

Hawxwell, Louise (2019) You only need a potato peeler and tarpaulin: perceptions of outdoor learning from primary education trainees. *Teacher Education Advancement Network Journal*, 11 (1). pp. 106-115.

Downloaded from: <http://insight.cumbria.ac.uk/id/eprint/4652/>

Usage of any items from the University of Cumbria's institutional repository 'Insight' must conform to the following fair usage guidelines.

Any item and its associated metadata held in the University of Cumbria's institutional repository Insight (unless stated otherwise on the metadata record) may be copied, displayed or performed, and stored in line with the JISC fair dealing guidelines (available [here](#)) for educational and not-for-profit activities

provided that

- the authors, title and full bibliographic details of the item are cited clearly when any part of the work is referred to verbally or in the written form
 - a hyperlink/URL to the original Insight record of that item is included in any citations of the work
- the content is not changed in any way
- all files required for usage of the item are kept together with the main item file.

You may not

- sell any part of an item
- refer to any part of an item without citation
- amend any item or contextualise it in a way that will impugn the creator's reputation
- remove or alter the copyright statement on an item.

The full policy can be found [here](#).

Alternatively contact the University of Cumbria Repository Editor by emailing insight@cumbria.ac.uk.

**You only need a potato peeler and tarpaulin –
Perceptions of outdoor learning from Primary
Education Trainees**

Teacher Education Advancement
Network Journal
Copyright © 2019
University of Cumbria
Vol 11(1) pages 106-115

Louise Hawxwell
Edge Hill University

Abstract

Spending time in the outdoors has been shown to have a number of benefits, including those related to academic, health and well-being, and social factors. Teachers are in an ideal position to deliver outdoor experiences to the children they work with, therefore it is important that trainee teachers develop their knowledge and understanding of how to provide outdoor learning experiences and make use of outdoor settings in their teaching. In order to support trainees in making effective pedagogical decisions, it is important to establish their opinions of teaching and learning, including their views of outdoor learning. This article presents the findings from a small-scale research study exploring the perceptions of outdoor learning held by trainee teachers at the start of their Initial Teacher Training (ITT) primary education degree programme. Findings show that at this early stage of training, trainees held mixed views on outdoor learning; they were generally positive but also appeared to be apprehensive and cautious about specific elements related to outdoor learning. Trainees were also asked to make suggestions as to how they felt their degree programme could support them further in this area. The article also offers suggestions as to how ITT may support trainees in developing understanding and knowledge of outdoor learning to inform their practice as both a trainee and future primary school teacher.

Keywords

Initial Teacher Training (ITT); outdoor learning; trainee teachers; primary education; perceptions.

Introduction

Spending time in the outdoors, both formally and informally, has been recognised as having a positive impact on a number of areas, including academic, social, health and well-being (Acar, 2014; Higgins, 2016; King's College, 2011; Mannion, Mattu & Wilson, 2015; Waite, Passy, Gilchrist, Hunt & Blackwell, 2016). Teachers are in an ideal position to provide outdoor learning experiences to the children and young people they are working with. It has been recognised that teacher's personal beliefs and perceptions about teaching and learning, including their views about the outdoors and outdoor learning, can influence pedagogical practices and decision making (see for example Ernst & Tornabene, 2012; Levin & He, 2009).

This paper presents the findings from a small-scale study exploring the perceptions of outdoor learning held by first year primary education trainee teachers at the beginning stages of their training. The paper also makes suggestions as to how Initial Teacher Training could possibly support trainee teachers in developing their knowledge, understanding and skills of outdoor learning.

Background and context to the study

What is outdoor learning?

It has been recognised that the terms *outdoor learning* and *outdoor education* have no clearly defined boundary (Greenway, 2005), with both terms 'often used interchangeably' (Beames, Atencio & Ross, 2009:32) and both having differences in definitions and practices (Hawxwell, O'Shaughnessy, Russell & Shortt, 2018). Both involve learning that takes place beyond the indoor classroom setting, either within the immediate locality or further afield (Beames et al., 2009; Beames, Higgins & Nicol, 2012;

Citation

Hawxwell, L. (2019) 'You only need a potato peeler and tarpaulin – perceptions of outdoor learning from primary education trainees,' TEAN journal, 11(1), pp. 106-115.

Council for Learning Outside the Classroom, 2015). Experiences and activities may include minibeast hunts, outdoor play in the school grounds, or adventurous activities such as abseiling or hillwalking as part of a residential event.

