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Research hubs: the theory-practice nexus

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Introduction

Many professions, teaching and youth work amongst them, are keen to support the raising of standards through professional development by bringing the evidence of research closer to practitioners in the field. A number of strategies have proved effective including the development of strong social networks between researchers and practitioners, local action research hubs, participative enquiry and the development of practitioner researchers.

Two recent studies in the field of Outdoor Learning (OL) have been successful at using an action research approach to support professional development leading to increased take up and raised standards. These are Natural Connections (Waite, Passy, Gilchrist, Hunt & Blackwell, 2016), advocating for learning outside the classroom in natural environments (LiNE) in primary schools in SW England, and Learning Away (Kendall & Rodger, 2015) encouraging 'brilliant residentials' in schools throughout the UK. Both projects brought teachers and schools together in local hubs supported by advisors, evaluators and researchers in order to develop and disseminate best practices.

The success of, and the lessons from, these two projects has led to the piloting of the regional research hub concept in the UK for outdoor researchers and practitioners. The aim is to support local research that informs practice and enhances the quality of provision. In addition, the project intends to aggregate and analyse the data from local small-scale studies in order to create a larger evidence base to inform and influence strategic developments in outdoor learning nationally.

This chapter explores the approaches and impact of Natural Connections, Learning Away and the regional outdoor learning research hubs and outlines lessons learned for future practice.

Natural Connections

The White Paper, *The Natural Choice: recognising the value of nature* (HM Government, 2011) affirmed the UK government's commitment to 'remove barriers to learning outdoors and increase schools' abilities to teach outdoors when they wish to do so'. In response, the Department for the Environment, Food and Rural Affairs (DEFRA), Natural England and Historic England commissioned the Natural Connections Demonstration Project, an ambitious outdoor learning project delivered by the University of Plymouth between 2012 and 2016 (Waite et al., 2016). The project engaged over 125 schools across south-west England in developing outdoor learning through stimulating school demand for LiNE, providing support to incorporate it into planning and practices, and brokering outdoor learning services.

The project included delivery support and evaluation to facilitate future wider development of curriculum-based outdoor learning. A contributory factor in the award of the contract to the university was its successful track record of practice/research interaction through the Outdoor and Experiential Learning Research Network (https://www.plymouth.ac.uk/research/oelres-net). The network had been established in 2006 to facilitate and enhance mutual understanding of research needs and the evidence base in the field through regular workshops, seminars and conference with a regular email digest of relevant information to over 200 practitioners and researchers. Research reports were made freely available on the university website and there was ongoing collaboration between academic and practice communities in funded projects and in writing articles and books together.

The project plans were informed by scoping research (Rickinson, Hunt, Rogers & Dillon 2012) and reviews of outdoor learning and educational innovation literature, resulting in a distributed model of leadership, ownership and support.

<Figure 1: Natural Connections model HERE>

Key stakeholders, including the funders and the Council for Learning Outside the Classroom, monitored and guided progress of the project. Participants, through regular local cluster group and hub leader meetings, informed its development. The structure for information flowing between these links meant that the project's direction and methods could respond rapidly to changing needs. Educational attainment prioritisation, cost and risk (Waite, 2010) combine within school contexts with low staff confidence and experience (Dillon, 2010) to create barriers to outdoor learning. The model with regional brokerage and peer support, whereby recruitment was gradual, and schools developed preferred ways of using their school grounds and local community spaces for outdoor learning with tailored support from hub leaders and external sources, was well suited to meeting their specific issues, encouraging gradual development and securing sustainability by enabling teachers to own the process of change (Gilchrist & Passy, 2018). For example, some schools wanted to raise funds to redesign their outdoor learning environments to maximise available time for teaching outside, so fundraising courses were run in several hubs. In view of the coastal proximity of some schools, whose pupils might have never visited the seaside, 'Teach on the Beach' professional development sessions were held to inspire staff.

