Real World Learning Network

UK Research by the Field Studies Council and Council for Learning Outside the Classroom

Real World Learning

Summary

1.1 Key Points

The research raised the following key points:

- There is a strong recognition of quality criteria amongst outdoor learning providers. There is, however, more work to be done to assess learning in a holistic and accessible way.
- Outdoor science is viewed as a strongly supportive (essential) element of sustainability. More work needs to be done to integrate big scientific issues and concepts such as climate change and eco-system services. Work needs to be done to show how outdoor science can link with national and international issues of current importance.
- Outdoor learning has a strong focus on changing the behaviour and attitudes of learners, especially towards nature and the conservation of nature. There is less evidence to support if outdoor learning can support social change.
- There is very limited connection between outdoor science and how that learning can be applied to the world of work.
- The traditional threats to outdoor learning are still exist: funding, lack of political support, health and safety. More work needs to be done to remove these barriers.

1.2 Strengths, Weaknesses, Opportunities and Threats for Outdoor Science

The following strengths, weaknesses, opportunities and threats have been identified from the research, and it is recommended that they are considered by the working groups.

Strengths	Weaknesses
• Most providers assess learning • Quality Badge widely recognised • Strong focus on behaviour and attitude change of learners • Divergent assessment approaches (also a weakness) • Strong believe in learning for change and sustainability • Sustainability and outdoor science seen as very compatible • Diversity of learning approaches and opportunities	• Divergent assessment approaches (also a strength) • Quality Badge seen by some as weak for assessing learning • Evidence of behaviour change difficult to gather • Some provider find it challenging to encourage schools to extend outdoor learning back to classroom environment • Focus on the natural world rather than human-nature interactions • Focus on nature/conservation behaviour rather than social change • Limited connection between outdoor science and careers
Opportunities	**Threats**
• Demonstrate long term benefits of outdoor science • How can we make assessment more accessible? • Can we assess the whole learning experience? • Increase the social change element in learning • Engaging learners in big scientific issues and national/international issues • Demonstrate wider benefits of outdoor science for health and well-being • Provide 'library' of good learning approaches	• Ongoing funding cuts • Level of political support given to outdoor science • Perceived risks in outdoor science • Traditional schools seen as 'best' method for education • Teachers who perceive outdoor science of limited value

In-Depth Report

2.1 Methodology

The methodology was designed to answer the questions set out on the Guidelines for Baseline Research. The questions listed in the guidelines were reviewed. Three approaches were used to collect data. Firstly a questionnaire was developed and uploaded to Survey Monkey to collect responses online. The questionnaire was structured around the four Working Group themes and focused on questions that could not be adequately answered using secondary sources of information. Phone and Skype interviews were conducted with key outdoor learning providers. They were provided with the questionnaire results in advance and asked to discuss gaps in the results, and their own views on the four themes. Finally, secondary data sources were reviewed.

2.2 Target Group

The target groups for the research were teaching staff in schools and outdoor learning providers. A total of 29 responses were received to the online questionnaire and 10 people interviewed by phone or Skype. To give a sample of the range of people that responded, they included: field tutors, head teachers, directors of adventure education providers, heads of local authority outdoor education services, outdoor learning advisors, and outdoor education instructors.

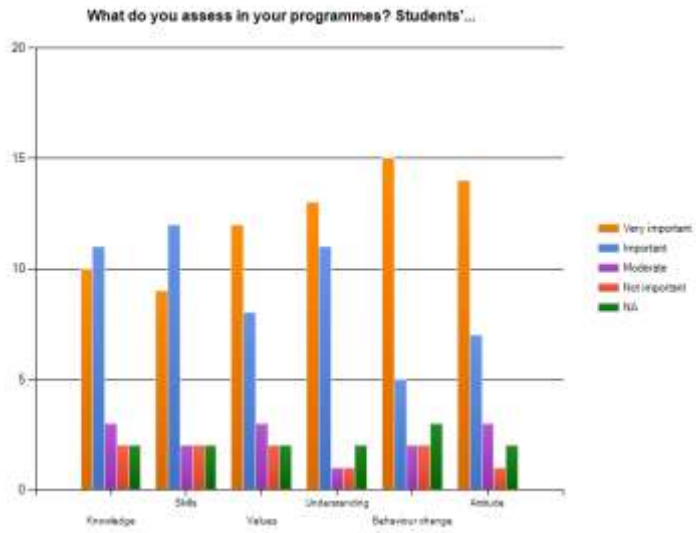
2.3 Review of Questionnaire Results

The research carried out focused on the four Working Group themes.