Outdoor learning and English education system

Current education systems in England focus upon raising standards and achievement, which may be a challenge to those wanting to include outdoor learning in their practice. Outdoor learning may be regarded as *not real work*, with distinctions being made between the 'real work in the classroom and the additional "fun" work outside of the classroom' (Malone, 2008:25). Outdoor experiences are often considered to be more related to the development of children's personal and social skills rather than being linked to academic achievement and attainment (Hawxwell et al., 2018).

Despite this, interest in outdoor learning and outdoor education has risen in England over recent years, through initiatives such as Beach and Forest Schools, forest kindergartens and Growing Schools, with a greater number of schools including outdoor provision in their timetables and curricula (Waite et al., 2016). In the recently published *A Green Future, the 25 Year Environment Plan* from Defra (2018), support for outdoor activities both in and out of school contexts has been encouraged, with plans such as the Nature Friendly Schools Programme being proposed.

Trainee teachers and outdoor learning

In order to be recommended for Qualified Teacher Status (QTS), trainee teachers in England work towards the attainment of eight Teachers' Standards throughout their degree programme, which includes both time in university and on school-based placements. Training is focused upon the achievement of each of these standards, whilst also developing trainees' knowledge and understanding of pedagogy and subject knowledge relating to the specific curriculum and age range being studied.

Despite this increased attention on outdoor learning in both policy and practice, it has been recognised that there are disparities and variances nationwide and across individual Initial Teacher Training (ITT) institutions in terms of provision, opportunities and standards relating to outdoor learning (ASE Outdoor Science Working Group, 2011; Field Studies Council, 2014). In relation to the Teachers' Standards, outdoor learning is only implicitly referred to within TS4, whereby trainees are expected to be able to 'plan other out of class activities to consolidate and extend the knowledge and understanding that pupils have acquired' (DfE, 2011:1). It has also been suggested that there may be a generation of teachers who may lack basic knowledge of the outdoors (Marcum-Dietrich, Marquez, Gill & Medved, 2011). This may include general outdoor knowledge, such as plant or animal identification, or insufficient pedagogical knowledge of how to deliver outdoor learning experiences.

Aims of research and Methods used

Due to the increase in attention towards outdoor learning in policy and also in practice, and concerns being raised regarding knowledge of the outdoors, it is personally felt that within ITT it is important to support trainees in developing their knowledge and understanding of these areas. This includes how to provide outdoor learning experiences for the children they are working with in a range of different settings and locations, and also their knowledge and understanding of the outdoors itself.

The main aim of the research was to elicit trainees' perceptions of outdoor learning at the start of their degree programme. The research study also intended to explore how trainees felt their teacher training degree programme could support them in developing their outdoor learning knowledge, understanding and skills. Trainees involved in this study had only just started their primary education undergraduate degree programme and were due to start their first teaching placement. They had not yet encountered formal outdoor learning in schools as part of their degree but had had some outdoor

learning experiences in university-based curriculum sessions. Throughout the three years of their degree, trainees would be further developing their understanding of teaching and learning, and other aspects of the teacher's role, including curriculum subject and pedagogical knowledge, classroom management and organisation.

To consider best how to support trainees in making effective pedagogical decisions, it is important to establish their opinions of teaching and learning (Ernst & Tornabene, 2012). Perceptions were gathered through the use of an online survey. Online surveys are recognised as being simple to administer (Carbonaro & Bainbridge, 2000), requiring very little explanation or computer skills, and can be completed at a time convenient to the participant (Lefever, Dal & Matthíasdóttir, 2007). The survey was made available to all Year 1 full time Primary Education trainees in the first month of their degree programme. It was to be completed by the trainees in their own time, as it was not possible to concurrently administer this survey during session time due to cohort size and timetabling issues. 39 trainees out of a possible 320 enrolled onto Year 1 completed the survey. Low numbers may be due to the completion of this survey not being compulsory and it was not linked to any aspect of their degree programme, assessment or coursework.