The original plan was to ground evaluation within school-level action research and aggregate data using the decision theoretic technique, which balances importance of outcomes with the likelihood of them being achieved within a programme, and by attributing a numerical value

to this combined value, enables relative achievement of differing goals to be aggregated across schools (Waite, Bromfield & McShane, 2005). The opportunity to gather data across common outcome measures in a big sample of schools was unusual and highly valuable. The evaluation design was therefore guided by Natural England's comprehensive evidence requirements with 100 key evaluation questions to gain traction for roll out nationally (Gilchrist et al, 2017) balanced by sensitivity to the burden of extensive data collection for schools (Waite, Passy & Gilchrist, 2014). Quantitative electronic surveys at staged intervals monitored activity and impacts throughout the project's lifetime. They provided feedback to hubs and schools about use of different spaces for OL, increased investment in OL environments within school grounds, and perceptions of impact of outdoor experiential learning for children. We found that staff concerns about providing OL generally lessened as their confidence and practice in using outdoor spaces grew. As an indication of commitment, school grounds were often modified to meet learning needs, using grants or school budgets (Gilchrist, Passy, Waite, & Cook, 2016). The following positive benefits for children were reported by 85-95% of respondent schools: enjoyment of lessons; engagement with and understanding of nature; social skills; engagement with learning; health and wellbeing; and behaviour. No school reported OL had had a negative impact on attainment; many said it was difficult to attribute attainment to a single cause.

The data enabled us to develop a model (Figure 2) of how curriculum OL might lead to raised attainment, building on existing research about links between enjoyment and engagement and the development of non-cognitive foundational skills (Gutman & Schoon, 2013).

<Figure 2: The pathway to raised attainment through outdoor learning. (Waite et al., 2016, p.10) HERE>

Case studies of 24 schools (19 primary; 2 secondary and 3 special schools) provided more detailed staff, volunteer, parent and pupil perspectives of the main benefits and challenges of introducing OL. We used a schedule for consistency in semi-structured interviews and focus groups about pupil benefits, whether and how OL supported teaching and learning, and challenges faced integrating OL within school practices, gathering 119 staff views. Some case study visits included focus groups with children and parental questionnaires. Salient points from the data generated were transcribed into a standard template, yielding detailed summaries. (See https://learningoutsidetheclassroomblog.org/category/case-studies/). Edwards-Jones, Waite and Passy (2017) discuss some of the emergent challenges and responses to embedding LiNE. Significantly, while most initial barriers such as lack of teacher confidence and uncertainty about how to link outdoor learning to curriculum objectives were overcome, time remained a challenge as the will to include more OL grew with experience of its benefits.

Learning Away: Collaborative action research impacts on students, teachers, schools and policy

The Learning Away Initiative worked with over 60 primary, secondary and special schools in 13 cluster partnerships across the UK; to enhance young people's learning, achievement and wellbeing by developing, piloting and evaluating the impact of residential experiences as an integral part of the curriculum. An action research approach was developed so that schools could deploy a continuous development model using an evidence-based approach to their ideas. In addition, the aggregated data provided a dataset for generic analysis that could be fed back to the schools and policy makers to underpin a campaign for residentials as a practice. The research design created a virtuous circle of learning influencing practice and the quality of teaching and learning for the students involved.

Prior to this Initiative, evidence for residential experiences and their impacts was largely anecdotal though these had stood the test of time. Additionally, conventional models of staffed residential centres often in places remote from schools, had become time consuming (especially at secondary school level), administratively complex and expensive. The aim was therefore to use a diverse set of schools to demonstrate the value of the residential approach whilst finding new ways to make them work.

In order to draw on the wealth of largely unresearched experience, the Initiative invited a number of leading practitioners to imagine the best provision they could. Embedded in their many proposals were a set of generic criteria: That residential experiences should be progressive throughout primary and secondary school, inclusive of all students and integrated with the curriculum. These criteria framed the call for schools to partner with the five year initiative. Other key requirements were the full support and engagement of the school's senior leadership and partnership between schools across a local area to provide support and critical mass.

