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Developing ‘It Depends’ in The Wild:

An Exploration of Outdoor Instructors’ Professional Judgement and Decision Making, and its Development in The Outward Bound Trust.

Alice Mees

Doctor of Philosophy
The University of Edinburgh
2023
Acknowledgements

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me laugh when I need it. Truly, you are the most patient, loving and supportive person I
know. I couldn’t have done it without you. Thank you for everything, on to the next
adventure!
Abstract

Over the previous 10 years, research has demonstrated that professional judgement and decision making can make a significant contribution to safe, high quality practice in the outdoor sector. Despite its importance, however, the development of professional judgement and decision making skills have yet to be examined. Consequently, the aim of this thesis was first, to understand how the Outward Bound Trust’s instructors make judgements and decisions. Second, to identify how these judgements and decision making processes may be best developed by the Outward Bound Trust. From a pragmatic research stance, the thesis employed mixed, qualitative and quantitative approaches, deploying surveys, semi-structured interviews, and focus groups in pursuit of these aims.

An initial study employed a mixed methods approach and identified adaptive expertise as a characteristic of instructor expertise. This study demonstrated that instructors operated within a spectrum of adaptability. These instructors used a nested approach in which their session-by-session decisions were made within a broader planning framework, however, their overly detailed plans and preoccupation with safety limited their adaptability in-action.

A subsequent study of early-career instructors found that they prioritised safety over learning, which in turn generated high cognitive loads. Their decision making was developed through a social experiential learning process, underpinned by metacognitive skills and challenging formative experiences. Notably, the national governing body qualifications and associated training did not support the development of adaptable decision making in these instructors.

Next, the early career study was replicated with mid-career instructors. Here, decision making was based on pre-identified options, and informed by high levels of situational comprehension. These instructors developed their decision making through an embodiment of Outward Bound’s Hahnian philosophies which value continual progression. They
deliberately practiced decision making skills, and reflected on critical experiences, in a process akin to a cognitive apprenticeship. The final study explored cognitive apprenticeship as an approach to facilitate decision making development. The study found that the Outward Bound Trust were applying a cognitive apprenticeship approach in staff development. However, these approaches were applied inconsistently and thus needed to be applied more effectively. Outward Bound’s Hahnian educational philosophies and a well-established community of practice partially compensated for those shortcomings. Notably, however, the current approach required refinement for a more significant impact. Recommendations are made for additional training for those in staff development roles and an ‘alpha’ model presented as a primer for future development.
Learning through adventure in the wild has been a core aspect of adventure education since its conception in the 1940s. Outdoor instructors must continuously make decisions about how to facilitate education using adventurous environments, balancing the benefits against the associated risk to maintain appropriate safety and learning. Developing the skills which underpin this decision making, therefore, is crucial. A lack of existing research in outdoor instructors’ decision making, and its development, necessitated a project with two aims: (1) to understand how the Outward Bound Trust’s instructors make judgements and decisions, and (2) to identify how these judgement and decision making processes may be best developed by the Outward Bound Trust. The research was situated in the Outward Bound Trust; a residential adventure education provider, focussed on the personal development and holistic education of young people. The research utilised a combination of interviews, surveys, and focus groups to create meaningful findings for the Outward Bound Trust.

The first study examined the type of expertise required as an outdoor instructor, finding that, rather than routines and procedure, adaptability was essential. Unlike previous ideas of expertise, the instructors showed varied levels of adaptability, a spectrum linked with their development. The next two studies identified key components of instructors’ decision making, and its development. Three aspects were identified: (1) having a number of pre-identified options to choose from, (2) high levels of situational comprehension (noticing, understanding, and predicting changes in the group and the environment), and (3) high levels of understanding, and control, of one’s own thought processes. The Outward Bound Trust appeared to develop instructors’ decision making through approaches similar to a cognitive apprenticeship (modelling, scaffolding, coaching, reflection, articulation, exploration). The final study therefore evaluated the Outward Bound Trust’s approach to development. The findings showed that
although a cognitive apprenticeship approach was evident, its use was unintentional and inconsistent, and therefore achieved mixed success. The findings across all studies suggested that there was an opportunity for the Outward Bound Trust to improve their development of instructors’ decision making. I recommend, therefore, that the Outward Bound Trust intentionally prioritise this development, a change which would align the Outward Bound Trust’s practice more closely with their developmental values and philosophy. Additionally, further training is recommended for the Outward Bound Trust’s managers (those responsible for supporting the instructors’ development) in the use of cognitive apprenticeship, and, the underpinning aspects of decision making. Ultimately, these enhancements would support the Outward Bound Trust to develop instructors who make adaptable decisions in the field which support both the technical and educational aspects of their role.
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<tr>
<td>AEx</td>
<td>Adaptive expertise</td>
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<tr>
<td>CA</td>
<td>Cognitive apprenticeship</td>
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<tr>
<td>DM</td>
<td>Decision making</td>
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<tr>
<td>OBI</td>
<td>Outward Bound Trust instructor</td>
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<td>OBT</td>
<td>The Outward Bound Trust</td>
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<td>Glossary</td>
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<td><strong>Adaptive Expertise (AEx)</strong></td>
<td>AEx involves recognising situations in which routine will not suffice,</td>
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<td>flexibly applying existing knowledge to new situations and challenges to create novel solutions. (Bransford et al., 2005; Hutton et al., 2017).</td>
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<td><strong>Classical decision making</strong></td>
<td>Classical DM is considered a ‘traditional’ DM approach whereby decisions are made as a result of careful consideration, weighing up options in a logical and analytical manner (Abraham &amp; Collins, 2011b; Edwards, 1954).</td>
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<tr>
<td><strong>Cognitive Apprenticeship (CA)</strong></td>
<td>An approach to cognitive development whereby the expert makes their thinking visible (Dennen, 2004), using strategies such as modelling, coaching, scaffolding, articulating, reflecting and exploration (A. Collins et al., 1991).</td>
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<td><strong>Community of practice</strong></td>
<td>A group of individuals with a shared practice, who engage in learning collectively (Wenger &amp; Trayner-Wenger, 2015).</td>
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<td><strong>Conditional knowledge</strong></td>
<td>The understanding of when and where declarative (the what) and procedural (the doing) knowledge can be applied appropriately in context; knowing why something works (Alexander et al., 1991).</td>
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<tr>
<td><strong>Epistemological Chain</strong></td>
<td>The linking of philosophies, beliefs, and behaviours (Grecic &amp; Collins, 2013).</td>
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<tr>
<td><strong>Hyperdynamic environment</strong></td>
<td>A complex environment or situation, often described as messy and wicked (S. Simon et al., 2017). It may be time-limited, and involve ill-structured problems, and multiple interrelating factors (L. Collins &amp; Collins, 2016a), requiring and adaptable approach (L. Collins &amp; Collins, 2016b).</td>
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<tr>
<td><strong>Metacognition</strong></td>
<td>The knowledge about, and control over, one’s cognitive processes (Veenman et al., 2006).</td>
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<tr>
<td><strong>Naturalistic decision making</strong></td>
<td>Decision making in situations which are uncertain, changing conditions, including aspects of decision making such as heuristics, and intuition (Zsambok &amp; Klein, 1997).</td>
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<tr>
<td><strong>Outdoor Instructor</strong></td>
<td>The generic term in the UK for outdoor or adventure professionals operating in one of three domains: performance development, personal development and experiential development (L. Collins &amp; Collins, 2016a; Sinfield et al., 2019).</td>
</tr>
<tr>
<td><strong>Outward Bound Trust (OBT)</strong></td>
<td>An educational charity providing personal development for young people aged 10–25 through residential adventure education courses which operate in wild, hyperdynamic places (Outward Bound Trust, 2023). These courses are underpinned by Hahnian educational philosophies (Cunningham, 2023) that exploit this hyperdynamic nature for the purpose of development.</td>
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<tr>
<td><strong>Professional Judgement and Decision Making (PJDM)</strong></td>
<td>A contextually situated dual-process DM model in which classical DM and naturalistic DM operate in synergy, the proportion of each being dependant on the context (Abraham &amp; Collins, 2011b).</td>
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<td><strong>Situational awareness</strong></td>
<td>The perception of information, comprehension of its meaning in context, and projection of that information to predict future events, their implications and potential cognitive demands (Endsley, 1997).</td>
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<tr>
<td><strong>Situational demands</strong></td>
<td>The understanding of contextual elements such as, the demands created by the task, the participants, and the learning environment, and their impact on decision making (Abraham &amp; Collins, 2015; Flach, 1995).</td>
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Publications and Presentations Emanating from this Thesis

