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## **Outdoor environmental education research and reflective practice**

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### **Abstract**

Many outdoor environmental educators develop their learning through professional practice and encounter research by reading, or in the role of a researcher themselves. Research is important to develop an evidence base for the efficacy of outdoor interventions, and to demonstrate outcomes to give confidence and reassurance to practice, which may inform policy or effect change. Reflective practice may be informed by research or research may inform reflective practice. In this chapter, examples of research in outdoor contexts are provided to show how reflective and reflexive practice can be used to interpret their relevance and application to practice, and how questions about practice inform research. A new model is presented to illustrate the prominence of research and reflective practice in an outdoor practitioner's consciousness. It is suggested that outdoor environmental educators develop their professional practice with respect to research through processes of reflection, which becomes more critical, deeper and reflexive with increasing experience.

**Keywords:** Reflective practice, reflection, reflexivity, research, outdoor practitioners, outdoor environmental educators, professional practice, significance, impact

In many university outdoor environmental education (OEE) programmes, students' first encounters with research may well be during the process of completing assignments. Integrating evidence from published research usually is a mandatory part of undergraduate and postgraduate taught programmes and inescapable for the award of a degree. Moreover, many degrees also comprise a weighted research project, dissertation or thesis with the expectation that students engage in the process as researchers themselves. The process of designing a research project to explore in depth a new or existing area of interest is an exciting opportunity with the potential to create new knowledge, read widely about the chosen area, evaluate critically sources of information and previous research, and subject the final output to scrutiny (Prince & Mallabon, 2020). In retrospect, outdoor graduates usually reflect positively on their research, particularly where it is connected to, and has meaning for, practice.

This chapter examines the importance of research in outdoor practice, the differences between reflective and reflexive practice, the ways in which research informs reflective practice and *vice versa*. It includes illustrations of research, both conceptual and empirical, to illustrate its integration in the practice of a professional outdoor environmental educator.

### **The importance of research in outdoor practice**

Fiennes et al. (2015), examining the evidence base for the effectiveness of outdoor learning found that, 'Because the existing research is spread quite thinly, few questions about effectiveness are yet answered reliably' (p. 8). Other researchers concur with this claim of a limited research base in OEE; it is still an embryonic subject with wide scope. The number of researchers and outputs has grown, particularly since 2000 as more journals and books

have been published (Humberstone, Prince & Henderson, 2016; Prince, Christie, Humberstone & Gurholt, 2018). There is not only the need for an evidence base to demonstrate outcomes and the effectiveness of outdoor interventions, but also for sharing and using findings in practice, and for policy review and development. Organisations engaged in OEE increasingly are finding that they need such evidence for funders and stakeholders, to justify, maintain or enhance their programmes.

### **Reflective practice, Reflection, Reflexivity: What's the difference?**

The term 'reflective practice' is practice by which professionals become aware of their implicit knowledge, behaviours, values and impact and learn from their experience (Schön, 1983; see Asfeldt & Stonehouse, *Chapter 32*). That outdoor educators routinely engage in reflective practice is identified as one of the seven threshold concepts for Australian Outdoor Education programmes. These concepts articulate what a student who completes at least a major in outdoor education should know and be able to do (Thomas et al., 2019).

Professional development is a form of reflective practice and outdoor environmental educators are encouraged to engage in such development throughout their career to explore current thinking, research and practice, and the interaction between these in terms of the implications for their own outdoor practice and that of others. This development may be formalised within technical skills, intra- or interpersonal skills or the outdoor sector more widely, and on an individual or collective basis. Early career outdoor practitioners and researchers can contribute a significant amount to the field as they are often able to engage in reflective practice without reference to established norms and traditions and can pose objective questions.

More informally and intrinsically, most practitioners will continually reflect on the ongoing and overall effectiveness of achieving the intended learning outcomes of their programmes and develop reflection at a deeper, more critical level to mature their practice (Blenkinsop et al., 2016). Reflection can be defined as, 'learning and developing through examining what we think happened on any occasion, and how we think others perceived the event ... opening our practice to scrutiny by others' (Bolton, 2018, p.13). For example, a beginning practitioner facilitating a ropes challenge course may place importance on structuring the session to enable each participant to 'have a go'. With more experience and reflection, the outdoor environmental educator may focus more on the achievements of each individual and then extend that through a review of the experience with the group and/or individual focussing on outcomes that will have transfer value to other settings (e.g. perseverance, overcoming fears, resilience, mindset etc.).