After two years, case studies of each cluster indicated the diversity of partnerships, approaches and intended impacts of the plans that schools had begun to implement. The Initiative had been successful at provoking engaged partners and set out to determine what the impacts actually were. At the annual gathering each cluster was invited to make explicit its theory of change. This led to the development of nine hypotheses for the impacts of residential experiences on students and teachers and three further hypotheses related to whole school change (table 1).

<Table 1: The Learning Away hypotheses (adapted from Kendall & Rodger, 2015) HERE>

Nine online surveys, pre, post and long-term post, were developed to test each hypothesis across as many clusters as wished to participate in each theme. This survey was given to students (n = 5,821 pre-residential, 4,652 post-residential and 988 long term follow up), and every teacher (n = 285 pre-residential and 254 post-residential) taking part in a residential over three years. Approximately 20% of students and staff were from secondary schools. The remainder were primary plus three special needs schools. The results of these surveys were supplemented by focus groups of students (63, involving 398 students from 27 schools) and staff (40, involving 192 staff across 37 schools). Over 100 case studies of individuals, classes, trips and schools were completed as were a number of observations of residentials and classes. Schools received feedback on their residentials on an annual basis. Data were also aggregated and analysed by cluster, year, hypothesis and key stage.

Some clusters added additional practitioner research projects to test their own specific questions. These smaller studies covered topics such as attainment in years 10 and 11 (14-16 years old), transition from primary to secondary school (10-11 years old), behaviour change, attendance, exclusion and bullying. These new data were sometimes added to existing data such as progress scores that were already collected but not always previously evaluated by the schools concerned. Findings included significant jumps in progress and attainment post residential in maths (year 10) and literacy (years 5 and 6, 9-11 years old); significant steps in progress for underachieving students (years 6 and 10); positive social behaviours including elective mutes becoming voluble post residential; improved attendance rates alongside decreased truancy rates and incidents of anti-social behaviour in class and in the playground. One cluster reported exclusions dropping to zero on the introduction of their programme.

In addition, all data were combined, which enabled an overall theory of change describing some impacts of residential experiences that occur no matter what is done, how often, where

and at what cost (table 2) and some indicators of approaches that heightened these generic impacts. These were the presence of the students' class teachers on the residential with their students, low cost approaches especially camping, student leadership within peer groups and for younger pupils, and the co-construction of residentials between students, teachers and specialists.

<Table 2: 'Why brilliant residentials? The Learning Away Theory of Change (adapted from Kendall & Rodger, 2015) HERE>

Comparisons between clusters or years was not possible. Also, despite the long-term nature of the study, it was still difficult to evaluate the impact of residential experiences on attainment in examinations.

The approach was a success. Residentials became embedded and sustained in most schools. An evidence base for their impacts was developed and staff skills were cemented. Innovative approaches overcame resourcing issues, raised confidence in the impact of the experiences and addressed staff concerns with new teaching approaches, safety and class control. The main threat to sustained provision was a change of senior leadership in a school.

The evidence from the Initiative went on to underpin a campaign to involve more schools and influence national educational policy. The annual cycle of evidence-based reflection and sharing in clusters created an effective action research environment from which academics, practitioners and policy makers benefitted.

The Outdoor Learning Research Hub Project

Inspired by the success of the cluster model adopted by Natural Connections and the Learning Away initiatives, The Institute for Outdoor Learning (IOL), the Council for Learning Outside the Classroom and Natural England, together with a national network of

researchers - the LiNE Strategic Research Group (LiNE SRG) - proposed the idea of regional Research Hubs to bring researchers and practitioners together. Andy Robinson, Chief Executive of IOL, which funded the pilot year encapsulated the idea:

> If Outdoor Learning is to be valued more highly by UK society it needs to be better understood and more consistently delivered to high standards. I think the work of the Research Hubs will support these aims by providing better dialogue between different research institutes and between researchers and practitioners.