Publications


Mees, A., & Collins, L. (2022). Doing the right thing, in the right place, with the right people, at the right time; a study of the development of judgement and decision making in mid-career outdoor instructors. Journal of Adventure Education and Outdoor Learning. https://doi.org/10.1080/14729679.2022.2100800

Presentations


1. The Adventure of Development: Introduction

1.1. Setting the Scene: Learning Through Adventure

Adventure happens in wild places; it is complicated, messy, and unpredictable (L. Collins & Collins, 2016a; S. Simon et al., 2017). Specifically, the dynamic environment can be stormy and turbulent, however, the wild is also a place of learning and reflection. Welcome to adventure education, and the workplace of the outdoor professionals that teach, coach, and guide in these wild places. Harnessing the wild nature to facilitate development (Brown et al., 2016; Institute for Outdoor Learning, 2023), adventure education can be fast and slow, powerful and quiet, unpredictable and calm. Clearly then, there is no one solution to any problem in the wild.

Adventure education typically follows a pedagogic model of experiential and active learning, capitalising on situations that are either intentionally designed, or naturally occurring in the environment (Sibthorp & Richmond, 2016). In the UK, adventure education courses tend to involve activities such as hill walking, mountain scrambling, canoe and kayak journeys, gorge walking, caving, and rock climbing. Many of these activities, however, carry inherent risk (Adventure Activities Licensing Association, 2023). For those who work within adventure education there are two approaches to managing these risks. First, minimising exposure to risk by removing the wild and unpredictable nature of the activities. The second, taking an active and continual risk-benefit analysis approach.

The first approach eliminates the very environments which create learning opportunities, encouraging a ‘cotton wool culture’ (Gill, 2010). The second is a risk utilisation approach, in which risk is weighted against the beneficial development opportunities offered by participation (L. Collins, Simon, et al., 2018; L. Collins & Collins, 2016a). This relies on the outdoor professionals’ decision making (DM) to deliberately manage the wildness of the physical environment, and consequently create an appropriate
learning environment (L. Collins & Collins, 2016a). This latter approach is the context in which this thesis, and the Outward Bound Trust (OBT), considers adventure education.

1.1.1. The Outward Bound Trust

OBT is an educational charity offering personal development for young people aged 9–25 years. The first Outward Bound ‘school’ was established in 1942 by Kurt Hahn to develop resilience in young men entering the merchant navy during WWII. Outward Bound, the nautical term for a ship leaving port on a sea journey, now refers metaphorically to young people beginning a journey of personal development (Outward Bound Trust, 2023). While its initial wartime purpose has evolved, OBT’s courses remain underpinned by Kurth Hahn’s original educational philosophies (Cunningham, 2023). This ‘Hahnian philosophy’ centres on the notion that people, young people in particular, are capable of more than they believe they are, Hahn’s motto being the Latin *plus est en vous*—there is more in you.

Hahnian philosophy believes development is best achieved through the following: (1) experiential learning - learning through the act of ‘doing’ something, rather than simply receiving information; (2) challenge - this experiential learning requires a level of physical or mental challenge which creates the potential to fail, and is essential to development of perseverance and resilience; and (3) nature - the natural world offers great potential for development by creating an unpredictable environment in which learning can take place (Hanford, 2015; Veevers & Allison, 2011). Internationally, there are now over 30 Outward Bound ‘schools’, collectively known as ‘Outward Bound International’, which all operate with this Hahnian Philosophy (Outward Bound International, 2023). This thesis, however, focusses specifically on OBT, the charitable trust which includes the UK’s Outward Bound schools.

OBT’s mission is “to use wild adventures to inspire young people to believe they can achieve more than they ever thought possible” (Outward Bound Trust, 2023, p. 1). OBT work
with approximately 25,000 young people each year, who predominantly access OBT courses through mainstream school education (78%). Others choose to book onto a summer program individually (5%), or access OBT through workplace education, for example, apprenticeships (17%) (Outward Bound Trust, 2024). Through bursary support drawn from fundraising, many of the places on OBT’s courses are significantly reduced in cost to minimise barriers to young people from deprived areas of the UK to access these opportunities. These young people represent the diverse nature of the population, arriving at OBT with a range of educational, physical, and psychological needs, including physical disabilities, mental health challenges, and educational needs (Outward Bound Trust, 2024, see Appendix F).

