

Summary Report

A qualitative study of the physical health benefits and well-being outcomes associated with outdoor learning in natural environments (LINE) for year 2 school children



**Good from Woods research project
With Silvanus Trust and Plymouth University**

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The project: A qualitative study of the physical health benefits and well-being outcomes associated with outdoor learning in natural environments (LINE) for year 2 school children

The organisation: Silvanus Trust and Plymouth University

Local partners: Mayflower Community Academy, Natural Connections (Plymouth University), Friends of Ham Woods, Stepping Stones to Nature (Plymouth City Council)

The project researchers: Jennie Aronsson and Naomi Wright

Participant Group: Children in a Year 2 class (6 or 7 years of age) at a local school partaking in Natural Connections Demonstration Project: Learning In Natural Environments (LINE). The participants had already taken part in the Woodland Health for Youth (WHY) project.

Number taking part: 10 within a class of 25 setting the context.

Activity: Tuesday afternoon Learning in the Natural Environment (LINE) sessions in Ham Woods, Plymouth.

Top messages

- Having lessons outside, in woodland (and other outdoor environments with trees) enhanced well-being for the majority of the participants. The top three well-being categories that were highlighted were physical, emotional and biophilic well-being.
- One challenge of conducting research with young children (6 to 7 years old) is that they are not always able to verbalise their feelings and views; however they may show you what they like or communicate their view through games and other reflective methods. Using a flexible approach and tailoring the research activity to the individual child, using different methodologies and making them playful, can overcome these challenges. Action research is particularly suitable for this kind of research as you alter your plan as you go along.
- The preparation for learning outdoors is lengthy and complex for 6/7 year olds (wet weather kit storage, getting dressed etc.). While this may seem like a waste of up to 40 minutes, it is all a part of the process and necessary life skills for children to learn outdoors: for example, to bring their LINE kit, to dress appropriately according to the weather, and to wait for each other before leaving school safely.
- Children in Key Stage 1 want to play when outdoors; the majority of the participants enjoyed this experiential learning. Increased freedom to learn through play outdoors at this stage in the children's learning may improve their well-being, and so their abilities to learn and develop new skills.
- Action based research can provide new insights to how children learn outdoors. A common research process that suits school and curriculum based activities would be useful.

Background

This research project is funded through Good from Woods (GfW), a lottery funded project led by the Silvanus Trust and Plymouth University aiming to assess and advise on action-research that evaluates the well-being benefits that may arise from doing activities in woods. Furthermore, this research expands on the Woodland Health for Youth (WHY) project, a cross-sector partnership between health, education and environment that explored the physical health benefits of outdoor learning in natural environments (LINE)¹. LINE is one of the largest outdoor learning projects in the UK, led by Natural Connections (Plymouth University) and aiming to increase outdoor learning in natural environments in schools located in deprived areas².

The research was conducted in one of the local LINE 'beacon schools': Mayflower Community Academy, a large primary school in the northern part of Plymouth. The school was founded in 2009 and received its academy status in 2013, sponsored by Plymouth University. This area of Plymouth has a high number of families in poverty: using the Index of Multiple Deprivation, the area is the 3rd worst in Plymouth³. Statistically the literacy level is low, health problems such as childhood obesity are high. The school grounds of Mayflower Community Academy are designed to provide a wide range of outdoor activities, from sport to wildlife gardening, curriculum based teaching and play time. The school is situated next to Ham Woods, a large wooded nature reserve owned by Plymouth City Council and supported by a Friends group. Mayflower Community Academy utilises Ham Woods for outdoor learning purposes; most LINE lessons take place here although the school grounds are also used at times.

Ten children in a year 2 class (aged 6 or 7) were involved in the initial WHY research project, where their physical activity levels were measured alongside their BMI to explore the physical health benefits derived from LINE. This project continued to prioritise children's well-being and aimed to capture the views of children, parents/guardians, staff from Mayflower Community Academy and associated organisations through qualitative research methods.

¹ Aronsson, J. (2014) *Woodland Health for Youth (WHY); an evaluation of physical health benefits derived from outdoor learning in natural environments (LINE) for school-age children.*

² Growing Schools (2014) *Natural Connections Demonstration Project.* Available at: <http://www.growingschools.org.uk/about/natural-connections> [Accessed October 2014].

³ Plymouth Fairness Commission (2013) *An initial presentation of evidence.* Available at: http://www.plymouth.gov.uk/plymouth_fairness_commission_introductory_analysis.pdf [Accessed October 2014]

Research focus

Key aim: To explore children's experience of outdoor learning in natural environments (LINE) and how that impacts on their physical health and well-being

- To help clarify whether, or how, the natural environment, the activities, the place or the social elements contributed to the well-being of children learning in Ham Woods.
- To explore the suitability of an action research approach when conducting research within schools that use local natural areas for curricular activities and health promotion reasons.
- To disseminate research findings to stakeholders (including Mayflower Community Academy) and the wider public, and make recommendations for future practice.
- To contribute findings to the Good from Woods online data repository, a searchable database available to practitioners for evidencing the potential outcomes of their work to service users, funders and policy makers.
- To share findings with the WHY project and contribute to understanding of partnership working for positive health outcomes.