The term 'reflexive practitioner' is used to question self- attitudes, thinking, values, assumptions, prejudices and habitual actions to understand an individual's role in relation to others. Reflexive practitioners operate at a deeper, more critical level, have an openness to multiple perspectives and create innovative non-dichotomous solutions, which can be informed by research. The key focus is on beliefs, values, professional identities and consciousness of wider social, cultural, historical, linguistic and political dimensions. In the example above, the outdoor environmental educator needs to have sensitivity towards the cultural expectations of individuals and their communities. recognising that such experiences

may also be in the domain of the privileged – those who can afford and can access such experiences, and not representative of all demographics. In qualitative research, which explores people interactions, researchers should acknowledge and take account of the many ways they influence findings and thus, the conclusions they arrive at and the knowledge they create. The practitioner also needs to be aware of the larger field of work outside their own milieu.; research is one aspect of supporting that broader understanding and context. An example of this might be the physical and mental health benefits of outdoor activities for a specified population or community, where the outcomes will have meaning in, and synergy with, therapeutic, sport and public health domains. This could mean that the outdoor environmental educator needs to direct their focus (in practice and/or research) towards these outcomes and perhaps marginalise others such as enhancing environmental awareness that may be important to them as an individual, in response to a political agenda .

‘There is a place in every research inquiry for both reflexivity and reflection’ (Ryan, 2005, p.2) and this is the approach taken in this chapter. Outdoor environmental educators should engage in reflection and reflective practice. In research terms, both reflective practice and reflexivity are important.

### **Research informing reflective practice**

Research can inform practice in a number of ways. As a starting point, engagement with empirical research studies (both large and small scale) enables educators to reflect on data to provide evidence to explore an issue, challenge, hypothesis or question. Through careful reading of research studies, an educator might be able to make more explicit the positive outcomes and benefits of outdoor practice. Careful engagement with research can also reveal unexpected, surprising or negative outcomes of OEE and this might prompt a reader to think about areas that might need addressing, and factors that affect variable outcomes for operational and strategic planning. For example, research examining the benefits of an outdoor programme might find that although there were positive benefits for disabled participants whilst attending a programme, on returning to their home setting, these benefits could not be maintained due to lack of opportunity, support or access, with a consequent negative effect on mental and physical health and wellbeing. When an outdoor educator takes the time to engage with research to learn more about the evidence base around OEE, their own practices can be challenged or supported.

There are other types of research that do not comprise data per se, but instead are more conceptual or philosophical. This kind of research can also influence practitioners’ beliefs, values and convictions. For example, Dewey’s view on child-centred experiential learning has been influential for the practice of many outdoor environmental educators. Sometimes a moment of practice can be reflected on with reference to a conceptual model: On an extended canoe expedition, a group of second year undergraduates found themselves sharing an overnight campsite with a group of postgraduate students who had just started their course at a different university. The leader of the postgraduate group complained to the other leader that their students would be distracted and kept awake by noisy, younger undergraduates. In fact, the postgraduate students moved their leaders’ tents when they were not on the site, partied all night and could not be roused the following morning. The undergraduates cooked their meal, slept soundly and were ready early the following morning with all their kit packed

and ready to start the next day of the expedition. The postgraduate students were ‘storming’; the undergraduates, because they knew each other and understood expectations were ‘norming/performing’ in the stages of Tuckman’s model of small group development (Tuckman & Jensen, 1977). A familiarity with theoretical research helps an educator locate their practices in broader constructs.

The inter-relationship between the prominence of research and the amount of outdoor practice experience for an individual is shown in Figure 1. As experience increases, reflection deepens and becomes more critical leading to reflexivity. Beginning and less experienced practitioners do reflect and this leads them to ask questions. More experienced practitioners may be reflexive but this does not mean that they have lost the ability to reflect.

<Figure 1 HERE>

The ultimate hope is that research studies (empirical, theoretical and conceptual) will initiate reflection at the individual level that may in turn effect changes in practice. For example, a teacher might read about research that describes the benefits of using school grounds for outdoor education but they have no allocated curriculum time for it, behavioural challenges when taking children outdoors, and little support from senior managers for an outdoor programme. Reflective practice may involve asking such questions as, why are there differences between the practice I experience and other similar practice? What are the reasons for this? Can I make improvements to my practice and how? The answers to these questions could be related to assumptions that school managers make through lack of knowledge, information or experience in relation to outcomes or safety, bias towards classroom learning, and for the outdoor educator, professional confidence. Often though as is illustrated in the examples below, reflection on research often results in asking more questions than it answers; it is an iterative process.

