

A review of
**Research on
Outdoor Learning**

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Executive summary

Introduction

There is growing concern that opportunities for outdoor learning by school students in England have decreased substantially in recent years. In response to this, and recent Government calls for 'schools to make better use of the outdoor classroom as a context for teaching and learning',¹ the Field Studies Council (FSC) and several partner organisations commissioned the National Foundation for Educational Research (NFER) to undertake a review of research on outdoor learning.

This document summarises the key findings of this review, which critically examined 150 pieces of research on outdoor learning published in English between 1993 and 2003. The literature encompassed three main types of outdoor learning with primary school pupils, secondary school students and undergraduate learners:

- fieldwork and outdoor visits
- outdoor adventure education
- school grounds/community projects.

The project was undertaken during a six-month period from August 2003 to January 2004, and was funded by the Field Studies Council, Department for Education and Skills, English Outdoor Council, Groundwork, Royal Society for the Protection of Birds, and Wildfowl and Wetlands Trust.

The impact of fieldwork and visits

- Substantial evidence exists to indicate that fieldwork, properly conceived, adequately planned, well taught and effectively followed up, offers learners opportunities to develop their knowledge and skills in ways that add value to their everyday experiences in the classroom.

- Specifically, fieldwork can have a positive impact on long-term memory due to the memorable nature of the fieldwork setting. Effective fieldwork, and residential experience in particular, can lead to individual growth and improvements in social skills. More importantly, there can be reinforcement between the affective and the cognitive, with each influencing the other and providing a bridge to higher order learning.

- Despite the substantial evidence of the potential of fieldwork to raise standards of attainment and improve attitudes towards the environment there is evidence that the amount of fieldwork that takes place in the UK and in some other parts of the world is severely restricted, particularly in science.

- The number of studies that address the experience of particular groups (e.g. girls) or students with specific needs is negligible, although those that have been done draw conclusions that are important in terms of both policy and practice. Some children are more likely to take part in fieldwork than others for a range of reasons, many of which could and should be addressed.

- A minority of studies provide a health warning to proponents of outdoor education. Poor fieldwork is likely to lead to poor learning. Students quickly forget irrelevant information that has been inadequately presented.

The impact of outdoor adventure activities

- Strong evidence of the benefits of outdoor adventure education is provided by two meta-analyses of previous research. Looking across a wide range of outcome measures, these studies identify not only positive effects in the short term, but also continued gains in the long term. However, within these broad trends, there can be considerable variation between different kinds of programmes, and different types of outcomes.

¹ <http://www.teachernet.gov.uk/teachingandlearning/resourcematerials/growingschools/>

- There is substantial research evidence to suggest that outdoor adventure programmes can impact positively on young people's:

- > attitudes, beliefs and self-perceptions – examples of outcomes include independence, confidence, self-esteem, locus of control, self-efficacy, personal effectiveness and coping strategies

- > interpersonal and social skills – such as social effectiveness, communication skills, group cohesion and teamwork.

- The evidence base for cognitive and physical/behavioural benefits is less strong than for affective and interpersonal/social outcomes. In cases where there is a focus on such measures, however, there are examples of outdoor adventure programmes yielding benefits in terms of:

- > the development of general and specific academic skills, as well as improved engagement and achievement

- > the promotion of positive behaviour and reduced rates of re-offending, and improved physical self-image and fitness.

- In relation to fostering environmental concern and awareness, the evidence of a positive link between outdoor adventure activities and environmental understanding and values is not strong. There seems to be a strong case for questioning the notion that nature experience *automatically* contributes to environmental awareness, commitment and action.

The impact of school grounds/community projects

- School grounds/community projects have the capacity to link with most curriculum areas. Two specific examples of benefits stemming from this are positive gains in science process skills and improved understanding of design and technology-related issues.

- In the affective domain, the most important impacts of learning in school grounds/community settings include greater confidence, renewed pride in community, stronger motivation toward learning, and greater sense of belonging and responsibility.