Context

Ham Woods is open to the public at all times. It has a stream running through it, paths constructed in and around it, open areas and more wooded parts. Recent history saw the woodland neglected and vandalised. However, due to capital works by Stepping Stones to Nature (SS2N)⁴, access is vastly improved and the community is now using the woodland for various reasons. A friends group, Friends of Ham woods, maintain the site and together with SS2N run a range of activities for the public to celebrate the woods and promote their use and conservation. These activities might include play days, bug hunts and making things from wood. Most of the activities are aimed at local people, encouraging them to be more actively involved in the management and future of Ham Woods.

Outdoor learning has been offered to children at Mayflower Community Academy through LINE since September 2013, and prior to that through Forest School in Ham Woods and on school site since the school opened in 2009. LINE adopts an experiential learning approach and recently the curricular activity has been focused on literacy work. In spring 2014, when this research study was conducted, two classes visited the woods one afternoon a week. Primarily educational, the school visits are also physical (it takes 15 minutes to walk to the centre of the woods, and many of the learning activities involves physical activity) and social by nature.

During the time of this research project, the LINE Facilitator at Mayflower Community Academy was a trained Forest School Leader. She would take the children outside for LINE one afternoon/week regardless of weather (unless extreme), supported by a Teacher Assistant and by any volunteers available. These included volunteers from the Friends of Ham Woods group and occasionally parents/guardians. The practitioner-researchers conducting this research project also volunteered during the LINE sessions as part of the action research process.

⁴ **Stepping Stones to Nature (SS2N)** is a multi-agency partnership project that sits within Plymouth City Council's Natural Infrastructure Team, designed to improve local green spaces and facilitate green space use in areas of high deprivation (SS2N annual report, 2012)

Methods

A range of different research methodologies were used:

- Conversational Drift – unplanned and led by the participant
- Interview – one to one, planned with a crib sheet
- Discussion Group – groups of children talking naturally
- Joining in other happenings – in school, these were the lessons
- Working alongside other groups – alongside Friends of Ham Woods
- Leading and setting up events and games – a game based session
- Reflective Journal – notes, pictures, photos and sketches all add to the evidence
- Envisioning – mapping activity of self with place
- Fun Games – making communication and learning fun
- Observational Drawing, photographs and videos – making a record as additional evidence
- Questionnaire – e-questionnaire (Survey Monkey)

Results

Expectations

All stakeholders spoke about the multiple benefits that outdoor learning entails, however the focus differed depending on their role. For example, parents/guardians would focus on the happiness of their children, school staff would highlight the educational benefits, and stakeholders from Friends of Ham Woods and from Plymouth City Council would speak about the importance of children connecting to and appreciating the woodland itself. Most stakeholders expressed an expectation of children being more active in the outdoors, and for the LINE activities to be purposeful and lead to personal development of the children. These expectations materialised in the children, although some aspect were subconscious for the children, such as the learning and the social element of LINE.

The number of times the well-being themes were referred to as benefits from learning in the woods were as follows:

From the Stakeholders:

Psychological Well-being: 57

Emotional Well-being: 22

Social Well-being: 4

Physical Well-being: 33 (1 negative)

Biophilic Well-being: 18

Imaginative and Experiential Well-being: 7

From the Participating children:

Psychological Well-being: 36 (5 negative)

Emotional Well-being: 61 (6 negative)

Social Well-being: 27

Physical Well-being: 144 (13 negative)

Biophilic Well-being: 54 (3 negative)

Imaginative and Experiential Well-being: 16 (1 negative)

The adults thought that the main benefit to the children would be their psychological development – as one might expect from learning activities. The children were overwhelmingly clear that physically

doing things was important to them, and the learning (or in their terms, playing) outdoors made them happy. Both children and adults referred to their social well-being less often. This may be due to the purposeful, curricular led nature of LINE: a class is a social gathering by nature, thus social well-being may be taken for granted. The biophilic and imaginative/experiential well-being were expressed often enough for inclusion in the top 8 indicators.

Contributing factors to the well-being were divided into who/what/where

Who: From the stakeholders' point of view, the research questions and discussions were all related to the children. The children themselves frequently referred to someone else: a parent/relative/teacher/other children etc.

What: The vast majority of 'what' contributors were either outdoor learning (LINE), or physical activity. In the latter case, the stakeholders would relate well-being to generally being active whereas the children were much clearer about the activity and specified splashing/running/climbing etc.