Theme 1: Developing quality criteria for success and assessment for learning

Four questions were used to explore this theme.

What do you assess in your programmes? The chart below summarises the responses. There is a clear emphasis towards soft skills such as behavioural change and attitudes rather than knowledge and skills. The additional comments provided interesting views on what is assessed. Some common responses included:



helping young people learn more about themselves, enthusiasm & happiness, confidence & self esteem, well-being, reducing anxiety, and enjoyment & engagement. Clearly educators view outdoor learning as more than learning about the environment and perceive the 'soft' outcomes as very important. Only one respondent mentioned a specific assessment tool, the OEAP Document in High Quality Outdoor Education (http://www.englishoutdoorcouncil.org/HQOE.pdf). However, this is covered in more detail below.

How do you assess learning in your outdoor programmes? There is a wide range of summative and formative techniques used to assess learning. Six respondents stated they use a formal pre and post course assessment; helping to plan effectively and set levels appropriately pre-course and evaluate learning post course. A variety of summative techniques are employed mainly focusing on observation, open ended questions and group discussion. Only two respondents stated that they did not assess learning.

Do you use quality criteria to guide the delivery of your learning? Fourteen respondents stated that they use the Learning Outside the Classroom Quality Badge (lotcqualitybadge.org.uk/ - the scheme is aimed at external providers not schools so it is not expected that respondents from school use this scheme), although two users felt the assessment of learning needed to be strengthened. One respondent mentioned the Association for Heads of Outdoor Education Centres Gold Standard (ahoec.org/about/gold-standard/). Gold Standard centres are also LOtC Quality Badge accredited. Other respondents mentioned general curriculum documents such as Every Child Matters and Early Years Foundation Stage Framework.

What key questions or issues would you like the network to explore regarding assessment and criteria for outdoor learning? A range of responses were received:

- How to demonstrate the long term benefits of fieldwork/outdoor science?
- We need more work within schools on assessing the quality of outdoor learning.
- How to assess marginalised (learning with special educational needs) learners?
- Can outdoor learning raise the expectation of young people?
- How to assess learners experience as opposed to increased knowledge?
- How to make assessment accessible?
- Can we assess the well-being of learners?
- How can we assess values changes and the holistic development of learners?

Theme 2: Outdoor science and sustainability

Four questions were used to explore this theme.

How do you define outdoor science and education for sustainability? A representative selection of responses includes:

Outdoor Science	Education for Sustainability
Using a scientific approach to answer questions about the environment (natural or built).	Providing the skills for individuals to identify and critically assess impacts of human activity on the environment and strategies to manage this.
Activities that help you learn and understand about the natural environment.	Learning how the natural world works and how this knowledge can be used to ensure the world is here for future generations
Outdoor science is: using the outside environment and space to deliver a Science based curriculum.	The ability to work in balance with nature and sustainable resources.
Discovery, appreciation, and experimentation with the natural world.	Teaching the children to leave nothing but footprints and to take nothing but memories. If we teach the children to love nature they will learn to respect it.
The earth's processes, environments and their interactions with us.	Connecting learners with the natural world and seeing how their own actions affect that world.
Outdoor Science is the science associated with the natural world.	Changing and supporting values which underpin ones movement towards increasingly sustainable living.
Study of the natural evolution and functioning of the planet.	A process whereby people's interdependence on the environment is developed and the impact of human behaviour.

How can outdoor science be used to teach about sustainability? Replies broadly fell into two categories: using science to understand how natural systems work; and using science to encourage action to be more sustainable. Outdoor science is seen as important to understand how the natural world works and how natural

systems are influenced by man. There is a strong feeling that such understanding leads, or should lead to, increased motivation and action for sustainability – 'helping people to walk the talk.' Interestingly only two respondents mentioned scientific understanding of the natural world as supporting emotional responses and values change.