The survey comprised of eight open ended questions focusing on different aspects of outdoor learning, encouraging trainees to explain their answers as fully as possible with no restrictions or structure being imposed. Trainees were asked:

- 1) What do you understand by outdoor learning? Please try to define this term and explain it as fully as you can.
- 2) Which of the following subjects from the Primary National Curriculum do you think can be taught outdoors? (List of NC subjects) Select as many as required. Why do you think this is?
- 3) What benefits or advantages do you think there are for outdoor learning in the primary school?
- 4) What disadvantages or drawbacks do you think there are for outdoor learning in the primary school?
- 5) What resources do you think would be needed for outdoor learning in the primary school?
- 6) Do you think any extra preparation or organisation would be needed before using outdoor learning in the primary school?
- 7) Do you think you will make use of the outdoors in your teaching, both as a trainee and in the future when qualified?
- 8) What do you think would be useful in your degree programme to help develop your knowledge and understanding of outdoor learning as a future primary school teacher?

Responses collected from the survey clearly demonstrated trainees' views, attitudes and ideas relating to outdoor learning at this early stage of their training. These showed a range of different perceptions held by a relatively small sample size, however through analysis, key themes have been obtained which enable broad generalisations to be made about this cohort of trainees.

Data was analysed using a Grounded Theory approach. Grounded Theory is defined as the 'discovery of theory from data' (Glaser & Strauss, 1967:2), making use of specific strategies to ensure rigorous research (Charmaz, 1996). Strategies included coding and categorising the data collected for each question to firstly establish sub-themes with appropriate data from each question being allocated to the appropriate sub theme. The complete data set was then subjected to a comparative method of analysis (Strauss & Corbin, 1990). To establish the key themes relating to perceptions of outdoor learning, all sub-themes from questions 1 - 7 were compared in order to establish any connections. These key themes were then reviewed to assess the suitability of these in relation to the collected data and focus of the study. This process was then repeated using data from question 8 in order to

establish key themes relating to trainees’ perceptions regarding how their ITT programme could offer support in terms of developing their knowledge and understanding of outdoor learning. Key themes relating to the perceptions of outdoor learning held by the trainees, and ideas for ITT provision taken from the collected data are both presented in the findings section of this paper and discussed further in the discussion section. Suggestions for ITT practice are also presented within the discussion section of this paper.

The study was approved by the ethics committee of my institution. All ethical procedures and considerations were monitored and constantly upheld throughout all stages of the study. It should be noted that at the time of the study, the 2011 BERA guidelines were those in place. These guidelines were followed and upheld throughout the study, alongside those published by my own institution for carrying out research with students and trainees (Edge Hill, 2014; Edge Hill, 2012).

Findings

A large body of qualitative data was collected from the results of the survey and is available for viewing on request. With regards to perceptions of outdoor learning, data analysed from questions 1-7 identified four key themes as follows:

- The value of the outdoors and outdoor learning
- Limitations of the outdoors and outdoor learning
- Concerns relating to safety and risk
- Provision of something different

Examples of data from the online survey relating to these key themes is presented below in Table 1:

Table 1. Key themes relating to perceptions of outdoor learning (Questions 1-7).

| Key theme | Example of a typical response |
|--|---|
| The value of the outdoors and outdoor learning | <ul style="list-style-type: none"> • ‘it makes the abstract real’ • ‘practical activities are a lot more memorable’ • ‘it may even motivate some pupils to engage more in the lesson’ • ‘it encourages children to be more creative’ • ‘if you apply it to the real world it can suddenly become more obvious and real’ |
| Limitations of the outdoors and outdoor learning | <ul style="list-style-type: none"> • ‘the teacher and TA would have to plan well beforehand to ensure the outdoor learning is organised’ • ‘outdoor learning isn’t always possible as it’s weather dependent’ • ‘there is limited space/time/resources for the children to write down their learning and knowledge’ • ‘assessment will be limited in the traditional sense’ • ‘lessons will need to be clear and structured as children get more distracted outside’ |
| Concerns relating to safety and risk | <ul style="list-style-type: none"> • ‘teachers have to make sure they know exactly how they are going to keep the children in designated areas so they don’t lose anyone’ • ‘risk assessment may be necessary as there is more hazards in outdoor areas’ • ‘a safe, hazard free environment would be needed’ |
| Provision of something different | <ul style="list-style-type: none"> • ‘it would provide the children with a different atmosphere’ • ‘not all children will be given this opportunity with their families’ • ‘outdoor learning will allow the children to have different experiences of learning than they will inside the classroom’ • ‘outdoor learning could also offer space for certain team building activities that the classroom doesn’t allow for’ |

Secondly, with regards to how trainees felt their ITT degree programme could support them in developing their knowledge and understanding of outdoor learning (Question 8), four key themes were also identified from the data:

- First hand experiences of the outdoors and outdoor learning
- Resources
- Subject specific guidance
- Other aspects linked to outdoor learning (for example, policy guidance, class management)

Examples from the data relating to this are summarised in Table 2 below:

Table 2. Key themes relating to how degree programme could support trainees participating in survey (Question 8).

| Key theme | Example of a typical response |
|---|--|
| First hand experiences of the outdoors and outdoor learning | <ul style="list-style-type: none"> • 'We could perhaps go and explore outside on the campus, or we could go to a local primary school and see what primary schools have in their playgrounds for us to do this' • 'It would be helpful if us as trainees could experience outdoor learning ourselves whilst being taught the pedagogy of it at the same time so we could put into perspective how children may react to certain aspects outside' |
| Resources | <ul style="list-style-type: none"> • 'It would be useful to see more examples of teachers teaching outside. Ideas and resources that work well outside' • 'What not to use whilst outside or what doesn't work so well' • 'How to plan effectively so your outdoor session goes well.' |
| Subject specific guidance | <ul style="list-style-type: none"> • 'Have a strand in each subject dedicated to this area' • 'maybe give lesson plans with examples of outdoor learning for different subjects' |
| Other aspects e.g. policy guidance and class management | <ul style="list-style-type: none"> • 'probably see some sort of guidance on what is appropriate and how to plan outdoor sessions effectively to be efficient' • 'I would like to know more about Forest Schools' |

Discussion

Perceptions of outdoor learning and motivations for using the outdoors are individualistic, varying considerably amongst teachers and trainees, with many different factors being attributed to these such as past experiences of the outdoors and personal beliefs regarding the value of outdoor learning experiences (Ernst, 2014; Ernst & Tornabene, 2012; Gill, 2011; Rickinson, Hunt, Rogers & Dillon, 2012). Despite the small sample size in this study, findings highlight that the majority of trainees have a positive view of outdoor learning - they are keen to engage with this and are enthusiastic about doing so - and that they also recognise the value that outdoor learning provides for learners. As an outdoor learning enthusiast, it was personally heartening to read so many positive comments. Data also reveal that trainees are naturally cautious and apprehensive about some aspects, identifying possible limitations of outdoor learning. Key themes identified from the data has enabled broad generalisations to be made relating to the perceptions of outdoor learning and will be discussed further in this section.

The value of the outdoors and outdoor learning

The outdoors and outdoor learning were noted as being particularly significant and valuable in the majority of responses by trainees in this study. They recognised a number of different aspects and were able to relate these specifically to outdoors.

Firstly, being actively involved in learning through the use of hands on learning approaches during outdoor experiences was recognised as being a contributing factor in encouraging motivation and engagement in learners. One participant in the survey stated that *“children will be more engaged if a range of environments and learning techniques is used throughout the day”*. These active involvement and hands on approaches were recognised as being *“a lot more memorable”* than indoor learning experiences, and *“may even motivate some pupils to engage more in the lesson”*. This is in agreement with Dowdell, Gray & Malone (2011:33) who note that outdoor learning has a ‘significant potential...for encouraging children’s engagement with learning’ through the freeing up of mind and body (Maynard & Waters, 2007; Tovey, 2007).

Reference was also made to how the outdoors had natural links to some subjects – such as science, geography and PE. The outdoors could provide appropriate learning spaces for these subjects where the children could *“use their surroundings to develop their understanding of their world around them”* or had *“a much bigger space to work with”*. Providing trainees with opportunities to experience other subjects in the outdoors may enable them to recognise wider curriculum links and subject based learning opportunities.

The application of real world and real-life contexts was also linked to outdoor learning, making learning *“suddenly become more obvious”* and *“the abstract real”*. Many responses from the trainees referred to creativity. Comments indicated how the outdoors could provide *“a creative and stimulating environment”* for subjects such as music, art, English and technology, providing the children with inspiration for their work which *“encourages the children to be more creative”*.

Limitations of the outdoors and outdoor learning

Interestingly, despite the generally positive responses regarding the outdoors and outdoor learning, some comments referred to how they could negatively impact upon children’s progress and actual learning. Concerns about children losing concentration, along with the notion that the outdoors could not provide appropriate reinforcement or consolidation of previous learning, was raised. However, research has shown that time in the outdoors can significantly raise achievement and attainment across a number of different curriculum areas, thereby having a positive impact on learning and progress (Lovell et al., 2010; Richardson et al., 2015; Waite et al., 2016), improvements in cognitive and working memory and also increased attentiveness (Dadvand, Nieuwebhuijen, Esnaola & Sunyer, 2015). It will be important for trainees to see these positive impacts for themselves.