- There is significant evidence that social development and greater community involvement can result from engagement in school grounds projects. Students develop more positive relationships with each other, with their teachers and with the wider community through participating in school grounds improvements.

- Few studies have focused on physical and behavioural impacts of school grounds/community projects. However, there is some evidence that school grounds educational projects are able to improve children's physical being through better quality play and through an increased motivation to eat more healthily and to take more exercise.

- Compared with research on fieldwork/visits and outdoor adventure education, there is a need for a greater number of rigorous in-depth studies on outdoor learning in school grounds and community settings.

Factors influencing outdoor learning and its provision

- The review suggests that it is helpful to distinguish between:

- > factors that can influence *the provision* of outdoor learning by schools, teachers and others

- > factors that can influence *the nature and quality* of young people's learning in outdoor settings.

- It is clear that the provision of outdoor learning in schools and universities is affected by a wide range of barriers and opportunities. Notable barriers include: (i) fear and concern about health and safety; (ii) teachers' lack of confidence in teaching outdoors; (iii) school and university curriculum requirements limiting opportunities for outdoor learning; (iv) shortages of time, resources and support; and (v) wider changes within and beyond the education sector.

- Opportunities for outdoor learning provision, though, are also noted in the form of: (i) new legislation and regulations such as those relating to safety at outdoor activity centres; (ii) recent curriculum developments and initiatives such as the

revised National Curriculum in 2000; and (iii) developments in UK higher education that (as well as challenges) have provided scope for innovation in university fieldwork teaching.

- These various factors make clear the complexity of the challenge facing policy makers, practitioners and others who are seeking to increase and improve young people's access to learning beyond the classroom and the school.

- The research that has been undertaken into students' experiences of outdoor learning activities suggests that there are several factors that can facilitate and/or impede learning in outdoor settings. These can be conceptualised in terms of:

- > programme factors – including the structure, duration and pedagogy of outdoor education programmes
- > participant factors – including the characteristics, interests and preferences of learners
- > place factors – relating to the nature and novelty of the outdoor learning setting.

Taken together, these factors provide a framework for thinking about how efforts to improve the quality and depth of young people's outdoor learning might be directed.

Conclusions and implications

Against the backdrop of calls for educational practice and policy to become more evidence-based, there is much in this review that is of relevance and use to practitioners, policy makers and researchers. With this in mind, it is important that the findings of this review are considered not just in terms of how they might help to *prove the value* of outdoor learning, but also in terms of how they might help to *improve its quality*.

Key messages for practice

- The review highlights demonstrable benefits for several types of outdoor learning. These findings should provide a source of support and justification for practitioners seeking an evidence base for the area of work in which they operate.

- More specifically, the review gives a clear endorsement for certain kinds of outdoor learning provision. Research indicates the value of programmes which: (i) provide longer, more sustained outdoor experiences than is often provided; (ii) incorporate well-designed preparatory and follow-up work; (iii) use a range of carefully-structured learning activities and assessments linked to the school curriculum; (iv) recognise and emphasise the role of facilitation in the learning process and (v) develop close links between programme aims and programme practices.

- The research also throws up several important challenges for practitioners. These include: the fact that the aims of outdoor learning are not always realised in practice; the different types of barriers faced by individual students in learning out-of-doors; the unresolved issue of the relative benefits of novelty and/or familiarity with the outdoor learning setting; and the fact that the benefits of outdoor learning are not always sustained over time.

- These challenges raise important questions for those involved in organising and undertaking outdoor learning activities. Deliberation and reflection about such issues could help to inform the strategic planning and development of organisations involved in providing outdoor learning opportunities for young people. They could also help to direct the ways in which school staff think about the structure, focus and timing of outdoor learning within and beyond the curriculum.

