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The Hare and the Tortoise go to Forest School: taking the scenic route to academic attainment via emotional wellbeing outdoors

Mel McCree [a], Roger Cutting [b] and Dean Sherwin[c]

[a]Department of Education and Childhood, University of the West of England, Bristol, UK; [b]Department of Education, Plymouth University, Plymouth, UK; [c]Education Project Office, Wiltshire Wildlife Trust, Devizes, UK

ABSTRACT

This paper presents a longitudinal mixed methods study tracking 11 children (aged 5–7 on entry), defined as disadvantaged in multiple ways, i.e. social, behavioural and economic. They attended weekly Forest School and outdoor learning sessions over three years. The study investigates the project's impact on the children in terms of their academic attainment, wellbeing and connection to nature. The children's attendance and academic attainment improved in comparison to their non-participating peers at school. The findings emphasize the importance of how social free play outdoors and relationships with a particular place can establish emotional resilience and self-regulation. The children's social development and emotional wellbeing were supported by regular outdoor sessions alongside skilled practitioners. The outcomes demonstrate important links between emotional learning and wellbeing developed in outdoor settings and academic development, raising questions about interventions for young children with disadvantaged backgrounds.

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Introduction

In Aesop's Fable 'The Hare and the Tortoise' the two animals compete in a race. The boastful Hare loses by rushing and becoming distracted, whilst the Tortoise wins by going at his own measured pace. For schools, supporting children's development can seem like a race in the current context of pressures from government and hare-brained policy changes. Children feel the pressures of this race and their unequal status within it. In this paper, we discuss the impacts of a three-year Forest School and outdoor learning project for disadvantaged young children in a UK primary school. Much like the Tortoise in Aesop's Fable, the project's ethos included going at the children's own pace within affective, restorative learning processes (Roe & Aspinall, 2011; Rose, Gilbert, & Smith, 2012). Claxton (1997) wrote about 'hare-brain and tortoise mind', focusing on the effectiveness of slower, creative forms of learning present in what he calls a tortoise-like undermind, as compared to a hare-like 'd-mode' of default, purposeful thinking.

> We know that the brain is made to linger as well as rush, and that slow knowing sometimes leads to better answers. We know that knowledge makes itself known through sensations, images, feelings, inklings as well as through clear conscious thoughts. To be able to meet the uncertain challenges of the contemporary world, we need … to expand our repertoire of ways of learning and knowing to reclaim the full gamut of cognitive possibilities. (Claxton, 1997, p. 201)

CONTACT Mel McCree mel.mccree@uwe.ac.uk Department of Education and Childhood, Faculty of Arts, Creative Industries & Education, University of the West of England, Frenchay, Bristol, BS16 1QY, UK

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We consider the tortoise's slow approach as a helpful analogy, for the study described is a longitudinal evaluation of the project's impacts upon the children, specifically their wellbeing and academic development. As an introduction, we describe the theoretical context and the impetus for the study. We then present the methods and findings. As a complex, long-term intervention, there are multiple findings which we summarize and discuss throughout the paper. We conclude by looking at implications.

Background

There is currently much interest in the impact of outdoor learning upon academic attainment and wellbeing, with a growing demand for evidence (Rickinson, Hunt, Rogers, & Dillon, 2012; Department for Education and Skills (DFeS, 2006). The study described in this paper explores the idea that, for disadvantaged young children, supporting wellbeing through outdoor learning can facilitate improvement in school-readiness and achievement (Dillon & Dickie, 2012). This study aims to provide data to authenticate or to refute this suggestion by evaluating the longitudinal impacts across a project's extended time frame. By 2013, to our knowledge, no similar study over this length of time had been undertaken. However, during the project, the body of evidence to support long-term restorative outdoors intervention improved (Malone & Waite, 2016) and further research is emerging. A recent four-year study from Norway examined the relationship between the amount of time young children attending daycare spent outdoors and their cognitive and behavioural development. This found that time spent outdoors in pre-school may support children's development of attention skills (Ulset, Vitaro, Brendgen, Bekkus, & Borge, 2017).

Fiennes et al. (2015) provide a systematic review of the evidence base relating to the effectiveness of outdoor learning recommending that interventions, contexts and outcomes be better specified so that the evidence might be collated and used more effectively. Other conclusions in the review were that almost all outdoor learning had a positive effect on the defined outcomes, and that longer term interventions were more effective, as well as those with good preparation and follow-up. This paper responds to the recommendation and strengthens these conclusions.

A recent international report draws together five key evidence reviews and a structured sample of further reports on children learning in natural environments (Malone & Waite, 2016). The authors identified the type of long-term impacts that projects, such as the one we describe, have on children's quality of life. They placed a focus on impacts around 'physical health and wellbeing and "character capabilities" such as application, self-regulation, empathy, creativity, and innovation, and their capacity to be successful learners' (Malone & Waite, 2016, p. 4).