A significant number of responses in the survey referred to pupil behaviour, including worries and concerns about children not listening properly, becoming easily distracted or losing concentration. This data was collected at the start of this cohort of trainees’ training, therefore it is not clear if these concerns were due to the stage of training or could be specifically attributed to outdoor learning. However, research has shown that experienced practitioners have also raised similar concerns about managing children in outdoor learning (see for example Ernst, 2014; Ernst & Tornabene, 2012).

A further limitation to outdoor learning highlighted was the weather, with the majority of trainees believing that outdoor activities could only take place in fine weather as it was *“weather dependent”*, and because of that fact that *“the rain in this country doesn’t allow opportunities for outdoor learning”*. It will be important for trainees to experience the outdoors in different weather conditions so that they can recognise how activities can be delivered throughout the year.

Resources, or a lack of suitable resources including space, materials and equipment, were also noted as a possible constraint of outdoor learning. Many responses from trainees showed that they felt suitable spaces, such as a specific outdoor area or shelter was needed in order for learning to take place.

Concerns relating to safety and risk

Safety and risk management concerns were raised in the majority of responses linked to the organisation and disadvantages of outdoor learning. Trainees highlighted the need for risk assessments to be carried out, parental permission to be obtained, and for a safe, hazard free environment to be available. This needs to be addressed so that trainees feel capable and confident in using the outdoors in a safe manner.

Provision of something different

Trainees recognised that the outdoors could provide ‘a unique environment...qualitatively different to the indoors’ (Tovey, 2007:13) in terms of learning experiences offered, locations and resources being used. This was noted not only in terms of learning opportunities being provided to the children, but also for the teacher too. Comments included how the outdoors and outdoor learning would give teachers a different teaching environment, an opportunity to express themselves in different ways and also give them “*a break from the confines of the classroom*”.

Suggestions for ITT practice relating to outdoor learning

Based on the findings relating to the perceptions of outdoor learning and also the ideas put forward by trainees in this study, the following are suggestions for ITT providers to support their outdoor learning provision:

- ***Enable trainees to see for themselves how the outdoors can be used across the curriculum in a variety of ways.*** Previous research into outdoor learning by O’Brien & Murray (2007:250) highlighted that it can embrace ‘a broader concept of learning’, thereby supporting the development of a wide range of skills, both socially and academically (Acar, 2014; Higgins, 2016; King’s College, 2011; Mannion et al., 2015; Richardson et al., 2015; Waite et al., 2016). Provide real life experiences, meaningful interactions and opportunities for trainees to engage with the outdoors and outdoor learning across different subject areas, modules and units of work – not just in the ‘typical’ outdoor based subjects of science, geography and PE, making use of a range of different spaces, including the campus grounds, nearby local areas and if possible, those further afield. These outdoor learning opportunities should be delivered at different times of the year so that trainees can recognise how outdoor learning is not just a summer or fine weather activity.
- ***Recognise that not everyone feels comfortable in the outdoors.*** Many studies have shown that outdoor learning practices can be limited by the barriers perceived by practitioners (see for example, Ernst & Tornabene, 2012; Fägerstam, 2014). It is important to ensure that these barriers and perceptions are acknowledged and addressed. Give trainees time to adjust to this environment, which may be new to some. Provide support where needed. Provide trainees with time to consider and reflect on their own perceptions of the outdoors and outdoor learning, and how this may change as they develop confidence and familiarity with this space.
- ***Enable trainees to recognise and identify how risks can be managed and implement outdoor learning safely.*** Findings from Ross, Higgins & Nicol (2007) found that many teachers were not making use of the outdoors due to possible risks and increased paperwork needed in order to manage these risks. Therefore, it is important to provide models of good safety and risk management practices when working outdoors. Help trainees understand how to complete a risk assessment, support them in being able to identify possible risks and how to manage these. Give

them opportunities to implement outdoor activities in a safe place where they can try out their organisation and management strategies.