Key messages for policy

- Those with a statutory and non-statutory responsibility for policy relating to outdoor education should be in no doubt that there is a considerable body of empirical research evidence to support and inform their work.

- Policy makers at all levels need to be aware of the benefits that are associated with different types of outdoor learning. The findings of this review make clear that learners of all ages can benefit from effective outdoor education. However, despite such positive research evidence and the long tradition of outdoor learning in this country, there is growing evidence that opportunities for outdoor learning are in decline and under threat.

- There is an urgent need for policy makers at all levels and in many sectors to consider their role in:

- > tackling barriers that stand in the way of the provision of effective outdoor education for all students
- > encouraging good programmes and practices and capitalising on policy developments, for example, by linking initiatives in different sectors
- > supporting research, development and training so that good practice can be understood, disseminated and fostered.

- This has implications for action across a range of policy sectors nationally, regionally and locally, including education, health, environment and science.

Key messages for research

- This review makes clear the substantial amount and range of research that has been carried out in outdoor learning in the 1990s and 2000s. It also highlights a number of encouraging signs in this field, such as a diversification of research approaches and foci, and a growth in theoretical/critical exploration and meta-analyses/research syntheses.

- The current evidence base, however, is not without weaknesses or potential areas for improvement. A good proportion of the research in this review originated from beyond the UK, and there is a particular need for more UK-based research into a number of aspects of outdoor learning. Examples include: the extent of outdoor learning provision available to school and university learners in this country; the effectiveness of outdoor learning programmes that seek to build progression from local environments to more distant learning contexts; the sorts of fears and concerns that young people can bring to different kinds of learning situations beyond the classroom; teachers' and outdoor educators' conceptions of 'the outdoor classroom'; and the cost-effectiveness of different kinds of outdoor learning.

- In order for these gaps to be addressed, attention will need to be given to two important issues. The first is how to improve the methodological rigour of outdoor learning research and evaluation. There was a range of methodological weaknesses evident within certain

parts of the literature in this review, including poor conceptualisation and research design, and little or no follow-up in the medium to long term. The second issue is how to improve and deepen the research-based understandings of the outdoor learning process. To put it simply, there is still much to be learnt about how and why programmes work or not.

- Finally, there is a case to be made for greater theoretical and empirical attention being given to three significant 'blind spots' in the current literature. These concern: (i) the nature of the 'learning' in outdoor education; (ii) the relationship between indoor learning and outdoor learning; and (iii) the historical and political aspects of outdoor education policy and curricula.

Review methods

The project involved a systematic and critical review of research on outdoor learning published internationally in English from 1993 to 2003. The international scope was important in order to be able to draw lessons from research in other countries and identify gaps in the UK-based research literature. The inclusion of studies published from 1993 to 2003 reflected a desire to examine the most recent research findings.

Relevant research was identified using a number of complementary search methods, including bibliographic database searches, hand searches of key research journals, previous reviews/bibliographies and websites, and e-mail requests to researchers working in this area. Publications were selected on the basis of whether they included a clear research/evaluation dimension (as opposed to programme description), and whether the focus was in line with the parameters of the review. Overall, the review identified 150 relevant research publications.

Copies of the full report '*Review of Research on Outdoor Learning*' are available from the Field Studies Council.

Telephone: 0845 3454072.

Email: publications@field-studies-council.org

Web: www.field-studies-council.org/index.asp

3. Key messages and implications

This chapter identifies key messages from the review for future practice, policy and research in outdoor learning. Against the backdrop of calls for educational practice and policy to become more evidence-based (for example, Oakley, 2002), we feel there is much in this review that is of relevance and use to practitioners and policy makers. We are aware from previous projects connecting research and practice (for example, Rickinson *et al.*, 2003b) of the challenges and opportunities associated with using research to inform educational practice and policy. We are mindful of the fact that research findings can be understood and used by users in many different ways depending upon individual interests, roles and contexts.