OBT achieve their mission through residential adventure education courses. These courses are delivered from one of OBT’s six residential Centres based in Eryri (Snowdonia), the Lake District, and the Scottish Highlands. Each OBT Instructor (OBI) will be responsible for a group of up to 14 individuals (12 young people and up to two adults) for the full course, which ranges from 3 to 19 days in duration (most commonly 5 days). The OBI takes their group into the wild environments of the National Parks in which their Centre resides, embarking on adventurous journeys including mountain expeditions, overnight wild camping, canoe journeys, mountain scrambling, or rock climbing. OBIs facilitate young peoples’ development by exploiting the nature of these wild environments to create, and capitalise on challenges presented by the environment, with the intention of allowing them to see and achieve beyond their perceived limits. Each group will have a range of differing individual needs, and together create a unique group dynamic in their interaction with one another and the environment. OBIs must first understand these needs, and then make decisions which allow them to create a situation in which each individual, including the visiting members of staff (e.g., teachers), can safely engage with both the adventure, and their development. The OBIs then help young people to reflect on their adventures, their failures, their achievements,
and their learning, with the goal of developing skills such as self-awareness, confidence, resilience, teamwork, leadership, emotional control, planning and goal setting, and environmental awareness (Outward Bound Trust, 2017).

The combined complexities of the physical environment, young people, visiting staff, and the intended outcomes of the course, contribute to the hyperdynamic (L. Collins & Collins, 2015a) situation in which OBT’s instructors must make judgements and decisions. Decisions which affect the safety of participants, safety of the OBI, and the quality of personal development (OBT’s mission).

1.1.2. Risk and the Need for Good Decision Making

Operating in the hyperdynamic environment involves managing risks. In fact, risk is considered a defining feature of adventure education (Brown & Fraser, 2009). The Outdoor Education Advisers’ Panel in the UK define adventure education activities as “activities which are exciting and challenging and which involve significant inherent risk of harm, without which the activity would lose much of its value, or which takes place in a remote or hazardous location” (Outdoor Education Advisers Panel, 2022, p. 1). However, while inherent risk is a part of adventure education, and therefore managing these risks is essential, excessive focus on safety would remove the desirable opportunity to develop, and the challenge and unpredictability which are essential to the Hahnian philosophy. Thus, at its most rudimentary level, DM for outdoor instructors is about balancing risk and competence to maintain an acceptable level of safety in an inherently risky activity (Boyes & O’Hare, 2003). Ultimately, failing to make ‘good’ decisions in adventure education can result in injury, or death. History offers some examples as to the potential ‘worst case’ outcomes. The three examples below are prominent in the adventure education sector (though they are not OBT examples) and have been reported among the wider adventure education sector, and in the press.
1) **Cairngorm Plateau, 1971.** Six school children and two outdoor instructors set off on a winter expedition on the Cairngorm plateau in the Scottish Highlands, UK. In deteriorating weather and heavy snowfall, the instructor attempted to lead the group to a stone shelter on the mountainside, however failed to reach it. The party were stranded in the storm for two nights. Consequently, five students and one instructor lost their lives to exposure. The event had a major effect on mountaineering in Britain, and at a political level there were proposals to prohibit all mountaineering courses for young people (Thomson, 2014), creating the potential to cease all future adventure education in the UK.

2) **Lyme Bay, 1993.** A group of eight school children and two instructors attempted to make a two mile canoe trip across Lyme Bay in Dorset, UK. Following several capsizes in challenging sea conditions, which the instructors did not predict and were unable to manage, the group were eventually rescued by the coastguard. Four of the eight young people lost their lives to drowning. In the following inquest, both the centre manager and centre owner were charged with manslaughter and received custodial sentences (Adventure Activities Licensing Authority, 2002; Allen, 1995).

3) **Mangatepopo Canyon, 2008.** A group of 10 students, one teacher and one instructor undertook a journey in the Mangatepopo gorge, New Zealand. Following heavy rain, the water levels in the canyon rose significantly, unanticipated by the inexperienced instructor. The group initially waited on a ledge out of the water, however an inaccurate appraisal of the situation led the instructor to re-enter the water with the group. Six students and one teacher were washed away and died. The instructor survived, but must now live with the burden of their decisions (Brookes et al., 2009).
These ‘worst case’ examples highlight the potential implications of poor DM in adventure education, harming not only those directly involved, but also the organisation and potentially, could undermine the legacy adventure education itself. In a hypothetical scenario, within OBT, poor DM leading to similar outcomes would impact the individual instructor, Head of Centre, Director of Learning and Adventure, and the Chief Executive. All of whom may be liable to legal action or criminal charges, as well as the moral weight of causing harm. As such, at the most fundamental level, it is essential that OBT are confident in the ability of their instructors to make good decisions in the hyperdynamic environments in which they are employed to operate. Moreover, OBIs must be able to make more nuanced decisions regarding the balance of safety and the educational aspects of their work – the ‘adventure’ and the ‘education’. Failings here may not result in physical injury, however, would risk OBT’s mission, the reputation of the organisation, and even the enduring Hahnian philosophy. It seems then, that developing OBIs’ ability to make decisions is a practical problem, requiring practical outcomes.

Recognising the significance of good DM to their instructors’ practice, OBT participated in a study by D. Collins and Collins (2020) which involved the development of metacognition in their OBIs. Through the study, OBT explored the use of a series of questions, the ‘Big 5’, which followed an increasingly metacognitively challenging framework, with the intention of supporting OBIs’ reflective practice on their decisions:

1) What happened/what did you do?
2) Describe the other ways you could have also done that.
3) What made you choose the way that you did?
4) What would have made you choose one of the other options?
5) What would you do if? A real situation.
Through the study, these questions became a tool recognised by some within OBT, coinciding with the beginning of the research presented in this thesis. OBT were eager to gain further insight into their instructors’ DM and to understand how to better develop these skills, and thus supported ongoing research which may result in practical and useable findings for the organisation.