Launched in 2017, in partnership with the University of Cumbria, the Research Hub project aimed to facilitate and co-ordinate researcher-practitioner engagement to drive the nationwide development of an evidence base to support the delivery of high quality, frequent and progressive outdoor learning experiences for children and young people. It aspires to raise the standards of professional delivery in outdoor learning research and practice.

The Regional Research Hubs. A network of regional researcher-practitioner hub groups, research 'hubs', have been established that will enable academics and practitioners from across the sector to discuss needs and priorities. These research hubs are tasked with identifying local priorities, supporting evidence gathering, and progressing local action research and evaluation. Each regional research hub arose spontaneously and is developing autonomously in order to:

1. Build links between local research-practice communities with an interest in OL – universities, providers, professionals, researchers, postgraduate students, etc. to stimulate action research capacity and activity that meets local needs

2. Capture the scope of research in their area and feed any publications in the public domain to the central research coordinator

3. Create plans to support evidence gathering in areas of national priority

4. Disseminate information about evidence and good practice within their hub area, among the network of pilot hubs and to the LiNE SRG

5. Provide a bridge between local and national needs for research findings.

Hubs are meeting several times during the year and their discussions and developments so far have been both encouraging and insightful. Already, they have identified previously unknown research, debated the most important questions to ask – and how best to ask them, begun to develop action research workshops to support new projects and build new practitioner-researcher partnerships. Feedback indicates that these meetings promote confidence amongst practitioners in undertaking research, raise awareness of existing research evidence and stimulate discussion about the focus for further research activity. Practitioners also report feeling more articulate about what they do and what it achieves.

The Central OL Research Coordinator. A Central Research Coordinator was appointed to bring together local evidence via the hub network and to summarise those findings to inform and stimulate local hub-driven research, research and evaluation priorities, and national policy and practice. The coordinator will also develop an online toolkit that provides the various forms of OL practice with underpinning evidence for impact and case studies that model good practice. This can feed into national policy development and provides insight into UK-wide research needs and priorities. Simultaneously, the regional hub is already helping answer key questions posed by national policy makers.

It is hoped that action research and an evidence-based approach will support the quality and reach of OL for all in the UK.

The benefits and barriers of a collaborative research model

Just as Natural Connections and Learning Away identified barriers to the take up of their respective interventions that they were able, in significant ways, to overcome for their participating schools, the OL Research Hubs project found similar barriers to practitioner engagement with research. To summarise the findings of the Hub coordinator's first report, practitioners:

- were unsure of what counted as 'research'

- lacked confidence in their findings because they were not sure if they were rigorous, were ethically arranged or had sufficiently large sample sizes

- were not sure what questions to ask or how best to ask them

- felt that quantitative approaches were more valid than qualitative ones

- found research hard to read and were unsure of the value of repeat studies

These concerns applied to previous research not shared externally or, sometimes, internally, and to the initiation of new projects. Practitioners also expressed concern that they might find that their implicit theories of change, once made explicit and tested, might not meet with the approval of colleagues or that the findings of research would prove them to be of limited educational value. Lack of resources, especially time, was also mentioned.

It also became clear that schools and other organisations, routinely collect data that, if applied to specific projects or groups, could provide qualitative and quantitative evidence of great value in answering practical questions about effective teaching strategies. In this case, practitioners were unsure of the theoretical frameworks that might help them to understand the data or approaches with which to undertake an analysis.

Learning Away drew on the experience of Natural Connections and took an evidence based and explicit approach to change using an iterative, action research model. The partnership

between experienced evaluators and researchers provided practitioners in both projects with the skills, knowledge, additional resource and a constructive approach to working with the findings. The experience in schools was of an evidence-based approach to the transformation of pedagogy, the development of students as learners and staff as teachers in a framework of a supportive organisation. In addition, the Learning Away project reported significant positive and sustainable impacts across the culture of whole schools. In some cases, the Learning Away project reported that teachers moved beyond collaborative approaches and initiated research projects of their own as practitioner researchers. Staff became articulate advocates of the pedagogical changes they were making, influencing other staff, other schools and policy makers.