As a general point, though, the findings of this review should be considered not just in terms of how they might help to *prove the value* of outdoor learning, but also in terms of how they might help to *improve its quality*. In other words, there is a need for the research reported in this review to raise questions as well as provide answers, and to present challenges as well as give support. This chapter, therefore, attempts to outline both areas of support and areas of challenge that have emerged from this review for future practice, policy and research in outdoor learning.

8.1 Key messages for practice

This review highlights demonstrable benefits for several types of outdoor learning. The review findings provide a source of support and justification for practitioners seeking an evidence base for the area of work in which they operate. Research suggests that well planned, competently delivered and effectively followed-up fieldwork can result in learning that supplements and enhances students' experiences in the classroom. Similarly, meta-analyses of research on outdoor adventure programmes provide strong evidence of short and long-term benefits, and several

individual studies report positive impacts particularly in the affective and interpersonal/social domains. In the context of school grounds/community projects, there is a growing body of evidence that children and their schools and local communities can derive a range of benefits from effective learning experiences. The review findings give a clear endorsement for certain kinds of outdoor learning provision. In particular, research indicates the value of programmes which:

- provide longer, more sustained outdoor experiences than is often provided
- incorporate well-designed preparatory and follow-up work
- use a range of carefully-structured learning activities and assessments linked to the school curriculum
- recognise and emphasise the role of facilitation in the learning process
- develop close links between programme aims and programme practices.

These points could well be used to inform the strategic planning and development of organisations involved in providing outdoor learning opportunities for young people. They could also help to direct the ways in which school staff think about the structure, focus and timing of outdoor learning within and beyond the curriculum.

Turning to areas of challenge, there seem to be three key issues that need highlighting. The first is that **the aims of outdoor learning are not always realised in practice**. For example, it is common for people to espouse a link between participation in outdoor adventure activities and improved environmental awareness/values though in reality research suggests that this is unlikely *unless specific measures are taken within the outdoor learning experience to focus on such issues* (for example, Haluza-DeLay, 1999). This is an important qualifier as it raises the more general issue

of the extent to which outdoor learning aims are reflected in outdoor learning practices. Issues for consideration by teachers and outdoor educators therefore might include:

- how clear they are about what they are trying to achieve in outdoor learning settings
- how closely these goals are reflected in the structure, format and content of their programmes
- whether there are cases where certain goals are being overlooked or underplayed relative to others
- whether they take account of the needs of all their students
- how confident they are in the methods they use to assess students' outdoor learning, both in terms of its outcomes and its processes.

In the context of school grounds, often the aims of projects are more to do with improving the environment rather than improving opportunities to learn in the environment. The lack of appropriate aims may well lead to missed opportunities for student learning.

Issues of equity are fundamental in considering the provision of outdoor education. In studies of secondary school students on outdoor adventure programmes in Australia, researchers found strong evidence that positive outcomes were greater for those with particular cultural backgrounds (Purdie *et al.*, 2002). Inequities are also clearly demonstrated in studies of disabled students' access to fieldwork on university degree courses (for example, Healey *et al.*, 2001).

Another issue that points to the need to consider individual responses to outdoor learning, is research showing how outdoor settings can provoke fears and concerns in the minds of young people that 'can pose barriers to enjoying and learning' (Bixler *et al.*, 1994, p. 31). While these are findings from individual studies in specific locations, they serve to raise more general questions about individual learners' access to, and outcomes from, outdoor learning activities. In particular, outdoor educators might consider:

- how much they know about the emotional or physical barriers encountered by the learners with whom they work

- how skilled they are at tailoring teaching strategies and learning activities to help reduce or overcome such barriers
- how sure they are that the benefits of the experiences they provide are accessible and relevant to all their learners.