- **Support trainees in implementing outdoor learning practices.** Involve them in planning and running small activities as part of their university-based sessions. Encourage school-based partners to give trainees opportunities to put what has been learned about outdoor learning into practice whilst they are on teaching practice / teaching placements. Support trainees in developing their strategies for managing routines and behaviour when outside
- **Encourage trainees to engage with the outdoor learning community.** Make links with local Forest Schools, Beach Schools, outdoor nurseries, and so on to provide opportunities for trainees to interact and collaborate with different outdoor learning settings. Signpost trainees to useful organisations, such as the Farming and Countryside Education (FACE), the Institute for Outdoor Learning (IOL). Encourage trainees to make use of Twitter and other social media to connect with outdoor learning professionals and wider research in this area.
- **Act as a model.** Be an advocate for the outdoors and outdoor learning! Show the trainees how you would make use of the outdoors in your practice as a teacher educator, provide examples from your own experiences of using outdoor learning in the classroom. Join in with the outdoor learning experiences you provide, and have fun with the trainees.

Conclusions

It was recognised in the 2005 report from the Education and Skills Select Committee (House of Commons Education and Skills Committee, 2005) that in order for outdoor learning to be carried out effectively, well trained teachers were needed. This was further echoed in 2014 by the Field Studies Council who commented that the most effective way to equip future teachers ‘with the skills to take their students into the “outdoor classroom” is to ensure a high status for fieldwork in ITT and the standards which underpin it’ (FSC, 2014:3). Both reports reinforce the importance of teacher training in supporting trainees in developing their knowledge understanding and skills of outdoor learning. As highlighted in both the findings and discussion from this research, there is potential for ITT to support the development of trainees’ skills, knowledge and understanding of outdoor learning.

The findings from this small-scale study highlight that trainees have generally positive perceptions towards outdoor learning and are keen to make use of this in their teaching practices but do have some concerns and worries. It is personally felt that if ITT institutions can deliver outdoor learning experiences as part of their teacher training degree programmes, any worries and concerns expressed by trainees can be addressed. ITT provision will also ensure that trainees’ positive perceptions, enthusiasm and commitment for outdoor learning will remain and continue with them throughout their training and beyond into their future teaching careers.

References

- Acar, H. (2014) ‘Learning Environments for Children in Outdoor Spaces’, *Procedica – Social and Behavioral Sciences*, 141 (2014), pp. 846–853.
- ASE (Association for Science Education) Outdoor Science Working Group (2011) *Outdoor Science: A co-ordinated approach to high-quality teaching and learning in fieldwork for science education*. London: Field Studies Council & King’s College, London.
- Beames, S., Atencio, M. & Ross, H. (2009) ‘Taking Excellence Outdoors’, *Scottish Educational Review*, 41 (2), pp. 32-45.
- Beames, S., Higgins, P. & Nicol, R. (2012) *Learning Outside the Classroom: Theory and Guidelines for Practice*. Oxon: Routledge.