Where do you see the overlap between these two areas? How do/should they contribute to each other? There is strong agreement that sustainability and outdoor science complement each other. Bringing science into sustainability strengthens discussions of sustainability issues. It is seen that in particular outdoor science helps engage learners more effectively.

What are the key questions or issues you would like the network to explore regarding outdoor science and sustainability? A number of respondents would like the network to explore how to engage learners more effectively in big scientific issues such as climate change and ecosystem services, and how to visualise relatively abstract concepts such as climate change and the water cycle. The issue of addressing national and international politics and its influence on sustainability was also raised. There was one comment about how to embed sustainability across all outdoor learning, not just taught academic courses.

Theme 3: Pedagogical approaches to outdoor learning

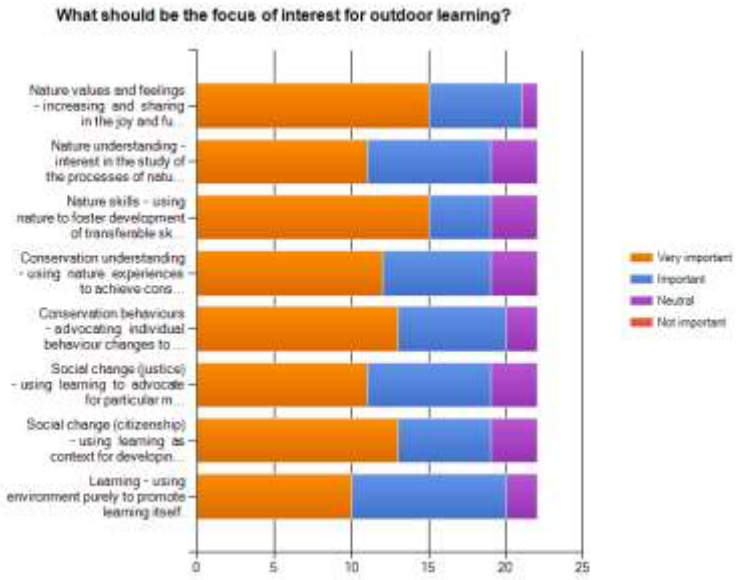
Six questions were used to explore this theme.

What socio, cultural and political values underpin outdoor learning? This is a very wide and challenging question, rather than trying to summarise the responses, some typical responses were:

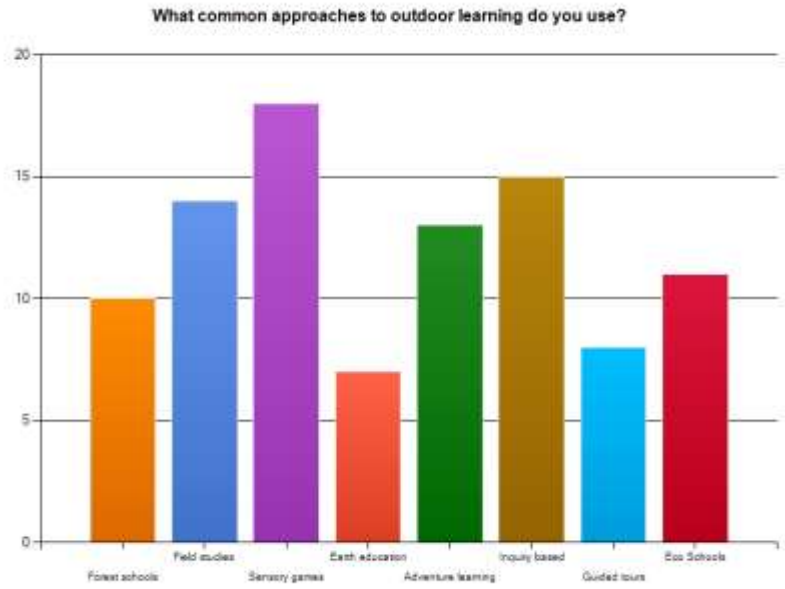
- The advancement of outdoor learning will continue to be a marginal part of education unless we think differently about factors such as our attitude to risk. A real understanding of the long term benefits that the greater expenditure for outdoor learning compared to indoor learning has for individuals physical, mental and spiritual development i.e. healthier people are going to need less medical care, people who feel good about themselves are likely to feel better about their relationships with others and the world in general.
- This is a very big question...some scattered thoughts are: We are still 'suffering' the effects of the invention of school (the institution) as the seat of learning and the crucible of personal development. While this continues to be the case, politically and culturally, we will continue to be spending most of our time persuading the Government of the day and schools that there are benefits to outdoor learning that are beyond those offered by a school. The outdoors is culturally and socially linked to leisure - something used in free time, and this too hampers the view that it is in any way essential or central. While the stereotype exists of the businessman who goes to work in an office from 9 until 5...that too perpetuates the status quo. A 'traditional field centre' has historically approached the issue by trying to demonstrate that learning can be achieved in a setting other than school. All work done by this group/network should be seeking to demonstrate a wider, fuller range of benefits or outdoor learning and outdoor experiences. I see it as chipping away by weight of numbers.
- The continual increase of the human population, the impact of human activity (negative and positive) and civilisation on the environment. I can only comment on nature/environmental learning. I often get people saying ' this is what we used to do as kids'. It seems that today children are not allowed or cannot go to do this sort of play/learning - den building, pond dipping etc. Funding is never enough and is the first to be cut - the 'powers to be' DO NOT FULLY UNDERSTAND WHAT A POSITIVE IMPACT this learning has -they say the right thing, but do not come up with funding. This problem is that this sort of learning is difficult to measure, and often impacts are not seen straight away.
- Questions about national politics and its influence on sustainability, the natural world, humanity and the future. Health and safety & fears of a compensation claim [very present in the 90's in UK], have left our teachers woefully short of in-depth experience at taking groups into a properly natural outdoor environment for meaningful durations.
- We are sometimes too hung up on funding. If, as results indicate, adults experienced the natural environment far more when they were children than children do today, there was not more funding around then …. People just got on and did it without creating perceived barriers!! It costs nothing to access the natural environment, and all schools have access to it (albeit that the quality or type may differ).

Should outdoor learning be promoting a specific set of values? A number of respondents mentioned various forms of respect – respect for self, others, environmental, for all species. Other respondents, however, questioned whether outdoor learning should be promoting a specific set of values. For example, one responded replied that outdoor learning should be trying to promote engagement, exploring mutually shared values and offering opportunities to explore them.

What should be the focus of interest for outdoor learning? Values are seen as a very important part of outdoor learning – see results in chart. There is a tendency within the responses to view the focus of outdoor learning as developing to change behaviours encourages greater protection and conservation of the natural world. The use of outdoor learning to promote social change is viewed of less importance.



What common approaches to outdoor learning do you use? The results showed that sensory learning activities are the most commonly used approaches. Field studies and enquiry learning are also common. Least common is earth education and guided tours.



Does outdoor learning provide an adequate response for young people entering an increasingly uncertain and complex future? Respondents view outdoor learning as having the potential (if not already doing so) to make a big contribution. However, many respondents noted that outdoor learning by itself is far from sufficient but does help young people make sense of the situation they find themselves in. It was also noted that outdoor learning encourages learners to respond positively to the new and the unknown, and raises aspirations, self-worth and confidence. One respondent noted that dogs have a legal right to daily outdoor exercise yet young people do not.

What are the key questions or issues you would like the network to explore regarding pedagogical approaches to outdoor learning? Some responses include:

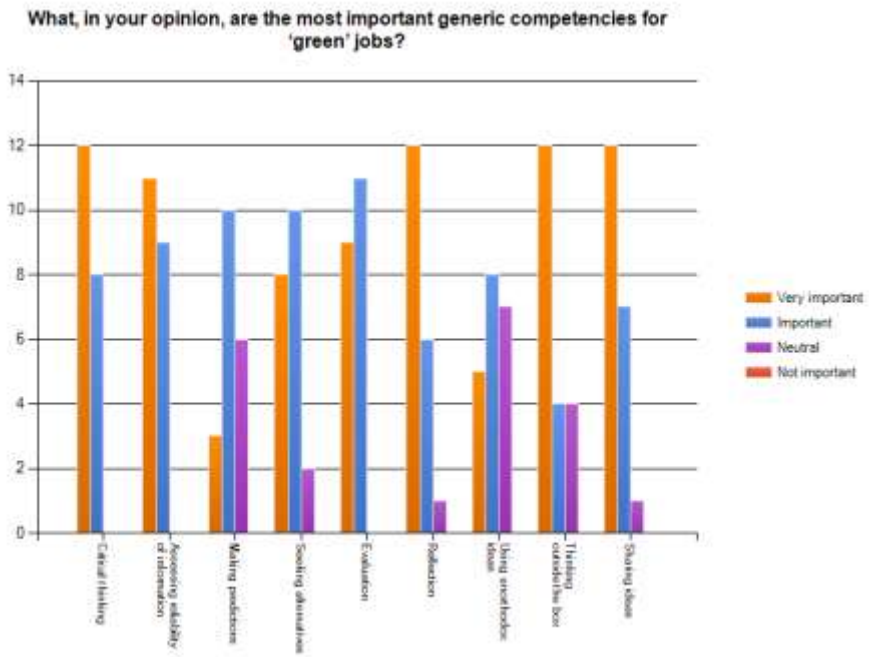
- How can we engage young people with the environment if they have little or no appreciation of the environment beyond their immediate experience?
- How will we retain such pedagogical approaches in the present government's move to 'traditional' education and the age of austerity?
- It would be useful to gather and explore a library of specific approaches - examples of learning that has been judged 'successful' using a range of approaches. I am wary of listing 'good' and 'bad' approaches, or 'appropriate' and 'inappropriate' values, because by logical extension we would limit the 'uses' of the outdoors, and minimise therefore the opportunities.
- How outdoor learning can be simplified.
- Encouraging those working with children and young people to get outside, offering a database of organisations and people who can help them and those they care for explore the world outside what they know.
- Promoting the benefits of outdoor learning and changing attitudes of teachers in mainstream education who may not see it being as valuable as classroom learning as there is less 'evidence' (e.g. written things) to show that children have learnt.
- Inquiry based learning improving problem solving skills.
- What are the effective methods?
- Are high levels of inspiration, challenge and fun frequently within learning plans? How to ask bigger questions in bigger forums about national politics and its influence on sustainability, the natural world, humanity and the future.

Theme 4: Real world learning and developing career competencies

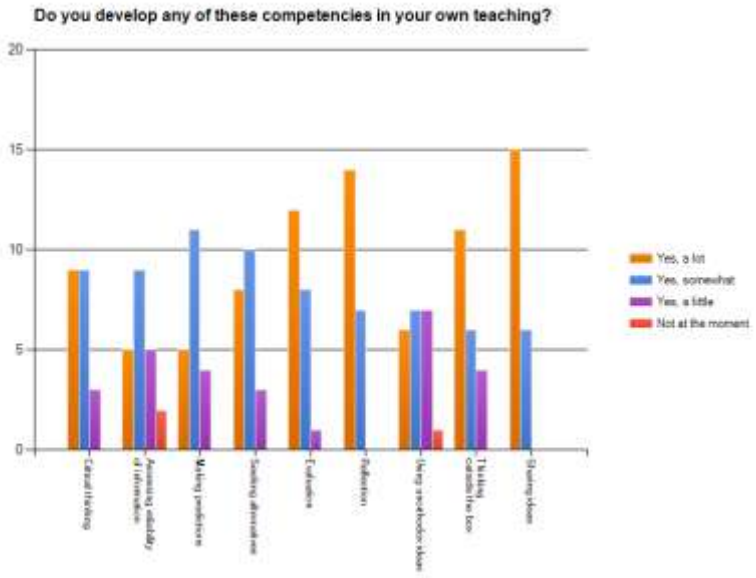
Five questions were used to explore this theme. Note that the phrase 'green' competency refers broadly to the competencies required to integrate sustainability thinking into all careers, not just environmental careers.