Study aims and theory of change

Aims-setting was based upon a theory of change or logic model used to clarify intervention aims, intended outcomes and assumptions about context, participants etc. This ensured the evaluation criteria corresponded to the desired outcomes of the stakeholders; the school and funding educational charity. These outcomes included overall academic performance in a set of National Curriculum (England) subjects, including Mathematics and English. They included wider social parameters such as metrics on attendance data and evaluative data from parents and teachers on wellbeing and attitudes to school and learning. An 'outcome' is in itself a contested term and perhaps ill-suited here, seeming to reflect a 'coarsening of our imaginings of childhood' (Butcher & Andrews, 2009, p. 36). With multiple disadvantage factors influencing the children, we acknowledge the complexity of their lives and the related intervention. Therefore, we designed a holistic study of impacts which drew upon the various measured factors alongside deeper observation and interpretation. From the position of regarding the whole child as a competent social actor in relation within wider common worlds (Taylor, 2013), we sought to understand how the children felt and saw

their world and acted within particular contexts. Therefore, the theory of change considers how the project has an impact on the children, specifically the ways in which nature connection, emotional wellbeing and academic development are manifested through outdoor play and learning, in addition to the ways in which they are perceived by others. Study questions were:

(1) Do changes relating to wellbeing and academic development occur?
(2) Can factors that influence the relationship between outdoor experience and academic performance be identified and associated with the project?
(3) Are changes in wellbeing & academic development recognizable by the school?
(4) What are the significant changes over the longitudinal span of the project?

School context

The school studied was a small county-town school with 320 pupils on the school roll in 2015 with an age range of 5–11. Situated in a rural county in south-west England, the pupils included a social mix of families, with 26.3% eligible for Free School Meals (FSM) (similar to the national average of 26%) and 12.8% of pupils receive Special Educational Needs support (similar to the national average of 13%) (Department for Education [DfE], 2015).

Project context

The project was developed by the Wildlife Trust Youth Wellbeing team, who have a successful legacy of developing outdoor projects that reach children who may not access services otherwise. Their work spans both formal and informal learning, both in and out of school. This project was year-round, including school holidays. They visited the same local woodland each week for three years, with additional full days in holidays at other Wildlife Trust reserves. Activities were based upon a Forest School model (Austin et al., 2015). They included playful, place-based and nature-based, including scavenger hunts, wild art, basic whittling, creative crafts, shelter building, tree climbing, 'running around games', making bird boxes, foraging, conservation activities (coppicing), campfire cooking, willow sculpture, playing with mud and playing in a stream. The children chose from a variety offered each week. They didn't have to stick with their first choice, they could move around or create their own activity. This included lots of free open-ended play using the loose parts and affordances of the woodland. Making hot chocolate with a fire-based kettle was the one consistent activity. After each session, they noted anything in particular they wished to do next week. For the last term, the lead practitioner lessened resources so the children entertained themselves with what was there, stimulating further creativity, knowledge and skills.

Methods

Sample

The participants were the children in the cohort, their teaching team, the project practitioners and some parents. The study closely followed 11 children who took part in the project, aged 5–7 on entry to 7–10 years old on exit. Prior to the study, the headteacher chose the children for the project as those 'struggling to thrive' and seen as likely to underachieve (Head, Y1). The head teacher further defined them as disadvantaged in that they were 'economically and emotionally disadvantaged and with special education needs (including behaviour difficulties)' (Head, Y1). For example, all had additional help in school and FSM which the government uses for comparative data. Their home lives included known elements of stress, trauma and complex family relationships.

Ethics

Given the small size of the pre-existing group of children (13 beginning, 11 throughout), the design was limited. All the children, parents and relevant staff were invited to decide if they wanted to participate. Full consent was confirmed prior to the study from all participants, in line with the ethical requirements of consultancy Free Range Creativity. Ethical guidelines from the British Educational Research Association (BERA) were followed. Parents were consulted regarding their children's involvement and the meaning of informed consent. Liaison support from a trusted pastoral member of staff was offered throughout to ensure parents' ongoing awareness and a safe way to raise concerns or initiate withdrawal. An initial discussion session with the children developed understanding about participation, consent and withdrawal. Children who joined the project after this date were not part of the cohort, and children who left before the end of the three years were removed. Regular check-ins with the children ensured that they knew they did not have to engage with the researcher on any given day, and that they could withdraw fully if they wished. Children sometimes exercised their rights through silence, not answering questions, being otherwise engaged and not wanting to be interrupted by research activities, all of which were respected.

Design

The design applied mixed methods and adopted elements from the child-centred Mosaic approach (Clark & Moss, 2001). We valued the children's agency and wished to include their perspectives, interpretations and self-reports. All the children were interviewed every year using child-centred methods and involved in regular session evaluation. Two in-depth case studies were compiled from further twice-yearly interviews with two children randomly selected. For the interviews, a small den was made in school to create a special space so the children might feel freer from their everyday environment and behaviour. Within the den, the researcher used several activities, session documentation and prompts. For example, drawing with prompts to review the year, noting memorable experiences, high and low points, and creating a personal map of the woods. Taken together with ongoing discussion, these prompts encouraged the children to share verbally and made their meanings more visible. This led to interesting discussions surrounding their choices and meanings. Captions were added to encapsulate how the children said they felt about the experiences or other observations. Data analysis was informed by the 'Draw and Write' method (Williams, Wetton, & Moon, 1989) mainly for illustrative purposes due to the challenges in the method posed by the subjective variation of interpretation. The data contributed alongside observation field notes towards the thematic analysis.

Evaluation events in the school were used employing a two-stage Mosaic approach of community reflection and participation (Gallacher & Gallagher, 2008). Parents were hard to reach and achieved a low questionnaire response rate ($n = 3$ at entry, $n = 0$ at exit). They were positively involved in a halfway evaluation event, reflecting on the emergent findings. Semi-structured focus groups continued were held with parents at this halfway point and at entry and exit, where they reflected with their children on significant experiences or perceptions as to how their children were responding to the project.