1.2. The Outdoor Instructor

Although adventure education is still not considered a “proper job” by some (Brown et al., 2016, p. 184), as a career, it has become increasingly professional over the past 2 decades. Of note, and in evidence of this professionalisation, the Institute for Outdoor Learning was established in 2001 as a professional membership institute. Its aim is to develop adventure education as a respected form of education and employment within the UK. The Institute offers continued professional development opportunities to outdoor instructors through conferences, workshops, and seminars, and offers professional recognition for those working in adventure education through a series of recognised accreditations (Institute for Outdoor Learning, 2023). The ‘Recognised Practitioner’ accreditation requires the instructor to demonstrate they are able to lead safe and engaging adventure education sessions, contribute to their organisation’s delivery of adventure education, take an inclusive and professional approach to group leadership, and continue their own development through reflection (Institute for Outdoor Learning, 2023). OBT requires all OBIs to attain this accreditation within their first year in the organisation as an acknowledgment of OBIs’ professional approach to adventure education.

Within the sector, professional practice can be considered in three domains: performance development – typically described as ‘coach’, personal development – typically described as ‘educator’, and experiential development – typically described as ‘guide’ (L. Collins & Collins, 2016a; Sinfield et al., 2019). However, outdoor instructors, regardless of
their working domain, move within these three roles depending on the environment, the group needs, and the intended outcomes of a given interaction (Carson et al., 2020); the conditions in which the learning takes place. Figure 1.1 extends Collins et al. (2014) model, illustrating the extensive overlap of each domain in practice. The role of the OBI moving between the domains as the situation depends, utilising aspects of all three domains conditionally (shown by the shaded area).

Given this extensive crossover, outdoor instructors have been variously described as facilitators (e.g., Thomas, 2008), educators (e.g., Gray et al., 2011), teachers (e.g., Dyment et al., 2018), coaches (e.g., Collins & Collins, 2012), leaders (e.g., Galloway, 2007), or guides (e.g., Webb et al., 2021), to name a few. To further complicate, the term ‘outdoor’ and ‘adventure’ have also been used interchangeably. Broadly, these professionals have been described in the UK as ‘outdoor instructors’. As such, while acknowledging that outdoor instructors utilise the skills of coach, educator, and guide as required by the situation, this is the term I will use in this thesis to describe these outdoor professionals.

Recently, research in adventure education has focused on the DM of those operating with a performance development focus (e.g., Barry et al., 2023; Christian et al., 2017; Collins & Collins, 2015; Eastabrook et al., 2022; Simon et al., 2017). However, the personal development domain has historically been researched to a greater extent. Personal development, through the medium of outdoor adventure, prioritises the holistic education and development of the person, above technical or physical skill development (Sinfield et al., 2019). One of the longest standing providers of this education is OBT (Veevers & Allison, 2011).
Figure 1.1. The overlapping aspects in professional practice of outdoor instructors. The shaded area representing the role of the Outward Bound Instructor, utilising aspects of all three domains (adapted from L. Collins et al., 2014)

While there are many consistencies across the operational environment and skills, the three domains differ in some key aspects. Notably, the participants’ motivation for engaging (Eastabrook & Collins, 2019), the aims and purpose of the development, the stakeholders involved, and the ratios in which they work. These ‘typical’ characteristics of each domain are detailed in Table 1.1. Collins and Collins, (2014) acknowledge the extensive overlap of roles and highlight adventure education as an aspect of the adventure sports coaching role. It is appropriate, therefore, to consider research from all three domains in relation to outdoor instructor DM, including recent research into the performance domain of adventure sports coaching. This thesis, therefore, draws together recent research on DM in coaching, teaching, guiding, and instructing to support DM development in the context of adventure education, specifically, within OBT.

1.2.1. Decision Making as an Outdoor Instructor

The ability to decide on what developmental approach to use, and in what context, is central to successful facilitation of development in an adventure setting, a skill which has been
operationalised in Professional Judgement and Decision Making (PJDM) in a number of fields (e.g., Abraham & Collins, 2011; Downes & Collins, 2021; Martindale & Collins, 2005; Taylor & Whittaker, 2018). When considering the adventure education environment, its potential for risk, and the necessity for learning, the crucial nature of each decision made by the outdoor instructor is clear, binding together the various aspects of coach, guide, and educator, in environments which are potentially harmful (L. Collins & Collins, 2013).
| Table 1.1: Typical Contextual Characteristics of Outdoor Instructors in the Personal, Performance and Experiential Development Domains of Adventure Education (L. Collins & Collins, 2012, 2016a; Sinfield et al., 2019) |
|-----------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| **Personal development**                      | **Performance development**                                   | **Experiential development**                                  |
| **Essential skills**                          | Judgement and DM, reflection, creativity, flexibility, interpersonal skills, technical performance skills | Judgement and DM, reflection, creativity, flexibility, interpersonal skills, technical performance skills |
| **Instructor’s perception of the role**        | Developing an independent person ‘an educator’                | Developing independent performers in context                  |
| **Individual: Participants**                  | Young people, often in formal education. Additional stakeholders such as teacher/ employer of participant | Individuals or groups, largely adults                        |
| **Individual: Participant motivation**        | Often not participants’ choice, therefore, level of engagement can be mixed | Generally self-motivated                                     |
| **Task: Purpose**                             | Developing holistic personal skills.                         | Developing technical skills, and independent performance     |
| **Task: Aims and outcomes**                   | Generally, broad outcomes specified by organisation/customer; individualised outcomes identified by instructor | Identified between participant and instructor, ‘wants and needs’ |
| **Task: Delivery approach**                   | Participant-focused, individualised, and differentiated, balanced against other individuals in the group | Participant-focused, individualised, and differentiated, balanced against other individuals in the group |
| **Task: Working ratio**                       | Typically 10-14 individuals                                   | Typically 4-8 individuals, sometimes one-to-one               |
| **Environment: Working environment factors**  | Hyperdynamic, adventurous, wild                               | Hyperdynamic, adventurous, wild                               |
| **Environment: Organisation**                 | Typically a mix of larger and smaller organisations. Some freelance who operate under another organisation | Typically smaller organisations or self-employed individuals  |
| **Environment: Role of technical skills**     | To maintain safety; to develop enough skills to participate in a journey to allow holistic educational aims to be achieved | To develop participant technical skills and teach them to diagnose errors in own performance |
| **Environment**                               | Mix of organisations, generally club or voluntary             | To enable a journey, maintaining safety, and to offer technical input if needed |
Consequently, over the last decade, there has been a growing interest in the DM of outdoor professionals (e.g., Boyes & Potter, 2015; Carson et al., 2020; Collins, Carson, et al., 2018; Collins & Collins, 2016c; Culp, 2016). To date, the focus has predominantly been on the PJDM of ‘expert’ outdoor professionals in the performance domain (e.g., Collins & Collins, 2016b; Simon et al., 2017). This research offers insight in expert DM, while also noting a gap in the literature around the DM of those who are yet to achieve expertise, and in the DM of other roles (personal development-education and experience-guiding). In particular, the current literature lacks evidence about how to develop such DM expertise. Though recently Barry and Collins (2021) have suggested possible ways in which DM may be developed. Consequently, there is a clear research gap in how outdoor professionals can develop their DM. Indeed, McCammon (2004) noted the conspicuous absence of DM from most outdoor professionals’ education and training programs; a result, perhaps, of the lack of empirical evidence to draw from.