Are you aware of any 'green' competency guides? 79% of respondents had not heard of green competency guides, however, written responses show some confusion with this question.

In your opinion what are the most important generic competencies for 'green' jobs? Critical thinking, evaluation, reflection, thinking outside the box and sharing where thought of as the most important generic skills. Assessing information, making predictions and seeking alternatives were also seen as important.



Do you develop any of these competencies in your own teaching? The results are similar to the question above, however, respondents appear less confident that the competencies are developed as opposed to the necessity for them.



Can/should outdoor learning support competencies for 'green' careers? The overwhelming response to this question was yes, however, there was some confusion over the term 'green' jobs which lead to a range of responses. Several respondents focused on environmental jobs e.g. outdoor teacher, ecologist, rather on the competencies that could bring environmental thinking to all careers – engineers, architects, etc.

What are the key questions or issues you would like the network to explore regarding competencies for 'green' careers? Most respondents did not feel confident to respond to this question. There were responses focusing on making environmental learning relevant to careers. Clearly there is a need for more clarity in this area.

2.4 Summary of results from phone and Skype interviews

Phone and Skype interviews were held with 10 people. Each interview started with a review of the questionnaire results but did not follow a formal structure. The notes below are loosely structured on the working group themes.

Theme 1: Developing quality criteria for success and assessment for learning

There is a need to provide proof of impact for outdoor learning, how to assess this impact is important:

- How does the outdoor learning experience impact learners? Where does the experience impact – daily choices, careers, academic achievement?
- The focus of assessment should not be about better exam results in specific areas (e.g. succession in ecology), rather can well planned motivating outdoor learning affect better exam results/academic results all round? i.e. does it lead to enhanced attainment?
- Benefits of evidence on political decision-making – many people agree that outdoor learning is a good thing, but it is still not viewed as of central importance despite all the evidence. Are outdoor learning benefits widely accepted enough? Where should outdoor learning try to position itself....as compulsory?

How do we assess behavioural change? What is the impact of natural experiences on future attitudes? What does 'good' look like?

How do we set criteria for individual progression, differentiated learning set against clear learning outcomes with support national themes and government objectives? Also, how to assess the quality of the teaching as opposed to the learner?

Theme 2: Outdoor science and sustainability

Science and sustainability needs to be seen as a process of gaining understanding not the knowledge itself as the end point...how is that learning achieved? These are transferable skills that outdoor learning can/should focus on.

A lot of outdoor learning pays lip service to sustainability. How can site based learning integrate broader environmental issues into learning?

Ecosystem services needs to be given greater importance as a key big concept.

Can we consider how outdoor science can link to cross curricular sustainability themes, otherwise it could become lost as a science only topic.

Theme 3: Pedagogical approaches to outdoor learning

Outdoor learning should be about learning not content per se, about the motivational and enjoyment aspects of learning.

Ensure that we take influences from adventure education and their effective pedagogies for affective learning to support outdoor science and connecting with sustainability on a personal/emotional level. How do we build emotional responses into learning?

How do we develop approaches that link effectively with classroom based follow-up? How can we extend the contact time with learners before and beyond the outdoor learning experience? What training and support can we provide for teacher so that they have the skills and confidence to follow-up outdoor science activities back in the school.

There needs to be more clarity about how outdoor learning can develop values for classroom/life e.g. outdoor learning is great at challenging young people, how can this element of challenge then be taken back into the classroom and life in general?

2.5 Current Outdoor Learning Quality Criteria

The main outdoor learning quality criteria are provided by the Council for Learning Outside the Classroom's Quality Badge. The LOtC Quality Badge provides a national award combining the essential elements of provision - learning and safety - into one easily recognisable and trusted accreditation scheme for all types of learning outside the classroom (i.e. from museums to natural environment, and art galleries to farms and adventurous activity centres). The scheme is managed and developed by the Council for Learning Outside the Classroom. In order to achieve an LOtC Quality Badge, external providers must show that they meet a set of quality indicators. There are six high level generic quality indicators. They are:

1. The provider has a process in place to assist users to plan the learning experience effectively;
2. The provider provides accurate information about its offer;
3. The provider provides activities or experiences which meet learner needs;
4. The provider reviews the experience and acts upon feedback;
5. The provider meets the needs of users; and
6. The provider has safety management processes in place to manage risk effectively.