Baseline and post-project questionnaires were collected at point of entry (2013) and exit (2016) from children, parents and staff. The children completed a child-appropriate six question 'smiley' questionnaire about their project perceptions and experiences, with writing assistance, at entry and exit ($n = 11$) and verbal comments were noted. The children's class teachers and support staff completed questionnaires ($n = 7$ at entry and exit) regarding their perceptions about the particular children in their care. Staff focus groups were held termly.

Leuven scales were used each session for wellbeing and involvement (Laevers, 2005) alongside an in-house engagement measure. Qualitative data sets included regular fieldwork observation, focus groups, questionnaires and interviews. Quantitative design allowed for semi-control groups in the

school on attendance, attainment and nature connection, affording comparison with peers not receiving the intervention, the school and with national data. The Connection to Nature Index was applied on exit (Cheng & Monroe, 2012). Quantitative data sets used mean averages for comparison in line with the school records and national sets.

The combined qualitative data were analysed thematically using grounded theory (Strauss & Corbin, 1998). The mixed method approach allowed for triangulation and balanced strengths and limitations, improving validity and reducing bias.

Results: quantitative observation measures

Wellbeing, involvement and engagement

Wellbeing and involvement were observed using Leuven scale measures (Laevers, 2005) which are trusted and widespread in early childhood practice. The tool is based around these two key indicators on Likert scales of 1 (lowest)–5 (highest). Involvement refers to the degree to which a child engages in activities and is therefore an important component in learning processes. Wellbeing refers to both a sense of being at ease with ones self and from being free of emotional tensions and this in turn relates to self-confidence and self-esteem (Laevers, 2005). Data sets were collected as part of weekly in-house monitoring by the session leader and the researcher, alongside a comparative measure of engagement on a 1–5 Likert scale.

For brevity, we have summarized using mean average scores for the cohort ($n = 11$) over three years and ranges of child per year mean averages. High levels of wellbeing (4.2), involvement (4.3) and engagement (4.8) on the sessions were sustained throughout the project. The ranges were from 3.8–4.9 wellbeing, 3.8–5 involvement and 4–5 engagement.

Nature connection

The validated Connection to Nature Index (Cheng & Monroe, 2012) is a 16-point closed questionnaire with a 4-factor trait measure of (i) enjoyment of nature, (ii) empathy for creatures, (iii) sense of oneness and (iv) sense of responsibility. Responses are on a 5-point Likert scale and scored with a mean average. A higher score of 4 or 5 indicates a strong connection to the rest of nature. It was recently field-tested with children aged 8–12 ($n = 76$; Bragg, Wood, Barton, & Pretty, 2013). Study children were too young on entry (aged 4–7) for available field-tested and validated questionnaires. It was used on exit with the cohort ($n = 10$ returned) and school year groups ($n = 95$ returned). In the cohort, 10% (1/10) scored below the RSPB national average of 4.05 and 70% (7/10) scored 4.5 or over. The mean average differences between the school (3.9, $n = 95$), the study cohort (4.5, $n = 11$) and a national survey (4.05, $n = 1200$) (Bragg et al., 2013; RSPB, 2013) indicates that the intervention strengthened the children's connection to the rest of nature.

Academic attainment and attendance

Data drawn from teachers' assessments (used for government reporting) showed that the cohort made a variety of academic improvements, with good progress relative to their position and perceived capabilities, and continued improvement in all three of the subject areas (reading, writing and mathematics). Due to UK government-led changes in assessment, results data were tracked from March 2015 to July 2016 and not before. There are three school-based assessment levels related to key performance indicators of emerging (0–59%), expected (60–79%) and exceeding (80%). Progress was measured as a shift from emerging to expected level or above.

The cohort was compared to their peers (including like-for-like e.g. FSM and pupil premium (PPG) recipients) and their year groups. Writing attainment progressed and improved by 18% (compared to 6% in the total year groups and 7% PPG peers). Reading attainment showed improvements of 27%

(compared to 13% in the total year groups and 22% PPG peers). Maths attainment both showed improvements of 27% (compared 15% in the total year groups and 11% PPG peers). We cannot attribute any sole causality to the project, yet the study cohort overall had a better rate of progress than expected, and fared well in comparison to their peers. Improvement is to be expected as part of attending school and maturing and the findings do need to be seen in the context of improved attainment across the whole school.

Attendance data were tracked from a control year to the end of the project, showing a positive difference for the study cohort (2.4% mean average increase) compared with the whole school (1.1% mean average increase). Attendance is a challenge for the cohort and their peers. Cohort attendance was below the whole school in Year 0 (by cohort 94.3% vs school 95.6%) and Year 1 (95.9% vs 96.4%), peaked above in Year 2 (97.7% vs 96.7%) and settled at a similar level as the school in Year 3 (96.7% vs 97.2%). This contributes to a recommendation that the project needed to be long term to make a sustainable difference. The findings provide further corroboration of the wider evidence base within the study, showing a positive impact on attainment and attendance for the study cohort.