The second challenge relates to the as yet unresolved issue of **the relative benefits of novelty and/or familiarity with the outdoor learning setting**. On the one hand, studies have shown the importance of young people being prepared for learning out-of-doors in order to avoid being distracted by the novelty of the situation or held back by perceived fears and concerns (for example, Orion and Hofstein, 1994). On the other hand, other researchers have argued that novelty can be important either as a stimulus for curiosity or as a way of ensuring a more authentic response to the landscape (for example, Ellis, 1993; see also Trudgill, 2003). The underlying point is that much of where one stands on this issue will depend on what kind of outdoor learning one is trying to promote. This brings us back to the point made in Chapter 2 that outdoor learning can be seen as having a range of different foci, outcomes and locations. All of these need to be taken into account in relation to this question of the relative benefits of novelty and/or familiarity with the outdoor learning environment. While there are no easy answers, two points that merit consideration are that:

- it could well be as important to prepare students to see the unfamiliar in the familiar, as it is to familiarise them for the novel
- greater attention might be given to exploring ways of building progression within outdoor learning programmes based on transition from the familiar (and more local) to the novel (and more distant) and vice versa.

The use of school grounds to stimulate interest in learning outdoors and in appreciating the environment is something that might usefully be considered. Work in school grounds and the local environment also provides opportunities for staff development both in terms of sharing knowledge among staff as well as building confidence in their abilities to assess and manage risk.

e third challenge to policy makers and practitioners is that in some cases the benefits of outdoor learning are not sustained over time. This is not the finding of all studies; the two outdoor adventure education meta-analyses, for example, stress the idea of lasting impacts. However, there are some programmes where follow-up research showed that initial learning and attitudinal gains appeared to diminish over time (Pommier and Witt, 1995; Uzzell, 1999). While these again represent findings from specific individual studies, we would argue that they raise important questions about the relationships between outdoor learning and indoor learning. For example:

- to what extent is outdoor learning integrated into students' indoor learning and vice versa?
- to what extent is outdoor learning supporting or challenging the learning students undertake within the classroom?

Again, it may well be that school grounds and the local environment may offer opportunities for follow-up work that encourages reflection, enhances learning and maintains interest over sustained periods of time.

8.2 Key messages for policy

Those with a statutory and non-statutory responsibility for policy relating to outdoor learning should be in no doubt that there is a considerable body of empirical research evidence to support and inform their work. This speaks to a wide range of individuals and institutions including teachers, school governors, non-governmental organisations, local authorities, LEAs, teacher unions, subject associations and politicians at all levels, all of whom may be involved directly or indirectly in developing and evaluating policy relating to outdoor learning.

We believe that policy makers at all levels need to be aware of the benefits that are associated with different types of outdoor learning. In particular, they need to appreciate that:

- fieldwork and field studies, properly planned, delivered and followed up, provide powerful opportunities for cognitive and affective learning

- outdoor adventure education can provide unique opportunities for personal and social development with long-lasting impacts
- school grounds/community projects can enrich curricular and cross-curricular learning, and build stronger links between schools and communities.

In short, learners of all ages can benefit from effective outdoor learning.

However, policy makers need to recognise that despite positive research evidence and the long tradition of outdoor learning in this country, there is growing evidence that opportunities for outdoor learning are in decline and under threat. There is therefore a need for policy makers at all levels and in many sectors to consider their role in increasing access to outdoor education that is challenging, effective and that meets the needs of society while being sensitive to the needs, feelings and culture of the individual. It is crucial that policy makers consider ways to:

- tackle barriers that stand in the way of the provision of effective outdoor education for all students
- encourage good programmes and practices and capitalise on policy developments, for example, by linking initiatives in different sectors
- support research, development and training so that good practice can be understood, disseminated and supported.

This raises a number of questions for several different policy areas, including education, health, environment, and science.

In the education sector, policy makers need to address these questions.

- To what extent are there policies in place that promote high quality outdoor education as an entitlement for all students at both primary and secondary schools?
- To what extent do policies ensure that fieldwork at undergraduate level is actively encouraged and supported?
- To what extent do institutional policies support outdoor education through training?

