

RESEARCH BRIEFING

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SUMMARY FINDINGS

Teaching in Nature



Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

The full report is available at the Scottish Natural Heritage publications website:
www.snh.org.uk/pdfs/publications/commissioned_reports/476.pdf

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INTRODUCTION

SNH has a remit for people's enjoyment and understanding of the natural heritage as well as the care of it. The potential for the educational use of National Nature Reserves (NNRs) (and similar 'wild' places for nature) is not well understood. This research, funded by SNH, was designed to enable practicing teachers from primary and secondary schools to collaboratively explore how National Nature Reserves could be used as sites for outdoor educational provision across a range of subject areas. This work was conducted within the context of the new national curriculum initiative in Scotland, Curriculum for Excellence (CfE) (LTS, 2010). For further information (including video of outdoor excursions, lesson plans, and supporting commentaries), visit the project website: <http://teachinginnature.stir.ac.uk>

Lapwing, Isle of Mull

A primary school pupil's painting (post-excursion class activity)



Pupils in Burn O'Vat, Muir of Dinnet, National Nature Reserve, Aberdeenshire

AIMS AND METHODOLOGY

Our main aim was to gain an understanding of the possible uses of NNRs and other special wild places for learning through drawing on teachers' experiences and expertise. Practically, this was achieved through the creation of a working group of teachers to investigate approaches to teaching outdoors in nature. Eleven teachers, working in teams, completed a cycle of work involving planning for learning, executing excursions, and post-visit activities with their classes. Teachers were asked to explore their own 'puzzles' across a range of subject areas. Other than time for release from school for planning, only some short inputs (on health and safety and background information and summaries of selected research findings) were provided. No strategic pedagogical interventions by teachers were prescribed.

A 'case' of teaching in nature was taken to be an outdoor excursion to a nature reserve by a class group plus associated planning, preparatory visits, or review processes by teacher-researchers or pupils and related texts / outputs. For nine cases we sought to discover, *inter alia*:

1. How is teaching in nature accomplished?
2. What do pupils and teachers value about these experiences?

Data from 14 cases in all were collected. Researchers were present at nine excursions (six primary school and three secondary school). Data came in the form of video, photographs, fieldnotes, interview transcripts and workshop discussion transcripts. They were analysed through the collaboration of the teachers who met at three residential workshops over the 16-month project.

FINDINGS A: TEACHERS' EXPERIENCES AND OUTCOMES

All teachers, whether novice or more expert in teaching out of doors, developed their expertise through working collaboratively on planning and executing teaching in nature. Key tasks included making advance visits, discussing their ideas with others, making initial and repeat visits to the same place, and creating purposeful, meaningful activities with their pupils. This work affected how teachers viewed themselves as educators as the outdoor context demanded a different role from them. Teachers who perceived themselves to be 'outdoor-novices' faced particular challenges when planning excursions. They found sharing experiences among colleagues helped to address initial concerns. Handling contingencies (such as weather and terrain) and generally being open to the unexpected (such as encounters with wildlife) were important when teaching in nature. Excursions in NNRs helped with meeting formal curricular demands of Curriculum for Excellence and provided opportunities for teaching in both an inter-disciplinary and a single-subject manner. Evidence suggested that teaching and learning in nature could be a very purposeful and meaningful practice for teachers and pupils.

FINDINGS B: PUPILS' EXPERIENCES AND OUTCOMES

In all cases, pupils valued spending time and learning in nature. Excursions and related activities in the classroom helped generate an aesthetic and caring appreciation of the natural environment and new understandings about human-environment relations. A range of teaching strategies were employed most of which sensitised pupils to the natural place, or took the place as an essential starting point for learning. While on trips, pupils valued having time for engagement in tasks that included investigation,



Pupil measuring the doorway of the remains of an old sheiling, the summertime dwellings used when animals were brought to higher pastures (near Loch Ba, on Isle of Mull)

observation, play and exploration. The educational excursions provided multi-sensorial experiences of nature that were very memorable and valued highly. Repeat visits to the same place made a particular difference to the quality and depth of understanding and engagement with natural places. In all cases, pupils and teachers noted that going outdoors for teaching and learning in nature changed and improved relations among pupils and teachers. Teaching in nature also enabled opportunities for greater enthusiasm, attentiveness and focus in pupils' learning, improved health and physical ability, and self-esteem in pupils.