Findings and discussion: qualitative analysis themes

Data were analysed both from session-based fieldwork and school-based interviews, focus groups and Mosaic approach events. The initial session themes from Year 1 began with *nurture, physicality, shared time and space, the adult role and freedom to choose*. The following themes then emerged, deepened and were refined and renamed in Years 2 and 3 (shown with 'quotation marks' below). *Nurture, physicality and shared time and space* remained important throughout. *Shared time and space* became in part 'free social play' and *physicality* became 'physical adventure' as intrinsic motivation for roaming and curiosity increased. *Freedom to choose* became 'choice and independence'. Some themes faded as others emerged, such as 'the adult role' theme. In Year 1 the relationships to the adults became more trusting and woven into the fabric of the sessions, then the role faded in significance as the children developed intrinsic motivation, independence and self-regulation. The children became 'socially confident learners' engaged in 'nature discovery' in their own self-led journeys, needing adult guidance less and less to spark their interest and curiosity. Importantly, the theme of 'self-regulation and resilience through emotional space' clarified in Year 2, evolved out of *shared time and space* and *the adult role*. This presents as significant in how the children used the sessions to navigate and provide for their own wellbeing. These themes are inter-dependent both in their nuances and in the school-based themes such as 'behaviour perceptions' and being 'wild experts'. Other themes observed within the school were: 'new perspectives' and 'whole school culture change'.

Session themes

Establishing self-regulation and resilience through emotional space

A longitudinal project by its nature provides a great deal of data. For brevity, we concentrate our discussion on the theme found to be the most significant; 'self-regulation and resilience through emotional space'. 'Emotional space' here means the provision of a physical space and time in which the children are free to be themselves and express their emotions. Reports from the children, session staff and project practitioners stated that this was the most constructive contribution to their wellbeing, and the children demonstrated a clear development in this area over time. We regard this important finding as a meta-theme, with others as vital ingredients towards the children achieving greater self-regulation and resilience.

The children expressed a strong attachment to attending the project and evaluated the experience as positive. However, negative emotions featured strongly in how the children said they often felt. For example, using a visual method that asked the children to choose a 'jelly-bean

person' that best represented them provided a clear majority response for feelings of anger. Figure 1's illustrative quotes emphasize this state of being. It is noteworthy that 3 out of these 4 children were known to be experiencing challenging life circumstances at this time.

> Sometimes I feel angry, especially [at] others.
>
> I'm angry and bored.
>
> Mr Angry says 'I want a turn, I want a go!'
>
> They're getting on my nerves.
>
> (Children K, J, B and H, Y3)

The children found ways to self-regulate within the sessions, for example, Child I through fantasy-play and den-building, and Child A through tool-mastery and social physical play. The different choices they made reflected their different characters and needs, and in turn the different meanings they derived from the experience. Children exhibited challenging behaviour at times, particularly in Year 2, and were excluded from the sessions on one or two occasions. The source of the problems was similar for both; their relations with other children, yet for different reasons. Eventually, the sessions became a safe space where they played out their emotions and overcame social conflicts. These findings emphasize the importance of this social time with adequate affordances in place, both physical and emotional, in order for children to find ways to develop positively, inter and intra-personally.

Figure 1. Jellybean people sharing angry emotions.

It was not unusual to present attachment disorders or a need to play out dysfunctional domestic situations. As time went by, the children knew they had the space and permission to express themselves in such ways and to find their own way to self-regulate; they were learning the parameters of what was acceptable.

> Coming out … has helped me manage my anger. I now know that I can just go and sit somewhere for 5 minutes. I now go outside more. I hadn't used to. I go to the park and take my friends. (Child I)

In this way, the children reflected that such emotional time and space through outdoor inhabitation (Ingold, 2008) had helped them in and out of school. When they had a negative response, they were able to take some time, seek help, or use other coping strategies. Importantly they knew they could bounce back and that being outdoors would help them. The children appreciated the chance to reflect and the healing they felt from time spent well in the woods; 'I love my life. I love nature … It's very peaceful here' (Child D, Y3). There were many instances where children would do something alone rather than with the group, often at session starts, e.g. 'I'm doing time out. I'm digging alone. That's all I want to do' (Child H, Y2). They would seek one-to-one attention from an adult, take their space and then re-join the group once they felt able, as illustrated in this dialogue with the adult practitioner.

> – When we get into the woods, please can I go and sit somewhere by myself for five minutes?
>
> – Of course. Why would you like to do that?
>
> – Because this is the only time I get some peace and quiet. (Child F, Y2)

The practitioner noted that the majority of the challenging moments were at the end of sessions and in the minibus home. The ending of the valued sessions remained a flash point for the children even into Year 3, suggesting that they appreciated time to unwind from their often complex lives, and found some endings difficult. Regular visits to the same woods provided a vital familiar place to process their emotions and enjoy a stable relationship with people and place.

Nurture

Firstly, creating stable ongoing relationships with a skilled, attuned practitioner lay a strong foundation for the children to feel nurtured and thrive. Further, ensuring that the basic needs of the children were met remained a priority throughout the project and a vital part of a positive session, such as bringing spare clothes for children who didn't have enough to keep them warm. When the children were first getting used to being outside, the popularity of hot drinks and snacks around the fire was not surprising yet essential. There was a tangible transformation in their behaviour when their basic needs were met. A hot meal on a cold day and a welcoming base camp area enabled the children to feel secure in their new environment and its regular provision had a nurturing effect on the group. This simple provision is not to be underestimated. In Year 1, drinking hot chocolate was the most popular activity for all the children and held significance throughout. There were only a few sessions at the end of the project in Year 3 where the practitioner did not include hot chocolate and the children commented upon this in their final interviews. By Year 3 it seemed that the children had a solid and positive relationship with, and trust in, the session leaders, the place, their peers and in themselves. It appeared that perhaps some nurture needs were being met with wider species connection. 'I like getting juicy blackberries', said Child C in Year 3. 'Fruit gives you energy and it's free!'