The Hubs project has taken these findings and applied them broadly to the professional development and strategic planning of OL more widely. The success of a collaborative action research approach has been applied to the local context of an institution such as a school or outdoor centre with the intention of building researcher practitioner partnerships that will provide the skills, knowledge, resources and confidence to implement small scale research that can make a difference to practice. In addition, the role of the central coordinator means that, like the Learning Away and Natural Connections projects, the small-scale findings can be aggregated in ways that allow for a larger picture to emerge of the difference outdoor experiences can make to students, teachers and organisations.

Conclusion

In our view, collaborative action research has the following advantages.

- Bringing researchers and practitioners together enhances the quality of practice and provides a deeper understanding of complex educational approaches.

- It encourages ongoing reflection amongst practitioners and gives them confidence in their articulating their approach and making claims for impacts.
- By integrating small scale studies, a larger picture can emerge underpinned by a greater evidence base.

Outdoor education has a long history with many different forms and enactments. We have mainly focused in this chapter on outdoor learning, Learning in Natural Environments and residential experiences. The visibility of OL has increased with a growing international evidence base and the Natural Connections project and Learning Away projects in the UK contributed to this. Their collaborative approaches have helped to bring together research and practice, although they have also highlighted tensions between the demands of different audiences, such as policy developers and teachers, which need to be negotiated carefully. The formation of the Natural England Strategic Research Group has enhanced evidence-based strategic influence and supported the OL Research Hubs initiative in partnership with the Institute for Outdoor Learning and University of Cumbria. In combination, these factors have given lobbyists and Government the confidence to include OL and LiNE as strategies within the 25-year Environment Plan (HM Government, 2018) with the ambition to provide progressive outdoor experiences for all young people in the UK. The OL Research Hubs project, and initiatives like it, with a collaborative, evidence-based, action research approach, can continue to support the exploration of how OL can provide young people with a progression of relevant experiences. From the practice perspective, it has helped to make evidence more relevant and applicable to specific contexts within outdoor studies. Research can inform the quality of practice, the narratives to advocate for these practices and the direction and expansion of provision. It can also offer robust evaluative feedback about innovative practices, giving stakeholders at a local level the confidence and knowledge to

build effective provision for all into the future. Both the Natural Connections and the Learning Away projects highlighted the potential for practitioners to become involved in small scale research and evaluation in collaboration with researchers and also as research practitioners in their own right. A key element in this has been that schools have gained the confidence to ask questions that matter to them, to trust the results and to value the way in which research can be a powerful tool in enhancing practice. This capacity is a key aspect of the OL Research Hubs' ambitions to encourage further action research. However, the time needed to engage with research in practice cannot be underestimated and can conflict with other priorities.

Consideration of how methodologies can have relevance and utility at multiple levels is worthwhile. In this way, aggregation and synthesis of the findings can continue to inform policy makers and strategic planning at local, regional, national and international levels. As such, the collaborative action research model has benefits to the whole eco-system of education informing and supporting change from the student learner to the national and international policy maker. The evidence also suggests that the outcome of implementing initiatives in this way is one of embedded organisational change that raises standards and is sustained beyond the life of the formal intervention (Loynes, 2017). Collaborative action research becomes rooted and integrated with practice in professional and organisational reflective cycles, a capacity that has the potential to influence change beyond the aspirations of outdoor learning as schools and other organisations apply these approaches to other subject areas and pedagogies as well as to whole school transformations.