FINDINGS C: KEY ACTIVITIES OF TEACHERS

Teachers, (secondary and primary, novice and more expert) planned and enacted their visits by:

- > working collaboratively with other teachers in this work
- > making advance visits to sites before taking their pupils
- > designing opportunities for pupils' purposeful, ethical and material practices and ensuring the natural place was a key element in these practices
- > making initial planning visits and making more than one visit to the same place with their pupils, often with support from parents or specialist staff
- > engaging pupils in the chosen topic before visits and between visits, both in the classroom and sometimes in their communities
- > planning for, and attending to the multi-sensorial dimensions of pupils' experiences,
- > striking a balance between (a) planning tasks that were more predictable, and (b) allowing for tasks and experiences to be flexible and responsive to the place

FINDINGS D: KEY VALUATIONS

All teachers and pupils valued:

- > the opportunity for first hand experience of these special natural places
- > encounters with aspects of nature, particularly other species
- > distinctive and memorable multi-sensorial aspects of experiences
- > the opportunity for a more relaxed or less hurried approach
- > the opportunity for engagement in fun, yet purposeful, group- and self-directed tasks
- > opportunities to get to know a particular natural place well
- > opportunities for new challenges that came through being outdoors in nature

Benefits and Effects.

There was the potential for:

- > greater enthusiasm, attentiveness, and focus in pupils' learning
- > improved health and physical ability, and self-esteem in pupils
- > enriched and more inclusive cultures of learning within class groups, brought about through changed and improved relations among pupils and between teachers and pupils

Teachers valued the way excursions could:

- > be focal points providing a platform for learning and changing pupils relations with nature
- > help with meeting formal curricular demands, for example the experiences and outcomes of Curriculum for Excellence
- > provide the opportunity for either inter-disciplinary study or single-subject approaches
- > provide opportunities to develop their own expertise (see 'key activities', above)



Pupils from North Lanarkshire schools visited Cleghorn Glen in Clyde Valley National Nature Reserve

FINDINGS E: KEY FACTORS

We found that excursions were made possible through the interaction of key factors, any one of which could work as an enabler, or inhibitor for the planning and enactment of excursions and related work.

Place

- > The seasonal, topographical, geological and ecological characteristics of the place
- > Planning with place in mind
- > Teachers' level of knowledge (about the place, possible strategy, and topic)

Teacher

- > Teacher dispositions especially towards teaching outdoors
- > Teachers own personal and professional biography in relation to outdoor experiences in nature
- > Teachers understanding and approach to planning including health and safety
- > Teaching and Learning Processes
- > Pupils' dispositions: preparedness to be and learn outdoors
- > Teachers' designs for purposeful, meaningful, active tasks

School

- > Head teacher and senior management support
- > Collegial support
- > Supportive school culture
- > Supportive curricular structures
- > Financial support (as required)

Other Support

- > Advance visits and collaborative planning
- > Parental support
- > Resource for travel to sites
- > Specialist support staff

For more information on research and knowledge exchange at the School of Education, please log on to www.ioe.stir.ac.uk



A school group meets with Scottish Natural Heritage, National Nature Reserve site manager, Martin Twiss

IMPLICATIONS FOR INITIAL TEACHER EDUCATION (ITE) AND CONTINUING PROFESSIONAL DEVELOPMENT (CPD)

- > ITE / CPD for teaching in nature needs to provide opportunities for teachers to actively develop their own expertise through engaging in the key teacher activities (see above). Teachers gain a lot from collaborative with colleagues to actively plan, design, enact and review excursions and relevant pre- and post-visit activities.
- > ITE / CPD for teaching in nature needs to take account of the key valuations (see above). One possible implication is that CPD too would likely be more effective if it includes first-hand experience, includes multi-sensorial encounters with places, takes a less hurried approach, uses participatory, fun yet purposeful tasks, and provides opportunities for participants to get to know a place well.
- > ITE / CPD for teaching in nature needs to address the key factors (see above) as these can support or inhibit teaching in nature. Insofar as possible, programmes should be delivered in a locally relevant way and allow teachers to tailor what they require. Programmes need to acknowledge and address the changing developmental needs of teachers, their personal and professional biographies, and their disposition to teaching in nature.