Physical adventure

Over time the children increased their roaming range across the main session site, in parallel with an observable increase in confidence and ownership of the space. They named places or gave them specific associations and regularly initiated exploration to find new secret corners which they could claim. By Year 3 they knew the woods very well and could find their own way around a

large part of them. This confidence and trust enabled the adults to give a wider roaming radius to the children and is in part illustrated by the following quotes.

> Can we go to the place that makes our eyes glitter and puts a smile on our faces? (Child C)

> I want to find some mysterious, messy and beautiful places. (Child D)

> Thank you for bringing us to the woods. (Child C) (Y3)

A final significant aspect of this theme is the physical experience. Physical activities scored highly as the children's first preference and were consistently voted as popular activities in each yearly evaluation. Child A's case study shows his clear satisfaction of the same, regular, repeated physical adventurous play and this was echoed by all the children in their actions each week. Children frequently tested their own bodily limits, and then pushed beyond them. In short, they learnt about their physicality through free play.

Free social play

This theme evolved from *shared time and space* and is associated with 'choice and independence', 'physical adventure' and 'nature discovery'. It is impossible to untangle the presenting behaviours of the children from the affordances of the site and the nature of the sessions. The site had a clear agency and role within the children's play; 'It's a special place because we had fun there and that's for us to remember' (Child 1, Y3). The social experience was important in various ways. Social interactions affected each experience and its learning potential strongly. The need for friendship and positive social interactions was paramount with a strong preference for sharing time and space with friends over other activities. An apparent need to assert positions and leadership was observed in Year 1 group dynamics. In subsequent years, this was still a flashpoint but was mediated most strongly through the children's social play more than adult intervention.

Using loose parts, meaning objects with no prescribed play task, such as a stick, or string (Nicholson, 1971) was a way into nature discovery using creativity and helping cultivate a learning disposition. There was a strong affordance of place in the woodland's highly variable environment, rich in unique loose parts as inspiration for imagination. Physically using a tool or making an impact on the landscape was a creative stimulus, and sparked off narratives and shared fantasy play sessions in groups of children.

> I wanted to make a fort. We found this place … . (Child A, Y3)

> It's really fun here. I'm never going out. It's my house. Who's in my lovely house? (Child D, Y3)

Fantasy play had a strong role. A detailed 'Save the Wild' game developed and brought the children together in co-operation. The opportunity to play and the ability to choose on their own terms had a clear impact on the children's ability to self-regulate and develop resilience and these both relate strongly to the next theme.

Nature discovery

> When I grow up I want to be a slug expert. (Child F, Y3)
> I love feeling the rain on my face. (Child J, Y3)
> I like meeting new friends. Human and animal friends. (Child I, Y2)
> Robins have a special box, different to other birds. (Child I, Y2)
> It was interesting because you can understand all the creatures' lives (Child I, Y2).

There was an element of taught ecological education within the project, although always led from the children's interests or choice of activities such as pond dipping or making bird-boxes. The finding of loose parts stimulated curiosity. Additionally investigating, collecting and taking things home was popular; 'they remind me of all the fun I've had' (Child I, Y2). Child I had a special box and enjoyed collecting small items. She would often take the time to investigate and the rewards she felt from this

process were demonstrated. When asked to choose an experience to remember she chose 'sharing a moment' with a moth she encountered and said 'I felt really happy, special' (Child I, Y2). She often documented with a camera, narrating her observations through questions and reflection. She developed a sense of pride about being a 'wild expert' and becoming a 'socially confident learner'. Within the first half of the project at school, the staff observed Child I making advances in her confidence at school. It is clear that, to some extent, investigating nature was the springboard, confirmed by Child 1 herself, her parents and staff. The child-led sessions in the woods enabled her to thrive.

Socially confident learners

I am a survivor. I never give up. (Child D, Y3)
There's no I in team. (Child K, Y3)
I want to help. (Child B, Y3).

The confidence of the children improved and was maintained within the sessions. Their knowledge and skills increased symbiotically as they became more confident and mature, which in turn helped them to become more responsible, to self-regulate and to gain resilience. This was not without some exceptions, mainly where children had challenging life circumstances or peer-to-peer conflicts. Yet this has a positive interpretation in the breadth of emotions that they felt safe to express within the sessions and, with encouragement, to often work things out with each other. The children became more adept at recognizing their own emotional processes and at acting upon them in a constructive way.

Choice and independence

During the project sessions, the children chose free play, continued where they had left off previously, or participated in offered activities. For example, digging was popular and acted as a springboard for many experiences, as the practitioner scaffolded their involvement and supported their choices and interests. The child-centred aspect of the project led to a culture of self-directed learning and existence. Many children chose to persist with a certain activity or pursuit over several sessions until they reached a conclusion or new level of mastery, with some degree of satisfaction and autonomy, as reflected in this dialogue with the practitioner:

– Can you catch?

