together of teachers, learners, generations, materials and places, in order to remake these relationships". To do this, Ross and Mannion's (2012) contribution suggests teachers need time to work in a non-representational way within this rich vein between the intended, planned and lived curriculum, recognising the implications of actions embedded in a world which is on the move. Secondly, while teachers do play a key role in assembling curricular experiences – they are key players when difference arises through lived transactions within places – they are not the sole agents of curriculum making. Place-responsive curricula as lived are brought about by a co-authoring or intermingling of the human and non-human via teachers' (and pupils') responsiveness to a changing and contingent environment. Thirdly, familiarisation of teachers with a place, while a useful starting point, may not be sufficient. Teachers' own orientations towards places and their own professional growth appear to need to be connected up *as and while* place-responsive pedagogies emerge *through opportunities for collaborative teacher development* and *practice with learners*. Lastly, we propose that flexible, creative, and place-responsive teaching approaches devised to meet environmental educations ends will usefully emerge through embodied experiences in places based on consideration of the ontological view of nature and culture as coextensive and contingent.

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Notes

[i] In Scotland, the nature excursion is formally repositioned as one approach to learning beyond the classroom alongside visits to zoos, museums, farms, the urban environment and residential trips to foreign countries. 'Outdoor learning' is now used in Scottish policy perhaps to distinguish it from the term 'outdoor education' which traditionally was as a form of co-curricular pursuits-focused residential experience (Higgins and Loynes 1997) using adventure-based experiential approaches to personal and social development.

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[ii] The NNRs of Scotland are in the care and management of Scottish Natural Heritage (SNH), the funder for the project. SNH manage NNRs to serve the primary purpose of conserving natural heritage, but reserves must also "provide opportunities for people to visit these special places, come to understand them better and enjoy their natural heritage to the full" (Scottish Natural Heritage, 2003, p4).

[iii] We use the term 'novice outdoor' to refer to teachers who were new to teaching outdoors in nature but may have had extensive experience teaching in more traditional settings. Similarly, 'experienced outdoor' refers to those teachers who had regular routines of going out with their pupils.

[iv] In the end we collapsed the data on 'ingredients' under 'factors' since they overlapped and can be disseminated more meaningfully that way.

[v] ST stands for secondary teacher. Where teaching stage is not known the code 'T' (for teacher) is used. When expertise level is known this is also indicated.

[vi] PT stands for primary or elementary teacher (ages 5-12).

[vii] Where teaching stage is not known the code 'T' is used to denote a teacher or the word 'teacher' is used in text.

[viii] When expertise level in outdoor facilitation is known (from self-reports) this is also indicated.

[ix] One teacher, who often used her leisure time to be outdoors, had never taken her pupils outside for learning beyond the school grounds in fifteen years of teaching but wished now to change this.

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