- To what extent do such policies in schools, universities and LEAs result in adequate funding for safe and effective residentials in a range of relevant subjects?
- To what extent do curriculum and assessment policies fully support outdoor education?
- To what extent are there policies in place to ensure that the networks of new subject learning centres organise outdoor learning training courses for teachers?
- In what ways can the expertise and confidence of new and experienced teachers be improved through pre-service, in-service and leadership training?

For policy makers in the **health sector**, the following questions warrant consideration.

- To what extent do existing policies ensure that outdoor education is designed to enhance personal health while reducing any concomitant risk?
- In what ways can activities in school grounds promote healthy lifestyles?
- To what extent do existing institutional health and safety policies promote and enhance outdoor education for all students wherever relevant?
- To what extent are policies in place that result in adequate training in safety and teaching methods for all appropriate staff?

In the **environment sector**, policy makers need to address the following questions.

- To what extent do existing policies ensure that outdoor education results in positive experiences of the countryside and develops an understanding of rural/urban livelihoods?
- What policy changes might result in greater connections being made between schools and communities in urban and rural areas through outdoor education?

Science policy makers need to address the following kinds of questions.

- What policy initiatives might result in all students appreciating the role that fieldwork plays in the physical and the life sciences?

- To what extent is there a need for fieldwork to be a mandatory part of physical and life science courses wherever appropriate?
- To what extent is there a need for the Council for Science and Technology to consider the place of fieldwork in science education up to and including postgraduate level?

Underpinning all of these questions is a need for the benefits of outdoor learning to feature more prominently in debates about schools of the future (Bentley, 1998), social inclusion and 'personalised learning' (Miliband, 2004), healthy schools and communities, and education for sustainable development (DfES, 2002a).

8.3 Key messages for research

This review makes clear the substantial amount and range of research that has been carried out in outdoor learning in the 1990s and 2000s. Within this field, we see a number of encouraging signs relating to all three types of outdoor learning. In particular, there has been:

- a diversification of research into outdoor adventure education, and fieldwork/visits, with greater attention being given to questions of learning processes, learning styles and individual learners
- increased empirical enquiry into learning through fieldwork in higher education, often involving action research and theoretical development
- the emergence of school grounds research as a new dimension to the evidence on outdoor learning, with strong links to the value of outdoor play
- more sustained theoretical exploration of the history and philosophy of outdoor education, and more critical attention to issues of inclusion and access in outdoor learning
- a growing number of meta-analyses and reviews of research, with clear attempts to provide accessible summaries for practitioners involved in work in school grounds, field study centres and outdoor adventure activity centres.

As it stands, these various research developments have generated a substantial body of evidence that can be seen to provide support, raise challenges and deepen insights about many aspects of outdoor learning policy and practice. Notwithstanding this, the evidence base is not without weaknesses or potential areas for improvement. In order to improve the situation, it is helpful to draw upon Wagner's (1993) notion of 'blank spots' and 'blind spots'. Studying topics 'relevant to questions already posed can be seen as filling in *blank spots*' (p. 16, [original emphasis]), whereas research that challenges us to 'ask new questions illuminate[s] *blind spots*, areas in which existing theories, methods, and perceptions actually keep us from seeing phenomena as clearly as we might' (ibid. p. 16 [original emphasis]).