– No

– Well learn then

– I will be the Master of Catching … when I am ready (Child H, Y2)

Towards the end of Year 3, the lead practitioner minimized resources and stopped initiating activities, to see what would happen. The children were positive in their freedom of choice; 'can we do anything we want? Wow!' (Child L, Y3) and 'can we do it again next week?' (Child A, Y3). If the children became disinterested, they changed for themselves, and according to their reports, did not get bored. When consulted at the halfway evaluation, all the children stated clearly that they wished to continue the project and demonstrated signs to their parents and teachers of enthusiasm in their relationship to nature. This newfound independence appeared in some ways to translate into their home life: 'I've been to the woods with friends. I've showed them where we sat and made a fire' (Child 1, Y3), aligning to other outdoor play findings (e.g. Ridgers, Knowles, & Sayers, 2012).

School-based themes

Within these themes, we discuss what happened based in the school in relation to the project, how it influenced the children and school staff i.e. culture changes in the school, the change of role and resulting confidence of children.

Whole school culture change

> [The project] has been the inspiration for all the outdoor learning development in the school. (Head, Y2)

There was a significant and considerable culture change within the school, with outdoor learning embraced and championed. The project was the springboard for this burgeoning interest in outdoor learning and a widespread 'Wild' culture change took place in the school. There has been, in essence, a re-wilding of the school. So much so that the Head declared 2015–2016 a Wild Year, reinforcing the access he wished every child to have to learning outdoors. The project may well have had very different outcomes in another school context with less enthusiastic leadership and culture. For this reason, the significance of the changed school culture and staff interests are included in the findings, as both an influencing factor upon the project's success and as a result of the project. The strong theme of culture change meant that it became important to observe the effects on the wider school as well as the children.

From an interview with the head teacher at the halfway stage in March 2015, the distance the children had travelled over the first half of the project had started to become clear to him, through both observation and academic results. The head teacher said he knew the project was working for the children and for the school. By the end of the project, he was still cautiously positive.

> It's not always easy to measure the impact on those involved, but what would the outcomes have been if the children had not been involved so positively? (Head, Y3)

The parents were harder to reach but where they did make links with the project and their children's development, they were direct and positive. One trend identified was that the parents of the study children engaged more positively with the school, as noticed by staff.

Wild experts

Positive changes were visible in the children in their role as 'wild experts' at school and home. The school encouraged the children to share their newfound knowledge and skills with other children, demonstrating knowledge, pride and positivity

> We were talking about King Alfred in the class and I asked if anyone had heard of him. The '[project] four' all put their hands up straight away bursting to tell me … about King Alfred's Cakes, what they were, where you find them, what they are used for and why they are called what they are. They told the whole class. It was really great to see them using what they had learnt and being so positive with it in class to tell their peers. (S1, Y1)

The project had a positive identity within the school and the study cohort informally became 'Wild Ambassadors', able to demonstrate their skills to others. If the study intervention had only used for behaviour management, or was in a setting where outdoor learning was perceived negatively, it is likely that the impact of the children's growing expertise would have been lessened. It is noteworthy that the study itself had an effect in increasing their visibility within the school.

Behaviour perceptions

Within Years 2 and 3, some school staff were surprised by the different behaviour during the sessions as compared to behaviour at school. In other studies (Borradaile, 2006; Roe & Aspinall, 2011), being selected to go to a forest school project for behavioural reasons has had a negative effect. Importantly, Borradaile (2006) cautions against forest school as a tool for behavioural management and segregation within mainstream school, as children may feel excluded. This was not the case within the current study. Roe and Aspinall's research (2011) highlights the rich potential of forest school when the drive for learner achievement is relaxed and the restorative relationship with the setting is explicit. It could be argued, from a position of affective learning (Rose et al., 2012), that the learning potential appears deepened by taking a restorative route into the process.

Teachers had a variety of viewpoints on whether any changes of behaviour were observable in class. The children perceived the two spaces very differently in terms of behaviour codes and acted

accordingly. When asked, they were clear about the difference in settings between project and school time, and about the behaviour codes expected. Child J commented on how new school staff acted when visiting the woods – 'they expect us act like we are in school – it's annoying and boring' (Y3). The head teacher perceived the wider benefits of the project beyond that of behaviour management and intervened to ensure staff that understood the ethos remained on the sessions.

Several of the study cohort had an increase in challenging life circumstances at home in Year 3. There was a visible impact on behaviour and attendance, reported by school and session staff. It was in this year that some staff began to question whether three years was too long for the children to be involved.

> I think Year 3 with the same children was more challenging and that 2 years or changing the group dynamic may have made it an even more positive experience (Head, Y3).

It is hard to say whether their home life challenges or the length of the project had more impact. Additionally, and similarly to the discussion around academic development, it is difficult to isolate parameters such as growing maturity over the time period. However, what clearly arose was a difference in behaviour expectation that became evident over the longer term in that the children did not want to behave in the woods as they did in school.

New perspectives

Bringing project knowledge into class continued to have an impact on their learning in school and helped to offset any negative impact from being selected (i.e. as disadvantaged). When teachers, peers and parents shared 'new perspectives' on the children (Murray & O'Brien, 2005), it effected how the children were viewed. Teachers reflected on how not being able to attend the sessions meant they could not fully understand or integrate the children's experiences into class, or benefit from the new perspectives of seeing the children active in the woods.