### **Large-scale research studies**

Outdoor environmental educators might use the evidence from larger scale studies to review existing evidence across a specified outdoor context or timescale. These might be ‘systematic reviews’ (reviews of all the extant evidence that fits the pre-specified eligibility criteria to answer the research questions) or more general evidence-based reviews of literature and/or other reported research. Some studies also report a ‘meta-analysis’ within a systematic review, a statistical procedure to combine numerical data from multiple separate studies.

Case examples 1, 2 and 3 are illustrative of published large-scale research studies relating to outdoor contexts. Each one subsequently is reflected on and interpreted in relation to how meaning can be elicited for professional practice.

### **Case example 1**

#### **A review of evidence-based research in outdoor learning**

Rickinson et al., (2004) examined 150 pieces of research on outdoor learning from 1993 to 2003 and reviewed critically research on fieldwork and outdoor visits, outdoor adventure education and school grounds/community projects for primary school students (aged 4–11 years), secondary school students (11-18 years) and undergraduate learners. The research provided a clear endorsement for certain kinds of outdoor learning provision, but the aims of programmes were not always realised in practice. The report made recommendations not only for practitioners but also for policy makers and researchers.

This review identified through research the need to deliberate and reflect on certain issues in practice, particularly not just using evidence to substantiate the value of outdoor learning but also to improve quality. The outcomes of this research helped direct reflection and thinking by school staff in terms of the focus, structure and timing of opportunities in their curricula and programmes. In terms of research, it identified gaps in the evidence base that have informed subsequent foci for empirical investigations. It outlined the importance of sound, robust research evidence to capitalise and link successful initiatives and highlighted the need for research training and development to understand, foster and disseminate good practice.

In some cases, research can have unplanned outcomes as is shown in case example 2.

### **Case example 2**

#### **The evidence base for the effectiveness of outdoor learning in the UK**

Fiennes et al., (2015) examined research evidence through a systematic review of academic literature and inviting submissions, ‘crowdsourcing’. They found that almost all outdoor interventions have a positive effect (or that was the way in which the research was reported), that effects measured immediately after an intervention were stronger than measures a few months later, and overnight and multi-day activities had a stronger effect than shorter experiences. The researchers also emphasised the importance of reliability of research. If research is unreliable (i.e. it cannot be replicated) then its potency as a source of information for practice, in this case planning programmes etc. is questionable. Interestingly, Fiennes et al., (2015) were also able to look at the implications of their research findings for policy and practice although this was not their initial objective.

This published report (also known as the ‘Blagrove Report’) did cause the outdoor sector to reflect on the ways in which research should be informing practice. Perhaps the most important outcome was that their recommendations have led to reflection and rethinking (in the UK at least) about strengthening the evidence base and for a much closer working relationship between practitioners and researchers to prioritise research topics and manage the sector-wide research agenda. Practitioners need to reflect on their practice and ask questions that would benefit from research, and researchers need to ensure that they are working to answer questions, or to address issues or problems that have real impact on practice. To this end, there is now a network of active research-practice hubs in the UK

comprising both practitioners and researchers to inform and influence local policy and an overarching ‘Strategic Research Group’ that gathers evidence to inform policy at government level (see Hedges, Loynes and Waite, 2019). This type of model of working also helps the dissemination of unpublished research (for example, in theses, dissertations or research reports) and the collation of evidence.

Case example 3 is another large-scale research study, which some would now regard as seminal (i.e. one that is considered original and the foundation of future developments) as its findings are considered reliable and valid.

### **Case example 3**

#### **Adventure education and Outward Bound experiences that make a lasting difference**

Hattie et al. (1997) undertook a meta-analysis of 151 unique samples from 96 studies of adventure programmes to examine their effect on a range of outcomes such as self-concept, locus of control and leadership. In addition to aiming to synthesise the findings across many studies, the research sought to ascertain the magnitude of effect sizes (a way of quantifying the size of the difference between samples). Their results suggested that adventure programmes can have notable outcomes and strong, lasting effects but that there is variability in outcomes between different studies, programmes and individuals. Outcomes improved as the length of the programme and the age of participants increased.

The reasons for these findings are largely conjecture – reflection on this research might, for example, cause a practitioner to say that different providers have different objectives for their adventure programmes and that older participants are more likely to be able to recognise the benefits. It could be that variability in intended outcomes for outdoor programmes depends on participants’ motivation and engagement and the outdoor environmental educator’s skills in directing the group towards specified outcomes, or the importance they or their employer place on achieving them. They could, for example, be more interested in the gain that each individual will make over the duration of a programme. Interestingly, the study excluded effects from studies considered to be of low quality and not in scope (for example, school-based programmes that were non-challenging and often of shorter duration). Thus, although Hattie et al.’s (1997) study is regarded as sound, evaluative research, it is important to determine the parameters of research when reflecting on it for your own practice.