Blank Spots

From the perspective of outdoor learning in this country, it is crucial to recognise that a good proportion of the research in this review originates from beyond the UK. As noted by Hattie *et al.* (1997) in a report of a meta-analysis of 96 studies:

Though it was the place of origin of the Outward Bound movement, there were too few evaluations of programs in the United Kingdom to include them in this comparison. (p. 62)

While it is understandable that certain countries, such as the US, will generate more outdoor learning research than the UK, there is a real need for more UK-based research into certain aspects of outdoor learning. In particular, there is a need for deeper insights and stronger research evidence on:

- the extent of outdoor learning provision available to school and university learners in this country, and how this compares with other countries and earlier time periods
- the effectiveness of outdoor learning programmes that (i) take place in the school grounds and/or the local community; (ii) offer a combination of fieldwork and adventure activities in a more holistic process-orientated way; or (iii) seek to build progression from local environments to more distant learning contexts

- the sorts of fears and concerns that young people can bring to different kinds of learning situations beyond the classroom, and the ways in which these can impact upon their learning experiences and learning outcomes
- teachers' and outdoor educators' conceptions of 'the outdoor classroom', and the curricular aims and pedagogical strategies that they see as important for effective teaching therein
- the cost-effectiveness of different kinds of outdoor learning, both in terms of economic cost-benefit analysis and also in terms of schools', teachers' and parents' perceptions of 'value for money'.

In order for these gaps to be addressed, attention will need to be given to two important issues. The first is how to improve the methodological rigour of outdoor learning research and evaluation. There was a range of methodological weaknesses evident within certain parts of the literature in this review, including: poor conceptualisation and research design; broad generalisations being made from small samples; too much description without any critical analysis; and little or no follow-up in the medium to long term. These are by no means unique to the field of outdoor learning, but they are critical concerns that need addressing in future research and evaluation in the area.

The second issue is how to improve and deepen the research-based understandings of the outdoor learning process. To put it simply, there is still much to be learnt about how and why programmes work or not. In view of this, we would echo others in calling for: more comprehensive descriptions of programmes and interventions; clearer and more fine-grained descriptions of participants; greater investigation into the complexity of impacts, including the differences within (as opposed to between) groups of students; and the combined use of a range of quantitative and qualitative methods, particularly in the context of observational/ethnographic studies. It is worth noting that several of these strategies are already being used within current research into university-level fieldwork in the UK (see Cottingham *et al.*, 2001).

Blind Spots

By their nature, blind spots are less easy to identify. However, we believe that the field would benefit from greater attention being given to the following areas.

- **The nature of the 'learning' in outdoor education –**

There is currently little in-depth consideration of the 'learning' aspect of outdoor learning. Given developments in learning theory and research within education more generally, this seems to be an important blind spot. There is a strong case, therefore, for future studies of outdoor learning that take seriously different views of cognition and learning (see, for example, Greeno *et al.*, 1996), and draw on learning theory as a grounding for their methods and analyses (see, for example, Brody and Tomkigwicz, 2002).

- **The relationship between indoor learning and outdoor learning –**

With the exception of studies focusing on preparation and follow-up work, most research on outdoor learning looks exclusively at what happens out-of-doors. While this is understandable (particularly for programme evaluations), it leaves unexplored all questions about how out-of-classroom learning can support within-the-classroom learning, and vice versa. With the boundaries between so-called formal learning and informal learning becoming less clear (for example, Bentley, 1998), there is an urgent need for outdoor learning research that takes a more integrated view of learning in different kinds of settings both within and beyond the school. On one level, this is about research projects that look at the before, the during and the after of outdoor learning programmes. On another level, this is about asking deep-seated questions about the extent to which learning needs to be understood in similar or different ways within varying contexts and settings.

- **The historical and political aspects of outdoor education policy and curricula –** It is clear that outdoor education has a rich and complex history, which varies across national, regional and local contexts. As contemporary interest grows in outdoor learning, it is crucial that current debates and developments are seen in relation to its historical and political dimensions. To support this, research is needed into the socio-historical development of outdoor education policy, discourse and practice. The theoretical perspectives offered by work in policy studies, curriculum studies and critical/post-structuralist research may provide interesting starting points for such work (see, for example, Brookes, 2002; Humberstone *et al.*, 2003).

As a final point, a crucial consideration for researchers in this field should be the extent to which they can help to facilitate closer connections between research and policy, and research and practice.