Two staff members attended all the sessions consistently and one teacher came out on some of the holiday sessions. These members of staff provided a vital communication bridge between the project and the school, able to help connect the children's lives at home, school and in the woods. For example, a school assistant (S6, Y3), commented when a volunteer came and made 'proper' shelters with the children – 'I don't think I've ever seen [Child D] so animated'. Then, a week later, '[Child D] has asked every day about going back to the woods'. The restorative approach was embraced by the school overall, thereby allowing the benefits of the project to have a greater impact on their school life.

> [The project] has made the staff team aware of the advantages for certain groups of children to well-being and that they need to be in the right place to learn emotionally and socially. Learning outdoors, especially in the natural environment, can contribute towards achieving this. For all children we have seen the benefit of learning in different places and in different ways. (Head, Y3)

Wellbeing visible in school

Teacher observation in school showed improved subjective wellbeing for 6 out of 11 of the study cohort children, using entry and exit questionnaire data. The school staff present on the sessions rated the children higher overall than the teachers who saw the children solely in school. The difference in perceptions, from teachers, session staff and the session practitioners, raises an interesting point about the 'new perspectives' gained by observing children on the sessions. A point of interest is that the staff attending the sessions and therefore observing the children outdoors on the project as well as in school, on average rated each child's final wellbeing 1 or 2 points higher than did the in-school teachers. This suggests that either their higher wellbeing had not transferred to school, and/or was perceived differently. Further, this connected to different expectations and management strategies of behaviour and performance in each space, reflected in the different perspectives on

behaviour held by adults in different contexts. The context of observation and the different experiences from which an informed adult's perspective is gained therefore had an effect upon perceptions.

Teaching staff perspectives

Each year staff involved with the study children attended two or more focus groups. The head teacher was interviewed once a year with regular informal contact throughout. The teachers and assistants with study children in their classes, along with session assistants, completed a questionnaire pre- and post- the project. As part of the entry questionnaire, staff were asked to describe outcomes they hoped for. In the exit questionnaire, they were asked which of these outcomes they thought had transferred to the children in school. The most frequently observed outcomes were increased self-confidence, knowledge about the natural environment and improved social skills. Often observed outcomes were willingness to try new experiences, ability to apply skills learnt in class, improved self-image, self-esteem and increased independence. The least observed outcomes were an ability to learn in a creative way, working with others as a team and academic development through self-belief. Staff were asked whether they could link any improvement to observable evidence of causality in the project. Their responses were:

> The children were definitely more able to express their enjoyment of [the project] to their peers as years went on (greater depth). Children often expressed their experiences and knowledge of how things were done during our own outdoor sessions. (S2)

> As the school has moved towards more outdoor learning, (Child A) has been able to share his experiences with the class, as he had invariably 'done it before' at [the project]. This has boosted his confidence – even more! (S1)

> All of these children's knowledge of the outdoors has been outstanding. So when writing about this, they have found a greater confidence in subject matter which then allows them to focus on the skills involved for writing. I have often used the outdoors for writing inspiration because of [the project]. (S3)

> (Child F) looked forward to [the project] each week. Big improvement in confidence. (Child G) some improvement in confidence in group situations. (S8)

From these responses, it is interesting that the most popular outcome, confidence, is most often associated with enjoyment and happiness, also with knowledge of the outdoors, being outdoors and social needs or skills. This interrelationship provides insight into how the children's confidence is derived. However, not all of the feedback was positive:

> I don't think the children's behaviour or management strategies for them worked particularly well and some children stopped enjoying it because of the behaviour of others. This also set back some children's learning because we had to deal with issues raised at the project. (S3)

> … As he is the only child in the class to go he would often brag about it. Unfortunately that promoted himself and it is his self-obsession that causes problems at school. (S1)

However, most recognized that the changes in wellbeing and academic development within the study cohort were through positive engagement and the championing of outdoor learning. The cohort was encouraged to demonstrate and share their new skills and knowledge with other pupils, and was rewarded for doing so. The school was impressive in both its recognition and its adoption of outdoor play and learning across the whole school culture. These two factors were symbiotic, in that a positive approach enabled deeper involvement from both the study children and the whole school. The theme of 'behaviour perceptions' was a limiting factor. Being 'wild experts' encouraged integration by recognizing and utilizing the children's new skills in the school and classroom environment. This gave the children a feeling of distinction and being special, increasing their confidence. 'New perspectives' were limited to those who could attend the sessions, meaning that changes in wellbeing may not have been noticed so easily but 'whole school culture change' enabled the spread of outdoor pedagogy in an effective way, encouraging academic development based on the 'wild' experiences.

Conclusions

This study explored the suggestion that, for disadvantaged children, wellbeing through outdoor learning is important in improving school-readiness and achievement (Dillon & Dickie, 2012). The study had a small cohort, yet the influence is clear over time, as shown in the impact factors being better than those not participating in the project.

The findings suggest ways in which positive changes relating to the children's wellbeing and academic development were demonstrated. In terms of wellbeing, notably their self-regulation and resilience developed, supported by project factors such as 'emotional space' and school-based integration. The children increased in their physical and social wellbeing, confidence for learning and connection to the rest of nature. This was embodied in their increasing confidence outdoors and by being recognized as 'wild experts' at school. The children's academic development across the subjects compared favourably with their equivalent peers, with positive shifts in attainment and attendance. Given the wide range of potential parameters it is difficult to claim causality, however the children, their parents and the school team identified the project as having primary influence.