To begin to fill these gaps, it was necessary, therefore, to understand the characteristics and existing development of DM in outdoor professionals, specifically I chose to examine OBT. Firstly, understanding the components of DM in outdoor instructors who are not yet considered ‘expert’ – those who are currently under served in the existing research – seemed essential. In conjunction, an exploration of the factors which influenced these OBIs’ DM development. This exploration considered OBIs’ view of their own DM development, to ensure findings were applicable to the domain they were intended. Comparing these attributes and development of DM at different points of OBIs’ progression allowed a greater understanding of OBIs’ developmental journey regarding their DM. It also offered the potential to identify and evaluate a possible approach which may facilitate this development more effectively.
As a current and experienced outdoor instructor who has studied, trained, and worked in adventure education for over 13 years, I see the value in evidence-informed practice. Yet, I also observe that often, research findings are impractical or inaccessible to outdoor instructors in the real-world. In bridging both professional and academic worlds, I consider myself a pracademic (L. Collins & Collins, 2019b; Posner, 2009). Accordingly, I have taken a pragmatic approach to this work. My intention was to produce valuable and practical outcomes, which offer a comprehensive understanding of how OBT may support OBIs in the development of their PJDM.

1.3. Research Objectives

Consequently, to fill the gaps in the literature, the thesis examined the judgement and DM of outdoor instructors working for OBT. The intention being to generate outcomes which support OBT to better deliver their mission, by developing the DM of their OBIs. The overall aim of this research, therefore, was:

To understand how the Outward Bound Trust’s instructors make judgements and decisions, and to identify how these judgement and decision making processes may be best developed by the Outward Bound Trust.

This aim was fulfilled through the following objectives:

Chapter 4:

1) To determine if outdoor instructors, including Outward Bound Trust instructors, are adaptive experts.

2) To identify and analyse the features of adaptive expertise in a sample of Outward Bound Trust instructors.

Chapters 5 and 6:
3) To identify and analyse the key components of decision making in early-career and mid-career Outward Bound Trust instructors.

4) To explore how early-career and mid-career Outward Bound Trust instructors have developed their judgement and decision making.

Chapter 7:

5) To compare key components and development of early-career and mid-career Outward Bound instructors’ judgement and decision making, and propose an approach to best develop judgement and decision making in Outward Bound Trust instructors.

Chapter 8:

6) To evaluate the Outward Bound Trust’s current approach to instructor induction and judgement and decision making development, and its alignment with a cognitive apprenticeship framework.

7) To make recommendations regarding how the Outward Bound Trust’s current approach to judgement and decision making development can be best developed and enhanced.

1.4. Outline of the Thesis

With the present Chapter providing a very brief overview of the research context, Chapter 2 expands on this by reporting and reflecting on relevant literature to situate the empirical studies that follow. Chapter 3 discusses the philosophical underpinnings of the research, my pragmatic approach, and the resulting methodology and research design. A series of empirical studies are then presented. Given the lack of empirical research, this thesis took an exploratory approach to understand the specific needs of OBIs’ PJDM development. Each study was informed by the previous study’s findings, contributing to the wider understanding of OBIs’ developmental journey, the findings’ strengths being uniquely situated within OBT.
Chapter 4 considers the type of expertise outdoor instructors require and identified the characteristics of that expertise in OBIs, reflecting objectives 1 and 2. The Chapter found that outdoor instructors, including OBIs, operate on a spectrum of Adaptive Expertise (AEx) which was supported by a PJDM approach. These findings provided direction for the future development of OBIs and an insight into their PJDM. Subsequently, Chapters 5 and 6 present two parallel studies, which were conducted sequentially and are in line with objectives 3, and 4. Chapter 5 explores the PJDM of early-career OBIs, while Chapter 6 mirrored this study with mid-career OBIs. This allowed for direct comparison between early and mid-career OBIs, and therefore a progressive development of OBIs’ PJDM was conceived (objective 5). This comparison is presented in Chapter 7, and highlighted the similarities found between OBIs’ PJDM development and a CA. Consequently, Chapter 8 evaluated OBT’s current OBI development against a CA framework, in line with objectives 6 and 7. Finally, Chapter 9 presents implications and a concluding discussion, and offers recommendations to OBT and the wider adventure education sector.
Part 1

Chapter 1 set the scene for adventure education, briefly describing the context in which outdoor instructors make decisions. The Chapter presented a need for further investigation into outdoor instructors’ PJDM and its development, and therefore offered the aim and objectives of this thesis.

Part 1 consists of Chapters 2, 3, and 4. Firstly, Chapter 2 examines and reflects on the existing literature on PJDM and its development, offering contextualisation to the outdoor instructors’ environment. Chapter 3 then considers the philosophies and philosophical assumptions that underpin the research methodology. Lastly, Chapter 4 presents an initial study which sought to determine if outdoor instructors, including OBIs are adaptive experts, and to identify and analyse the features of adaptive expertise in a sample of OBIs; a crucial aspect in comprehending the demand for DM skills and their potential development going forward.
2. Professional Judgement and Decision Making and the Outdoor Instructor: Reviewing the Literature

In this Chapter, I report and critically reflect upon the literature investigating PJDM, and its relation to the practice of outdoor instructors in OBT. I situate and contextualise the empirical research presented in Chapters 4, 5, 6, and 8. Much of the literature associated with the outdoor sector is related to coaching, or has been drawn from other technical fields, including teaching, nursing and the military. In subsequent Sections of this Chapter, I will therefore draw together the research and provide relevant examples, though there will of course be a conscious element of theory elaboration (Braxton, 1999).