Research relying on primary data is time specific and by the time it is reported, published or read, practice might have changed or developed. For example, there is now more recent research to indicate that the intensity rather than the duration of outdoor residential experiences has stronger impact on participants in the longer term (defined as 12 months and beyond). Thus, short but intense overnight adventurous experiences in the dark, for example, might have a more lasting effect on individuals than five-day outdoor programmes with more ‘downtime’. Interestingly, the *reasons* for these differences are subject to speculation and more empirical research may provide answers (and perhaps ask more questions in a reflexive way such as, do the outcomes depend on opportunity, demographics or the skills of the facilitator?).

## **Small-scale research studies**

Reflective practice often informs research in small-scale studies, at least in the early stages or research or project design. Students of OEE are encouraged, for example, to undertake research in an area of interest that has relevance to practice or emanates from practice, and often for students, is based on personal experience. A reflective approach can question how or why certain practices take place, or what measures could improve practice.

This section gives case examples of small-scale outdoor education research studies by researchers with different amounts of experience. These examples in which the author was involved, illustrate how reflective and reflexive practice inform research and how the outcomes of the research inform professional practice.

Case example 4 illustrates a small-scale study by an experienced researcher:

### **Case example 4**

#### **Outdoor learning in primary schools (children 3-11 years)**

This research was carried out by a university researcher who is a qualified teacher and who works with her students in schools as part of their outdoor programme. The research drew on empirical data from surveys involving teachers in primary schools in England between 1995 and 2017 in order to look at changes in practice, examine the places that were used for outdoor learning, the challenges and opportunities for implementation of outdoor programmes, the expertise teachers had for outdoor provision and the ways in which they integrate it into the curriculum.

The research identified the strength of teachers' values and beliefs, an open approach to curriculum interpretation, the importance of suitable locations, a culture of risk benefit and positive initiatives as key ingredients for successful outdoor learning in primary schools. It is published in two papers in international journals (Prince 2019a, 2019b) and presented at international conferences and at research symposia for practitioners and researchers.

In this case example, the reflective practice of teachers through the primary data (their answers to questionnaires) has informed the research but the real impact of this research is through the changes it might make to enhancing outdoor opportunities for all children in school. Outdoor educators working in schools have been interested in the recommendations of this research as highlighted by the titles of the publications: 'Lessons for good practice' and the 'Sustained value that teachers place on outdoor learning' to reflect on their own practice. This is one reason why it is important to disseminate robust research.

The following case examples (5 and 6) illustrate the engagement in research of a less experienced researcher and practitioners respectively:



### **Case example 5**

#### **Trans and non-binary participants in outdoor programmes**

Approaching her final undergraduate year on an outdoor programme and working as a watersports instructor, Chloe (a cis practitioner) recognised the challenges for trans and non-binary participants and the apparent lack of understanding of their needs and adaptive behaviour by providers. She wanted to find out what it was like for those participants, the level of understanding and confidence of practitioners (both trans and cis) and whether by raising their awareness, policies, practice and facilities might be modified or improved. She obtained a good response to a questionnaire distributed on social media, supplemented by interviews and presented vignettes to reflect their lived experiences. The data indicated that aspects of outdoor programming policy in respect of gender were unsuitable, outdated and incongruent with the opinions and aspirations of many practitioners. Chloe wanted her research findings to encourage outdoor providers to review their policies in relation to gender and to strive for explicit inclusivity in respect of accommodating and welcoming gender variant participants.

Chloe presented her research at the European Institute of Outdoor Adventure Education and Experiential Learning International Conference in 2019 and co-authored a journal paper (Bren & Prince, in review).

### **Case example 6**

#### **Sail training**

Sail training is an adventurous activity, which involves young people living, working and sailing together offshore, usually on large vessels. Traditionally, the emphasis was on teaching and learning seamanship skills (of which there are many and in which staff and volunteers have extensive experience). More recently, Sail Training International and associated national organisations have been interested in the social and personal development of the young people who have experienced voyages, and any lasting impact these have on their lives. However, the research and practice were very separate and the challenge was to engage sea staff in reflecting on their practice and to think about any changes or variation in approach they could make on board, to further these outcomes.

The ASTO (Association of Sail Training Organisations, UK) has supported the embedding of a research theme in their annual conference. Sail trainers inputted into a theory of change model - a 'map of causal links, which seeks to explain why and how an intervention has impact' (Noble et al., 2017, p. 1) – and one of the recommendations of Fiennes et al., (2015). Subsequent progressive annual workshops encourage practitioners alongside researchers to think about how they bring research into practice or practice into research, for example, considering how they could develop their own or their organisation's practice to attain a wider range of outcomes.