More information can be found from lotcqualitybadge.org.uk/. The CLOtC are currently working on the LOtC Mark, a scheme for schools to assess outdoor learning.

The English Outdoor Council has produced guidance for High Quality Outdoor Learning (http://www.englishoutdoorcouncil.org/HQOE.pdf). Whereas this is not an accredited scheme, it does offer guidance and support in ensuring high quality outdoor learning with a focus on adventure activities. It lists ten core outcomes: enjoyment, confidence, social awareness, environmental awareness, activity skills, personal qualities, key skills, health & fitness, increased motivation & appetite for learning, and broadened horizons.

2.6 Secondary Reports

Over the last 20 years there has been an increasing body of research and evidence into learning outside the classroom. We have selected research and evidence relevant to outdoor science and the questions agree in the Real World Learning research brief.

Learning Outside the Classroom Baseline Research
This research was conducted in 2009 on behalf of the Council for Learning Outside the Classroom (LOtC). It provides useful indicators to the take up of outdoor learning. It is important to note that in the research LOtC included visits to museums, historic buildings, etc. Key findings from the research are:

- Pupils in England spend just under 4% of their school time engaged in LOtC.
- Of this, three quarters are Category 1 (in or around the school) activity and the remaining quarter in Category 2 & 3 activity which involves longer activity requiring more detailed planning, including residential experiences.
- Children in primary schools spend more than twice as much time (3.7%) engaged in Category 1 activity than pupils in secondary education (1.6%).
- At primary level, almost all pupils (93%) are engaged in Geography / Environmental activities and almost as many (87%) in Arts activity with slightly fewer engaged in History associated activity (83%) and English and Drama (80%). Pupils are least likely to have LOtC experience of IT (42%), Design & Technology (58%) and Personal Development (58%).
- At secondary level, Category 1 LOtC is similarly dominated by Geography/Environmental activities (95%) with Science and Mathematics as the next most provided activity (90%) followed by History and Art (both 85%). Personal Development and IT were the least likely subjects to be offered outside the classroom but, even here, half (50%) of schools offered some activity.
- Data for activity in Categories 2 & 3 is not available separately for primary and secondary levels but, taken together, all pupils were engaged for a total of 13.75 million days worth of activities in 2009.
- Of this total, Leadership and Team Development was the most common activity (1.8m days) followed by Adventure Education (1.4m days) and Geography – where fieldwork is a compulsory curriculum element - almost 1.1m days.
- The overall estimate for time spent learning outside the classroom is 52 million days per year for a school population of just over 7 million, i.e. 7.3 days per young person per year.

Practical Experiments in School Science Lessons and Science Field Trips
Between 2010 and 2012 the House of Commons Science and Technology Committee explored the topic of science field trips taking evidence from over 30 organisations and individuals. Below is a summary of key findings relevant to RWL, the full report can be found at http://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/inquiries/parliament-2010/school-science/. The committee concluded that:

- Both practical and learning outside the classroom are essential contributors to good quality science education.
- All trainee teachers should be expected to prepare successfully and lead at one fieldwork session.
- Fieldwork is a required component of science courses.
- The government has to ensure students appreciate that the practical side of the sciences can lead to employment opportunities.

Beyond Barriers to Learning Outside the Classroom in Natural Environments
Research was undertaken by Kings College London and published in December 2010 – full report from http://www.naturalengland.org.uk/Images/LOtC-barriers-analysis_tcm6-31083.pdf. The report aimed to extend and develop the understanding of the nature of the barriers to learning outside the classroom. The

report found that several barriers do exist for both the natural environment sector and schools, and that the sector faces barriers in coordinating effective approaches to working with schools. Further challenges exist in the form of teacher's confidence, self-efficacy and their access to training. The report made three key recommendations:

- The natural environment sector should provide schools with a compelling rationale for learning outside the classroom in the natural environment that sets out the evidence for impact and shows how barriers, both institutional and individual, can be overcome.
- The natural environment sector needs to support staff in schools locally to develop their capacity to use activities and resources that promote learning outside the classroom in natural environments within their vision of effective information.
- The natural environment sector should develop working practices that provide schools with coherent and effective services for learning outside the classroom in natural environments, which overcome barriers and facilitate collaboration between providers as well as reflecting local needs and opportunities.