Firstly, the Chapter considers the context in which outdoor instructors’, specifically OBIs’, DM is situated and the hyperdynamic environment in which they operate. Following this, I consider the underpinning DM theories relating to PJDM, that is, classical and naturalistic DM. I next discuss PJDM as a dual process, before examining the factors influencing PJDM, namely knowledge, skills, philosophy, individual factors, and the conditional nature of PJDM. I then illustrate the existing position of PJDM development in outdoor instructors. Finally, this Chapter describes the questions arising from the existing literature, which form the basis of the empirical research presented in this thesis.

2.1. Outdoor Instructor Operating Environment

Judgement and DM are considered valuable outdoor leadership skills (L. Collins, Carson, et al., 2018; Martin et al., 2006). Outdoor instructors must skilfully choose and implement pedagogic and technical skills, whilst retaining a cognitive capacity to manage both the long-term and acute demands that working in a dynamic environment may create (L. Collins & Collins, 2019a). The ability to choose which tool to use, and in what context, is a core skill for the outdoor instructor and has been operationalised in sports coaching via PJDM, by
Abraham and Collins (2011b) and more recently in adventure sports (L. Collins & Collins, 2015a, 2016b, 2016c). PJDM has also proven effective in other domains including social work (Taylor & Whittaker, 2018), sports psychology (Martindale & Collins, 2005), and strength and conditioning (Downes & Collins, 2021).

The dynamic nature of the outdoor instructor operating environment poses significant challenges to the decision maker. For example, the natural aspects of the environment mean outdoor instructors have little control over environmental variables once they are in the field. This is combined with the challenge of meeting specified learning outcomes, which are often pre-determined by other stakeholders (e.g., customer or employer), or specific demands posed by an individual or group interactions. The outdoor instructor clearly has a demanding role that requires high levels of DM ability in relation to pedagogy, environment, group dynamics, logistics, venue choice and safety (Boyes & Potter, 2015; L. Collins & Collins, 2016a). This situation is complex, involving ill-structured problems (S. Simon et al., 2017), high cognitive loads (L. Collins & Collins, 2019a), multiple stakeholders, and is often time-limited (L. Collins & Collins, 2016a). It has been described as high-risk (L. Collins & Collins, 2013), information-rich (Webb et al., 2021), and messy (S. Simon et al., 2017). This environment is not only dynamic, it is hyperdynamic, as described by L. Collins & Collins (2015a).

### 2.2. The Outward Bound Trust Instructors

On joining OBT, OBI\(^s\) participate in a 6 week induction process that introduces the outdoor instructor to the organisational structures, operating procedures, support frameworks, and the OBT community of practice. Prior to employment OBI\(^s\) must be qualified, holding national governing body qualifications at the minimum level to operate in the environment, for example, Summer Mountain Leader, Rock Climbing Instructor (Mountain Training Association, 2023), or Paddlesport Instructor (British Canoeing, 2023). A process of in-house
final sign-offs are then used to authorise the OBI to lead activities. Notably, this process
highlights that OBT shares Barry and Collins’ (2021) view that national governing body
qualifications alone are not sufficient as an indicator of expertise within adventure education.
The nature of these qualifications is competency, rather than expertise based, yet, developing
DM skills requires a focus on expertise rather than competence (D. Collins et al., 2014). Once
operating at the expected level, and having gained a higher qualification in both adventure
and learning (such as Canoe Leader Award, Award in Education and Training), OBIs will
become Senior OBIs. They will then be developed further by OBT to undertake additional
responsibilities, such as directing multiple groups on a course programme. This professional
growth is supported by ‘Learning and Adventure Managers’, whose role it is to manage and
support ongoing professional development for staff. This ongoing support and development
is a practical manifestation, an epistemological chain, linking practice to the Hahnian
philosophies cited earlier.

The role of an OBI involves many factors, driven by the environment and group
demands. PJDM should, therefore, be at the heart of OBIs’ professional practice in these
hyperdynamic environments. The OBI is required to develop and continually refine their
practice, based on the demands created by the environment and the needs of the individuals
in the groups they lead, a PJDM approach. As PJDM is a dual DM process, I next consider
dual process DM models, before reporting on PJDM specifically as a dual process and a
model of OBI DM.

2.3. Dual Process Decision Making

Professional DM has been the focus of research for some considerable time (e.g., Carson et
al., 2020; L. Collins & Collins, 2015a; Dowding & Thompson, 2003; Klein, 1989; Orasanu &
Connolly, 1993; Shanteau & Stewart, 1992). One aspect of DM which has attracted
widespread interest is the notion of dual process DM (e.g., Culp, 2016; Evans, 2008; Grayot,
Indeed, dual process theories have been proposed for over 40 years (e.g., Chaiken, 1980; Hammond et al., 1987; Shiffrin & Schneider, 1977), becoming popular over the past 20 years (e.g., Culp, 2016; Evans, 2006; Wilson, 2002) as a way to understand the complexity of DM, particularly in dynamic environments.

Consequently, there are many iterations of dual process DM theories (see Table 2.1). Some of these ideas have developed in isolation and thus there is some overlap in the theories, with different language being used to describe what is essentially, the same thing (Evans, 2009).

Table 2.1. Dual System Theories of Decision Making and their Associated System One and System Two Labels. (Adapted from Evans, 2008)

<table>
<thead>
<tr>
<th>Authors</th>
<th>System one labels</th>
<th>System two labels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shiffrin and Schneider (1977)</td>
<td>Automatic</td>
<td>Controlled</td>
</tr>
<tr>
<td>Epstein (1994)</td>
<td>Experiential</td>
<td>Rational</td>
</tr>
<tr>
<td>Chaiken (1980)</td>
<td>Heuristic</td>
<td>Systematic</td>
</tr>
<tr>
<td>Evans (2006)</td>
<td>Heuristic</td>
<td>Analytic</td>
</tr>
<tr>
<td>Sloman (1996)</td>
<td>Associative</td>
<td>Rule based</td>
</tr>
<tr>
<td>Hammond et al. (1987)</td>
<td>Intuitive</td>
<td>Analytic</td>
</tr>
<tr>
<td>Stanovich (1999)</td>
<td>System 1</td>
<td>System 2</td>
</tr>
<tr>
<td>Strack and Deutsch (2004)</td>
<td>Impulsive</td>
<td>Reflective</td>
</tr>
<tr>
<td>Abaham and Collins (2015)</td>
<td>Naturalistic</td>
<td>Classic</td>
</tr>
</tbody>
</table>

The lack of a unifying theory presents challenges in the use of dual process theories in practice, particularly for those who do not operate exclusively within academia, such as pracademics (McDonald & Mooney, 2011) or those who have responsibility for the OBIs’ development, such as the Learning and Adventure Managers mentioned earlier.