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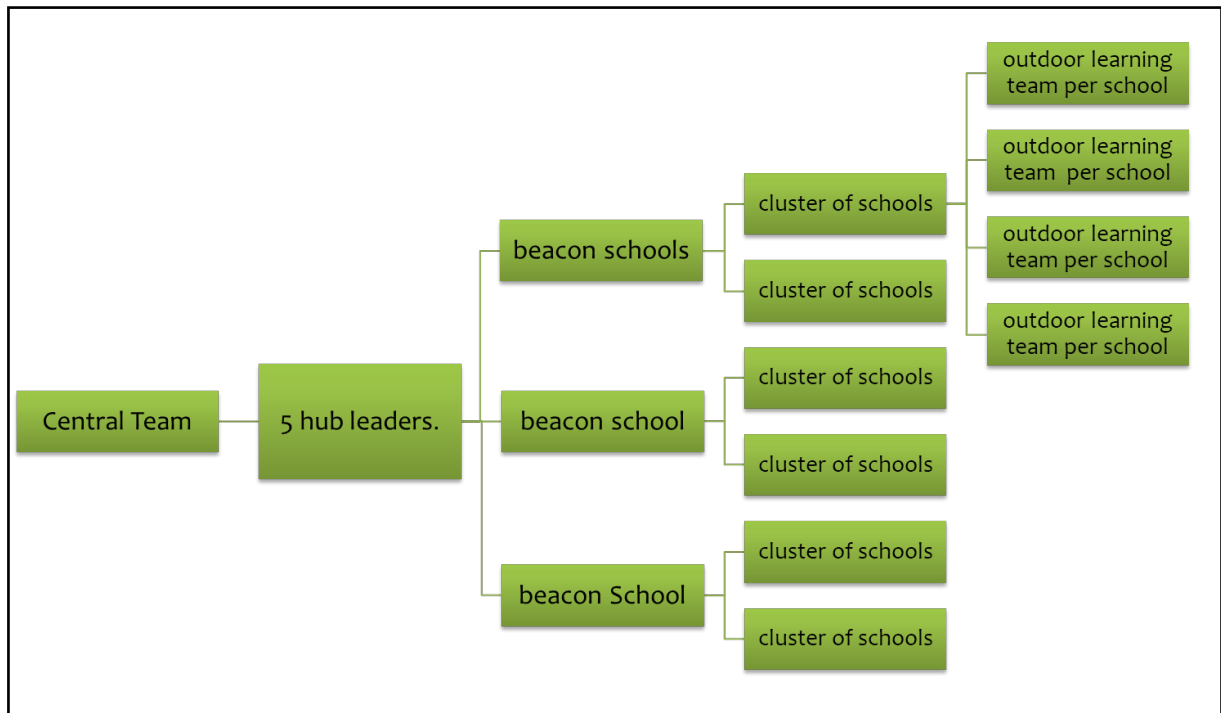**Figure 1: Natural Connections model**

Figure 2: The pathway to raised attainment through outdoor learning. (Waite et al., 2016, p.10)

Table 1: The Learning Away hypotheses. Adapted from Carne, P., Loynes, C. & Williams S. (2015).

Learner Achievement and Engagement
- Progress & Attainment
- Knowledge & Understanding
- Skills Development
- Learner Engagement

Learning Experience
- Relationships with others
- Transition
- Leadership, Co-Design & Facilitation
- Resilience, Self-confidence & Wellbeing

Transforming Schools
- School Improvement
- Pedagogical Skills
- Cohesion, Interpersonal Skills & Belonging

Table 2: 'Why brilliant residentials? The Learning Away Theory of Change. Adapted from Carne, P., Loynes, C. & Williams S. (2015).

Residentials provide the opportunity and experience of living with others. This transforms relationships and develops a strong sense of community and belonging between the staff and students involved. The findings of the evaluation confirm that this sense of community supports a wide range of positive social and learning outcomes long after the return to school.	Residentials bring…	which, in the short and medium term, lead to…	which, in the longer term, lead to…
	The overnight stay and an intensity of experience	Enhanced relationships	Improved achievement, progress and attainment
	A new context for relationships	Improved engagement and confidence in learning	Improved knowledge, skills and understanding
	Different and varied opportunities to experience success	New and developing skills and understanding	Improved relationships
	New ways of learning		Improved engagement
			Improved behaviour and attendance
			More successful transition experiences at all key stages
			Raised aspirations
			Greater cohesion and a sense of belonging
			Enhanced trajectories to work, sixth form, further and higher studies