Understanding the Diverse Benefits of Learning in Natural Environments

This is research carried out by Kings College London and published in April 2011. The full report can be found at http://www.lotc.org.uk/2011/09/understanding-the-diverse-benefits-of-learning-in-natural-environments/. The research found that:

- Despite increasingly robust evidence of these benefits, many children are losing their connection with nature. Worse still, children in urban environments are particularly disadvantaged. For example, nowadays 10% of children play in the natural environment compared to 40% of adults when they were young. This 'extinction of experience' has a detrimental long-term impact on environmental attitudes and behaviours. A cultural shift is required, both at home and at school, before the situation can be reversed.
- The diversity of benefits of learning in natural environments offer a potentially compelling rational for increasing access to LINE for all young people. However, as yet, the findings have not been assembled into a coherent case targeted at key decision makers.
- A broad range of skills ranging from the technical to the social have been identified as outcomes of learning in natural environments, particularly when it is integrated with the everyday school curriculum.
- Hands-on contact with nature is not only essential for protecting the environment but appears to be a means of cultivating community and enhancing the mental health and wellbeing of children and adults alike.
- Structured activities, such as those commonly occurring in sustainability education, are powerful catalysts for creating a stronger sense of community - both within and beyond school boundaries.

The Impact of Residential Adventure Education on Primary School Pupils

This is a piece of doctoral research carried out between 2010 and 2011 by Randall Williams. The results provide interesting insights into the benefits of residential adventure education with relevance to outdoor science. The research suggests that residential adventure education is a complex process, with many interacting influences. The following aspects of the process were apparent:

- The nature of the learning environment creates novel experiences which are quite different from those accessible in a classroom environment.
- Being in a new situation creates a disequilibrium which has the effect of raising the energy levels of pupils. Two key factors that provide that energizing influence are the element of challenge and the social dimension.
- The social dimension also acts as a catalytic factor which reinforces the impact of other aspects of the course. Other catalytic factors include the importance of the affective nature of the experience, its holistic character and the way in which all the factors interact with and reinforce each other.
- Cementing factors include the memorability of the experience and the intrinsic nature of the reward.

Outcomes identified by participants in the research include confidence, inter-personal awareness, maturity, interaction effects (in which whole group behaviour emerges) and transformative effects – such as a step change in confidence.

Complexity theory was used as an underpinning theoretical perspective. Viewing residential adventure education as a complex system suggests the exciting possibility that the non-linear, transformative step change is a natural and inevitable consequence of the emergence that arises from the complex nature of the system.

Outdoor Science: A co-ordinated approach to high-quality teaching and learning in fieldwork for science education

This is a report published by the Association for Science Education in 2011 – full copy from http://www.gettingpractical.org.uk/documents/ase-outdoor-science-report.pdf. The report sought to address the 'long-term and continuing decline in the provision and condition of outdoor education in science.' The report produced six recommendations:

- Ensure fieldwork training is included in all teachers training with a coordinated programme established to promote effective pedagogy.
- A dedicated outdoor science website aimed at teachers, technicians and outdoor educators should be created to sign-post, exchange and compare high-quality fieldwork training resources.
- Teacher designations should include an opportunity for early-career teachers to demonstrate their effective use of fieldwork and for more experienced teachers to demonstrate their own role in providing fieldwork training.
- Examination bodies should be provided with flexibility and support to increase open ended summative assessment that recognise the skills that are primarily developed through fieldwork.
- A co-ordinator research programme should be developed to further investigate the educational impacts of fieldwork in science.
- Providers and supporters of outdoor science should combine their influence to support positive attitudes towards fieldwork in science.

Annexes

The full survey results are available in pdf format from the Field Studies Council. Please email Richard Dawson, richard@field-studies-council.org.