There is a danger when outdoor play and learning is discussed, or variants of it, such as Forest School, in assuming that all projects are the same in delivery, impact or outcomes. Such an assumption can be commonly found, yet no two complex interventions are the same. It is worth taking note of the specific form the project has taken. There were several outstanding factors that contributed to its success in helping the children to be well, grow and achieve. Highly skilled outdoor practitioners designed the project with wellbeing and self-regulation in mind and were able to support the children's experience through positive relationships. This includes respecting their autonomy, agency, providing nurture, emotional time and space away from school agendas. The focus has been not on what the children are doing or learning, but on their inhabiting a living space, regularly, playfully, over a substantial period of time, with a freedom to choose, time alone and in company. There were no fixed set activities. The living natural environments had great affordances for play, learning, growth and health, creating an opportunity for success through deep relationships with nature, each other and themselves. The children regularly visited one site, growing a sense of relationship with place. They benefitted from exploring other sites with holiday day visits year-round. Finally, the project was integrated positively within the school.

The project was successful in supporting the children's wellbeing and socio-emotional development, with time spent developing their tortoise-mind capabilities (Claxton, 1997), such as playful, creative, intuitive, relaxed and social ways of knowing. Providing opportunities for 'emotional space', 'freedom to choose', free social play', etc. in living environments, can be seen as the scenic route to achievement, much like the slow and steady path of the tortoise. Yet pastoral support and affective learning are needed to help disadvantaged children succeed at school (Rose et al., 2012). The project provided effective pastoral support and had a role in improving their academic development. Therefore the approach presented is a helpful and recommended intervention for any school or children's setting to employ.

Through the children's project participation, a gap was closed between the cohort and the school levels of attendance and academic development. Closing the gap is a frequent debate in public education policy (Wilson, 2014), with various interventions and panaceas offered to enable disadvantaged children to have similar opportunities to succeed at school compared to better-off peers. Pastoral support can include many different elements and interventions. The project was part of the offer for disadvantaged children in the school, alongside specialist help and other interventions. Therefore the project cannot be found to be solely responsible for any improvements in the children's wellbeing or academic development. Partnership working with the practitioners and school leadership supported integration. Thus, the project had a greater positive impact on the children, e.g. praised for their involvement and regarded as 'wild experts' within school. The school strongly upheld and championed the project's values, beginning a culture change in the school and local

area to deliver similar projects in future and embed it sustainably as an everyday part of the school's offer, embracing an outdoor affective ethos with contagious enthusiasm. The school support demonstrated the essential role of values, school culture and senior leadership in creating sustainable, 'doable' projects and lasting positive change. The offer for disadvantaged pupils was then extended to the whole school. This is in line with strong recommendations, such as that made by the government's Chief Medical Officer (Brooks, 2013) for a whole school approach and collaboration with wider communities.

Despite such strong endorsement, within government-commissioned reports and research, outdoor play and learning has never received substantial national government funding in English settings. The recent Natural Connections Demonstration Project (NCDP) has shown that children thrive when offered a rich diet of outdoor opportunities in school and teaching staff benefit (Malone & Waite, 2016). Given the longitudinal nature of the study, made alongside the NCDP project and supported by a growing body of evidence, there is every reason to suggest strong core funding and entitlement for all children to access outdoor play and learning. We are bold enough to suggest the National Curriculum in England embraces the outdoors as the Scottish Curriculum for Excellence has, to good effect (Learning & Teaching Scotland, 2010). In the meantime, we encourage settings to trust in the evidence and develop positive values and understanding within their teams and the wider communities they inhabit. The findings indicate that positive wellbeing outcomes and learning competencies may best be served through taking a scenic route, by not focusing on the goals for assessment but by engaging children restoratively in inhabiting living environments.

> [Children's} learning is an underground river, you can't see it, can't even feel it at times. Then suddenly they soar. You can't control it; you can't take credit for it. It's theirs. You have to be there, providing warmth and stability, providing tools and resources, answering questions, telling stories, having meaningful adult conversations and doing meaningful adult work in their presence. But when they soar, it's on their own wings (Black, 2016).

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Notes on contributors

Mel McCree is Senior Lecturer in Early Childhood at the University of the West of England. She specializes in outdoor arts, play and learning, in particular upon socio-cultural aspects such as nature-society relations, the politics of space, restorative pedagogy and inter-cultural perspectives. She has a rich background in creative community practice.

Roger Cutting is Associate Professor in Education at Plymouth University in England. He is concerned with Sustainability, Global Education and Science Education. He addresses aspects of pedagogy adopted in Education for Sustainability (EfS) in order to provide rigorous and critical expositions of them. He is a Research Fellow for the Centre for Sustainable Futures.

Dean Sherwin is Senior Project Officer at Wiltshire Wildlife Trust in England. His work focuses on youth wellbeing and community engagement through the provision of land-based experiential learning. Prior to this, he worked for 12 years as a secondary schoolteacher of Geography and Geology, and attained a PhD in Geology. Linked In: https://uk.linkedin.com/in/dean-sherwin-36323963

ORCID

Mel McCree http://orcid.org/0000-0001-9477-790X
Roger Cutting http://orcid.org/0000-0002-8745-6822

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