- BERA (British Education Research Association) (2011) *Ethical Guidelines for Educational Research*. London: BERA.
- Carbonaro, M. & Bainbridge, J. (2000). 'Design and development of a process for web-based survey research', *The Alberta Journal of Educational Research*. 46 (4), pp. 392–394.
- Charmaz, K. (1996) 'The search for Meanings – Grounded Theory', in Smith, J.A., Harré, R. & Van Langenhove, L. (eds.) *Rethinking Methods in Psychology*. London: Sage, pp. 27-49.
- Council for Learning Outside the Classroom (2015) 'What is LOTC?' Available at: www.lotc.org.uk (Accessed 5th July 2015)
- Dadvand, P., Nieuwenhuijzen, M.J., Esnaola, M., Forn, J., Basagaña, X., Alvarez-Pedrerol, M., ... & Sunyer, J. (2015) 'Green spaces and cognitive development in primary schoolchildren', *PNAS*, 112 (26), pp. 7937-7942.
- Defra (Department for Environment, Food and Rural Affairs) (2018) *A Green Future: Our 25 Year Plan to Improve the Environment*, London: HM Government.
- DfE (Department for Education) (2011) *Teachers' Standards* London: HMSO.
- Dowdell, K., Gray, T. & Malone, K. (2011) 'Nature and its influence on children's outdoor play', *Australian Journal of Outdoor Education*, 15 (2), pp. 24-35.
- Edge Hill University Research Ethics Committee (2012) *Ethical Guidance for Undertaking Research with Edge Hill University Students*. Ormskirk: Edge Hill University.
- Edge Hill University Research Ethics Committee (2014) *Research Risk Assessment at Edge Hill University*. Ormskirk: Edge Hill University.
- Ernst, J. (2014) 'Early childhood educators' use of natural outdoor settings as learning environments: an exploratory study of beliefs, practices and barriers', *Environmental Education Research*, 20 (6), pp. 735-752.
- Ernst, J. & Tornabene, L. (2012) 'Pre-Service Early Childhood Educators' Perceptions of Outdoor Settings as Learning Environments', *Environmental Education Research*, 18 (3), pp. 643–665.
- Fägerstam, E. (2014) 'High school teachers' experience of the educational potential of outdoor teaching and learning', *Journal of Adventure Education and Outdoor Learning*, 14 (1), pp. 56-81.
- Field Studies Council (2014) *Carter Review of Initial Teacher Training Field Studies Council Evidence*. Field Studies Council.
- Gill, T. (2014) *Children and Nature: A quasi-systematic review of the empirical evidence*. London: Sustainable Development Commission.
- Glaser and Strauss (1967) cited by Holton, J. A. (2008) 'Grounded Theory as a General Research Methodology'. In www.groundedtheoryreview.com 2 (7).
- Greenway, R. (2005) *What is Outdoor Learning?* Retrieved from <http://www.outdoor-learning.org/Default.aspx?tabid=207>
- Hawxwell, L. O'Shaughnessy, M., Russell, C. & Shortt, D. (2018): 'Do you need a kayak to learn outside?': a literature review into learning outside the classroom, *Education 3-13*.
- Higgins, P. (2016) *Outdoor Learning in Scotland: Issues for Education*. Edinburgh: Moray House School of Education, University of Edinburgh.
- House of Commons Education and Skills Committee (2005) *Education Outside the Classroom Second Report of Session 2004-2005*. London: The Stationery Office
- King's College & Natural England (2011) *Understanding the diverse benefits of learning in natural environments*.
- Lefever, S., Dal, M. & Matthíasdóttir, Á. (2007) 'Online data collection in academic research: advantages and limitations'. In *British Journal of Educational Technology*. 38 (4), pp. 574–582.
- Levin, B. & He, Y. (2009) 'Investigating the Context and Sources of Teacher Candidates' Personal Practical Theories (PPTs)'. In *Journal of Teacher Education*. 59 (1), pp. 55-68.
- Lovell, R., O'Brien, L. & Owen, R. (2010) *Review of the research evidence in relation to the role of trees and woods in formal education and learning*. Forest Research, 2010.

- Malone, K. (2008) *Every Experience Matters: An evidence-based research report on the role of learning outside the classroom for children's whole development from birth to eighteen years*, Report commissioned by Farming and Countryside Education for UK Department Children, School and Families, Wollongong, Australia.
- Mannion, G., Mattu, L. & Wilson, M. (2015) *Teaching, learning and play in the outdoors: a survey of school and pre-school provision in Scotland*. Scottish Natural Heritage Commissioned Report No. 779.
- Marcum-Dietrich, N., Marquez, L., Gill, S. & Medved, C. (2011) 'No Teacher Left Inside: Preparing a New Generation of Teachers. *Journal of Geoscience Education*', 59 (1), pp. 1-4.
- Maynard, T. & Waters, J. (2007) 'Learning in Outdoor Environments: A missed opportunity?' *Early Years: An International Research Journal*, 27 (3), pp. 255–265.
- O'Brien, L. & Murray, R. (2007) 'Forest School and its impacts on young children: Case studies in Britain', *Urban Forestry and Urban greening*, 6 (2007), pp. 249-265.
- Richardson, M., Sheffield, D., Harvey, C. & Petronzi, D. (2015) *The Impact of Children's Connection to Nature: A Report for the Royal Society for the Protection of Birds (RSPB)*. Derby: University of Derby.
- Rickinson, M., Hunt, A., Rogers, J. & Dillon, J. (2012) *School Leader and Teacher Insights into Learning Outside the Classroom in Natural Environments*. Natural England Commissioned Reports, Number 097.
- Ross, H., Higgins, R. & Nicol, P. (2007) 'Outdoor study of nature: teachers' motivations and contexts' *Scottish Educational Review*, 39 (2), pp. 160-172.
- Tovey, H. (2007) *Playing Outdoors*. Buckingham: Open University Press.
- Waite, S., Passy, R., Gilchrist, M., Hunt, A. & Blackwell, I. (2016) *Natural Connections Demonstration Project, 2012-2016: Final Report*. Natural England Commissioned Reports, Number 215.