Where: Most of the stakeholders related the well-being to the woodland (Ham Woods), or generally just being outside. Children more often spoke about a specific place in the woods as a contributor to their well-being.

The following pages provide a summary for each well-being category for participants, including comments made by the children.

Psychological Well-being

Being **purposeful/developing oneself** was the most common indicator that emerged within Psychological Well-being.

Q: How does it make you feel if you are looking at the trees now, as you are now, how do they make you feel compared to sort of being in school?

C6: Like I'm just about to go on a big adventure.

Q: Does she mind you getting all muddy?

C4: No, not at all, she doesn't even mind if I go up into and climb a tree.

C4 is talking about her mother here, the psychological well-being referring to being competent in her mother's eyes.

The children often related this well-being to the activity they were engaging in, such as making things, looking for bugs and playing games. The place was also relevant and often specified: being in a tree, in the river, or generally in the woods. Due to the social element of psychological well-being, other people would be a key contributor: other children/teacher/other staff/family/relatives etc.

Emotional Well-being

Experiencing new activities in the woods made the children happy; nearly all the children expressed a **positive emotion or mood**. This was the most common indicator referred to.

Q: How does that make you feel when you see the birds and clouds?

C1: I feel happy because they make happy shapes in the sky. It makes you laugh sometimes.

Q: *You think of the sort of things that you've done.*

C6: *Having fun.*

Q: *Having fun is what you like best – yeah?*

C6: *Just little trees like they give...*

Q: *Like what?*

C6: *Well you get to play in the woods.*

Q: *About the woods – how do they make you feel when you walk in the woods for the first time, how does it make you feel?*

C4: *It makes me feel all right.*

Videos and photographs showed many smiles and a positive outlook, at least an acceptance of the learning, at most an inspiration and concentration.

Key contributors to this well-being were taking part in a physical activity (including making things) or 'risky' games such as wading the stream. The activity itself often brought about the positive emotional response.

Key places were by individual trees, in the woods generally and by the stream. This well-being seemed to be led by and experienced by the child, from within themselves.

Most positive emotions and moods are described in relation to 'playing' rather than 'lessons' according to the children's understanding of the activity. The lesson was often thought of as a 'telling off' or discipline. In actuality, the teacher would say the whole outdoor experience was the lesson – the 'playing' and the 'discipline' combined.

Social Well-being

This well-being was attributed to a lower proportion of responses. It is difficult to assess whether this is significant or not. As mentioned earlier, this may be a factor of being part of a class group, the children were behaving all the time in a way that could be construed as social, an intrinsic part of learning outdoors as a group. Many photographs taken show the social nature of the activities; team work, group work, gatherings, events with the class all aimed at learning from peers and strengthening social skills and culturally based knowledge.

The most commonly used indicator was feeling safe **and supported within and through social relationships**.

Q: *You like the parachute game best do you? Why?*

C1: *Because you got other people to play with.*

Q: *What's your favourite activity?*

C3: *Same as [C6] Because we do it together.*

Q: *Why's that?*

C4: *Cos I do it and my mum gives me a lot of time to play*

Q: *Does she mind you getting all muddy?*

C4: *No, not at all. She doesn't even mind if I go up into and climb a tree.*

Role of a mother in encouraging play through their social/family relationship.

Key contributing factors to this often came from outside school, through friends and family, the sorts of permissions the children thought they had. The activities were significant and not necessarily to do with school learning, just as much about finding places outside for playing.

Some children or their parents had trouble remembering their outdoor learning kit. This sometimes leads to feelings of exclusion (a negative well-being):

C3: I haven't brought my LINE kit before and we – they always got to go in the river when they, when they got their LINE kit and I didn't.

Physical Well-being

Physical well-being was by far the most commonly emerging well-being amongst participants. Since this research study had a focus on the physical health aspect of LINE it is not surprising that this came up most often in conversations and games. Due to their young age, the children were not always able to verbalise what they like but they would frequently talk about certain activities or ask for permission to do an activity, hence indicating a preference for this activity and a well-being associated with engaging in it.

Doing the physical activity was the most common indicator and a key contributor to many of the other well-being themes

Q: Why do you find it easy?

C2: Because it's making me healthy.

Q: Why do you think it's making you healthy?

C2: Because it gets me out of breath.

Q: Is that a good thing?

C2: Yeah.

C2 is talking about walking, expressing an awareness of how the exercise affects her physical health.

Q: Which do you like best, running or walking?

C8: Running.

Q: Why is that then?

C8: Gives you more energy.

C8 feels that he gains energy from running. Although running is energy consuming, it releases endorphins which will create a feeling of euphoria and energy.

Q: What sort of movements do you make when you are playing?

C4: A lot, and actually it's FUN!