While most of these dual processes share underpinning principles, all have in common a distinction between different cognitive processes. One of the best known describes system one, and system two thinking (Kahneman, 2011; Stanovich, 1999), though Evans (2019) prefers the terminology type one, and type two, to avoid the implication that these are simple processes. System one DM is considered ‘intuitive expertise’ by Kahneman and
Klein, (2009), whereby a fast, automatic, and apparently intuitive response to a situation provides an answer or a decision. System two can then be employed to rationally check, and potentially overrule system one’s response in a slower, deliberative and conscious manner. System two, essentially supporting and justifying the system one response (Evans, 2019).

Although dual system theories are both widespread and popular, criticisms suggest an oversimplification or a lack of clarity regarding the processes as sequential, or acting in parallel. For example, Grayot (2020) criticises dual system theories in economics research on the basis that systems one and two in fact operate on a continuum, as opposed to being discrete processes which do not overlap. Soosalu et al. (2019) suggest a three-factor model: the head, the heart, and the gut. The proposal being that, in existing literature, system one combines intuition (gut) and emotion (heart), despite the differences in decisions based on these elements. Soosalu et al. designed a tool to measure the differences between the head, heart, and gut, finding evidence which supported the three factors. Interestingly, they also report a difference across genders in their results, with men showing a stronger tendency for ‘head’ decisions and women showing a stronger leaning towards ‘heart’ decisions, supporting the notion of individual and gender differences across DM. Notably, however, whether these differences are biological, psychological or social is as yet unclear. Given that the tool is a self-reporting measure, the responses collected may reflect how individuals view themselves within the societal context. Societal expectations of men are that they should be logical and unemotional (head), while women are more often expected to be caring and attuned to their emotions (heart). Acknowledging this potential difference is especially relevant in DM under risk or uncertainty and in complex environments such as those that outdoor instructors operate in, as highlighted earlier in this thesis.

Despite a lack of clarity regarding the relationship between the dual processes, there is a general understanding that two systems of thinking, the fast low-effort, and the slower
high-effort, are at play in DM. In judgement and DM theory, system one aligns broadly with naturalistic DM and system two with classical DM.

2.3.1. Naturalistic Decision Making

Naturalistic DM is an umbrella term for models of DM which consider how people make decisions in ‘naturalistic’, in-action or real life situations (Zsambok & Klein, 1997). These naturalistic settings are characterised by ill-structured problems, uncertain dynamic environments, shifting or competing goals, action/feedback loops, time stress, high stakes, multiple factors, and organisational norms (Orasanu & Connolly, 1993). System 1 judgements by experts are largely accurate. However, these ‘intuitions’ are also susceptible to the flaws of human cognitions, such as heuristic biases and subsequent DM traps (Kahneman & Klein, 2009).

2.3.2. Classical Decision Making

In contrast to naturalistic DM, Classical DM is often considered a ‘traditional’ DM approach. The method proposes decisions are made as a result of careful consideration and weighing up of options (Abraham & Collins, 2011b; Edwards, 1954) in a logical and analytical manner. It comprises a series of sequential steps to be undertaken for a decision to be made. For example, defining the problem, gathering relevant information, considering options, listing solutions and consequences, implementing a decision, and re-evaluating (Martin et al., 2006). Classical DM can afford the individual accurate DM, but as a reflection of the quality of information used to inform the process. However, classical DM can be inefficient for in-action thinking (Beach & Lipshitz, 1993; Klein, 1989, 2001). Logically, classical DM in-action and naturalistic DM have evolved as processes to address classical DM’s limitations (Abraham & Collins, 2011b).
2.3.3. Professional Judgement and Decision Making

PJDM is conceived as a contextually situated dual-process DM model in which classical DM and naturalistic DM operate in synergy, the proportion of each being dependant on the decisions context. Having received increased attention over the past decade (e.g., Abaham & Collins, 2015; L. Collins, Carson, et al., 2018; L. Collins & Collins, 2015a, 2016b; Martindale & Collins, 2012), PJDM research has added greatly to the discussion on DM in coaching (Lyle & Muir, 2020). PJDM as a DM model is underpinned by three aspects; (1) the knowledge the individual holds or can elicit, (2) the skills they hold to enact a decision, and (3) the individual’s own philosophy (L. Collins & Collins, 2015b). Reflecting the reality that different situations require different approaches, classical DM and naturalistic DM should vary in proportional application for any given decision dependent on the context. In practical terms, this allows the outdoor instructor to make decisions appropriate to the situation. For example, in planning for a session it would be appropriate for an outdoor instructor to use a higher proportion of classical DM given the comparative stability of the situation. Whereas, during a canoe session in high winds, the instructor would need to use a higher proportion of naturalistic DM due to the fast-changing, dynamic nature of the environment.

Classical DM places high cognitive demands on the decision maker (Kahneman, 2011), and as such is more frequently used pre- and post-action (e.g., planning and reflection) when the outdoor instructor has more time and higher quality information (L. Collins & Collins, 2019a). Classical DM is also used opportunistically or by the creation of time for on-action in-context thinking (L. Collins & Collins, 2016b). As the environment becomes more complex (such as when there are ambiguities, time pressures or the information quality is poor) the cognitive load increases, and alongside, the need for naturalistic DM (Figure 2.1).
Figure 2.1. Varying Proportions of Naturalistic and Classical Decision Making in Dual Decision Making Process, Dependent on the Nature of the Environment (Adapted From Smith, 2020).
Notably, however, as indicated by Roberts and Cole (2018) with police firearms officers, in these complex tasks and environments there is potential for cognitive overload. Indeed, this added load may result in declines in attentional resources available for perception of the situation and DM, thus naturalistic DM also becomes more cognitively demanding (L. Collins & Collins, 2019a).

PJDM situates the use of both naturalistic DM and classical DM in a balance that requires critical thinking, anticipation, planning, in action and on action reflection. As such, PJDM also involves a metacognitive aspect whereby the outdoor instructor continually audits both the decisions and the DM process (L. Collins et al., 2016). The meta aspect of PJDM involves continual appraisal of the effectiveness of the DM process and regular adjustments based on the appropriateness of the proportions of classical DM to naturalistic DM, depending on the context.