In case example 5, Chloe reflected on her practice initially, becoming more reflexive as she worked in other contexts, and met more practitioners. Practice then informed her research, which led her, practitioners and providers to become more reflexive. In case example 6, research became gradually more embedded in practice because of the commitment of national and international organisations in pushing it up their agendas. Over time, and because of their involvement in generating their theory of change, sail training practitioners have begun to think in different ways. They have moved from practice informing research to research

informing reflective practice. Knowledge about research findings and the need to articulate to researchers what they want and need to know has been key to this shift in mindset.

### Indicators of research quality

Whilst, it may not be possible for an individual student researcher to make a significant contribution on their own, collective research can make a difference and there are indicators of high-quality research that it is worth being mindful of. The need to demonstrate **impact** of research – an effect on, change, or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia (Research Excellence Framework, (REF) 2019)– with a defined causal chain, is critical for university researchers across all disciplines in relation to funding for research in higher education. The extent to which the work has influenced, or has the capacity to influence, knowledge and scholarly thought, or the development and understanding of policy and/or practice – the **significance** of research- is also a key metric. Reflexive practice with its reference to wider dimensions of the research with more reach may result in greater impact and significance than reflective practice. **Originality** is the extent to which the output makes an important and innovative contribution to understanding and knowledge in the field and rigour is understood as the extent to which the work demonstrates intellectual coherence and integrity, and adopts robust and appropriate concepts, analyses, sources, theories and/or methodologies (REF, 2019). An example in outdoor practice might be to reflect on the effects of overnight experiences (residential, camp, expedition, journey) for young people that show a direct impact on increasing their cognitive abilities (*impact* shown through causal chain). The *significance* of this is development of policy on including overnight experiences as part of curricula, or in an aspect of non-formal education (e.g. scouting). It is *original* as the causal link has not previously been reported in that context.

### Conclusion

The place of research in practice is unequivocal. Research might be in the conscious or sub-conscious of outdoor environmental educators at various stages of their professional practice or career. For all practitioners, knowing and reflecting on or in practice might inform research; research findings may inform practice. Reflective practice is key to being a professional outdoor environmental educator and the place of research in this is important. As outdoor environmental educators gain more experience, I suggest that research informs reflexive practice and is inclusive of personal, critical and deep reflection.

### Reflective questions

1. In case example 5, what might be the impact and significance of this research?
2. Reflect on an example of your outdoor practice (e.g. a journey or expedition, work at an outdoor/environmental centre or camp, a specific outdoor activity). As an educator, which

activities have the greatest impact and how do you know? If you do not know, how could you find out? How might research inform your practice?

3. In your own outdoor practice, how could you mediate or alter an activity for participants to increase the meaning for them?

4. If you were asked at an interview for a job why research is important in OEE, what would your response be?

5. How could you extend your reflection and reflexive practice?

### **Suggestions for additional reading**

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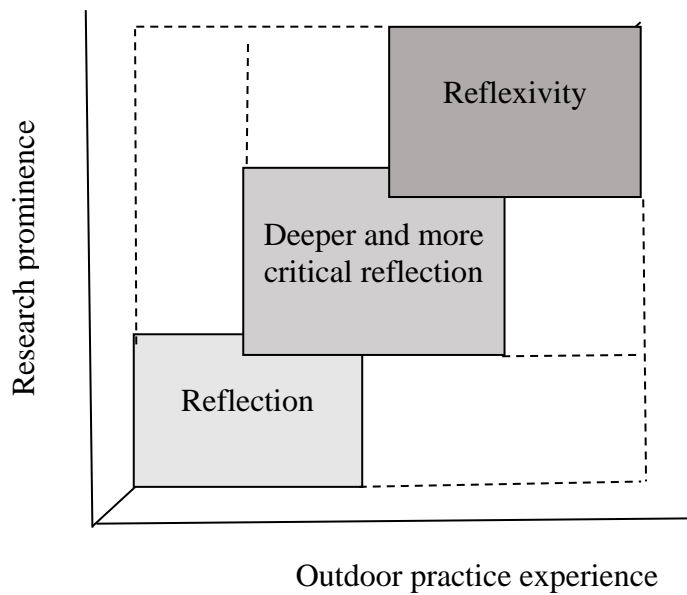


Figure 1: The prominence of research and reflection in individual outdoor practitioner consciousness