C4 expresses how much she enjoys being active with great enthusiasm.

The main contributor to this well-being was obviously the physical activity itself; however the context was LINE in the woodland throughout the research, hence the place would also be significant.

Biophilic Well-being

A connection with nature was evident through both indicators: **feeling close to nature** and **being engaged in a relationship with nature**. The children regularly referred to their closeness to nature and their understanding or learning from it, and the well-being this entailed.

C6: I really like the trees, they are part of nature, they help us breathe.

Q: Yeah.

C6: They take all the bad air, put in the good air...

Q: Yeah.

C1: Trees grow like us.

C3: Well, trees has gots loads of leaves on, they are quite big.

Q: What's your favourite activity?

C8: It's climbing trees because I just like climbing trees

Q: Have you got a favourite activity in the woods?

C4: Playing games, playing in the mud, slipping down, playing up in trees, and picking leaves.

The main contributor to this well-being was being in the woods, by trees, carrying out an activity that encouraged closer physical connection such as climbing trees, wading in the stream and searching for bugs. Within the school setting, the teacher plays the role of enabling that close contact.

There were occasional negative comments, usually relating to wet or mud and getting mucky. Three out of six boys mentioned their dislike of mud at different times, plus one boy's mother. Other children positively enjoyed the wet and muddy side to being in the woods.

Q: You want to go home? What because the woods – why's that then?

C5: Cos I don't want to get wet.

Imaginative and experiential Well-being

This category reflects an imaginative and creative expression of nature as a form of feeling good. Being outdoors brought out some expressions of this possible well-being. Most evidence came from children as they described their experience of exploring the place. The place definitely shaped some responses, the jungly, adventurous feel, the colours and shapes. Certain story telling games and other playful learning activities (such as this picture of watering plants most in need) encouraged imaginative responses.

Q: Have you got a favourite shape [clouds in the sky]?

C1: A smiley shark.

Q: Why do you like climbing trees then?

C4: Because sometimes I pretend that I'm a squirrel because I'm really careful in trees, I climb up there and I jump out the top.

Q: Why do you, why do you specially like birch wood trees?

C6: Well just because they have nice patterns.

Q: They have nice patterns?

C6: Sometimes they have little patches of black.

Q: Yeah and what...

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C6: Just light and colourful, happy?

Q: Yeah, that's good.

C4: I like crouching down because I think that there's bears looking for us.

C4 also said the opposite, that she didn't like crouching down because of fear of bears.

Reflections and Action points

Research

- Collaborate with a wide range of organisations that could support the research process (academic, business, voluntary sector etc.).
- Obtaining ethics can be a lengthy process. Ensure support available from someone with expertise in this field. Within a school setting, a more synergistic way of engaging children and parents/guardians in the ethics of continuous research would be beneficial.
- Don't underestimate the time and effort needed to conduct rigorous research. Allow enough time out from regular workload and replace staff on the floor; otherwise the research could be resented.
- The differences between research in an adventure play woodland, with children who had chosen to be there and in woodland used for curriculum based activities within school time was interesting. The value of play in learning as well as well-being was being expressed by children. Further research into the value of play may be useful to the 'forest education' sector.
- The physical health focus in this study complemented the research carried out through the WHY project. Using different research methods (qualitative and quantitative) increases research rigour and reliability. However, both the WHY project and this project were small-scale studies; further research on a larger scale and over a longer period is necessary to fully understand the extent of physical health benefits that derives from outdoor learning in natural environments.
- Reflection upon practice, such as through a reflective log is a powerful tool in practice improvement as it allows critical thinking, values the practitioner's knowledge and skills and leads to more rigorous evidence.
- Dissemination is key to research - this is how practice is changed and improves. Dissemination of findings with stakeholder, other researchers and the public should be encouraged through the research process.

Children's well being

- The WHY project research findings demonstrated that the children were significantly more active during outdoor LINE sessions than during indoor lessons, and that they were especially active when LINE was held in the nearby woodland as opposed to the school grounds. Ham Woods offers a bigger space to move around in and is less familiar than the school grounds, hence more interesting to explore. There are also increased opportunities for diverse activities such as climbing on trees and wading in the stream
- The qualitative research in this study demonstrated that children enjoyed the opportunity to have additional physical activity. The natural environment provided an additional layer to the experience – the adventure, the colours, the breeze.
- Emotional well-being was the second most common impact amongst participants. The children expressed joy and happiness from being outdoors, being physically active and engaging in LINE activities through comments and body language.

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- The evidence demonstrated that children connected to nature through the outdoor activities. This is an important aspect of LINE, as some children might not experience this outside school and hence never get this opportunity if it wasn't for school.
- The research findings suggested that the LINE activities provided opportunities for child development social interactions. Moreover, the woodland inspired to creative thinking and imagination through children exploring the place.

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