### 2.3.4. A Possible Nested Dual Process Within Naturalistic Decision Making

Within naturalistic DM, there are a number of further processes often cited in relation to outdoor instructor DM which appear to be possible dual processes nested within the naturalistic DM element of the broader dual process. This highlights further the complex ‘it depends’ (D. Collins et al., 2022) nature of DM in the outdoor instructors context.

#### 2.3.4.1. Heuristics

Heuristics are strategies which allow decision makers to process information in a less effortful manner (Shah & Oppenheimer, 2008). The effort involved in DM is reduced by finding “satisfactory solutions with modest amounts of computation” (H. Simon, 1990, p. 11).

The two main schools of thought in heuristics are ‘heuristics and biases’ (Kahneman & Tversky, 1974) and ‘fast and frugal heuristics’ (Gigerenzer & Goldstein, 1996). The heuristics and biases approach focuses on the many ways in which heuristic DM can be flawed in comparison to rational DM. Conversely, while considering many of the same
heuristics, fast and frugal heuristics takes the view that heuristics are sound ways of making judgements. Thus, both are often equal to, or better than conscious reasoning (Hjeij & Vilks, 2023). Pragmatically, it seems reasonable to consider elements from both arguments. Heuristics can be useful strategies which enable rapid DM in dynamic and uncertain environments. Indeed, individuals often base decisions on them unknowingly (Gilovich et al., 2002; Maitland & Sammartino, 2015). This has led heuristics to be described as evolutionary and intuitive, enabling fast and accurate DM (Gigerenzer & Goldstein, 1996). However, heuristic DM is highly contextual. If the decision maker has developed the heuristic from limited experiences, a heuristic could be deployed in an inappropriate context and therefore has inherent weakness (S. Simon et al., 2017). These weaknesses are frequently based on inappropriate assumptions, constructed on narrow or shallow experiences of the decision maker. Therefore, while heuristics can be advantageous when supported with suitably broad and deep experience, they may also become biases or ‘traps’ (McCammon, 2001), see Table 2.2. Reflecting the dual processes of PJDM, a reliance solely on naturalistic DM processes, neglecting classical DM, may compromise the capacity of the outdoor instructor to make effective decisions (Abraham & Collins, 2015) – a heuristic bias. The duality is highlighted by Zajchowski et al. (2016) who argue that while “context-specific DM heuristics make outdoor recreation safer” (p. 131), some of the same traps exist alongside. In order to avoid these misapplications, a heuristic in itself, an explicit awareness of these traps is required. Additionally, the decision maker requires the capacity to critically reflect on their DM process (Abraham & Collins, 2011a; Strean et al., 1997)..
Table 2.2. Notable Heuristics and Biases (Adapted from McCammon, 2001 and S. Simon et al. 2017)

<table>
<thead>
<tr>
<th>Heuristic/Bias</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anchoring</td>
<td>Judgements remain close to initial information/values (perhaps based on irrelevant cues), despite new information.</td>
</tr>
<tr>
<td>Authority</td>
<td>Judgements made by perceived authority figures are over-weighted.</td>
</tr>
<tr>
<td>Availability</td>
<td>Background information is underweighted compared with readily available information.</td>
</tr>
<tr>
<td>- Primacy and recency</td>
<td>Initial events and/or more recent events are more easily recalled and therefore receive more weight. Historical experience is more vivid and is weighed more heavily than hypothetical alternatives.</td>
</tr>
<tr>
<td>- Status quo bias</td>
<td></td>
</tr>
<tr>
<td>Overconfidence</td>
<td>Being more confident in judgements than is accurate. (e.g., events judged to be impossible in some experiments happen about 20% of the time, while events judged to be certain happen only about 80% of the time).</td>
</tr>
<tr>
<td>Credulity/superstition</td>
<td>Evidence that supports patterns and explanations for coincidences is too readily accepted.</td>
</tr>
<tr>
<td>Confirmation bias</td>
<td>Information that supports previously formed explanations/hypotheses is over-weighted compared with other information.</td>
</tr>
<tr>
<td>Commitment/consistency</td>
<td>Desire to remain consistent with prior thoughts and actions.</td>
</tr>
<tr>
<td>Framing</td>
<td>The way in which information is presented (e.g., order) affects judgements of likelihood or estimates.</td>
</tr>
<tr>
<td>Familiarity</td>
<td>Familiarity in the setting or process leads to reproduction of a previous solution.</td>
</tr>
<tr>
<td>Halo effect</td>
<td>Judgements by someone that is considered likeable or knowledgeable are over-weighted.</td>
</tr>
<tr>
<td>Hindsight bias</td>
<td>The belief that whatever happened was inevitable and could have been predicted.</td>
</tr>
<tr>
<td>Illusion of control</td>
<td>The belief that skill can affect the outcomes of chance events.</td>
</tr>
<tr>
<td>Regression to the mean</td>
<td>Expectations that observed patterns will continue (i.e., that observations are representative).</td>
</tr>
<tr>
<td>Scarcity</td>
<td>The belief that a scarce resource is a desirable one.</td>
</tr>
<tr>
<td>Social proof</td>
<td>Groups with similar characteristics decisions are over-weighted.</td>
</tr>
<tr>
<td>Sunk cost</td>
<td>Desire to stick with something which has already been invested in (time/money/emotion).</td>
</tr>
</tbody>
</table>
Accordingly, the outdoor instructor asks themselves ‘am I making the decision in the right way?’, reflecting a meta-process within the dual process cited earlier (D. Collins et al., 2022; L. Collins et al., 2016).

It is worth noting, however, that much of the research into heuristics, both biases and fast and frugal, considers risk from a numerical (e.g., financial risk) perspective, as opposed to the hyperdynamic environment of the outdoor instructor. There would be value in further exploration of the topic, therefore, in open and dynamic context, aside from the views of undesirable biases and traps (e.g., McCammon, 2004; cf. S. Simon et al., 2017)

2.3.4.2. Recognition Primed Decision Making. Recognition primed DM (Klein, 1989) proposes that cues in the environment trigger fast access to previous experiences where judgements are made based on recognised patterns. There are four stages: situational recognition, situational understanding, mental simulation and serial evaluation of the outcomes of potential decisions. The process requires a high level of situational awareness – perceiving, comprehending and projecting elements in the situation. For outdoor instructors this projection must also consider risk versus benefit, and the level of cognitive demand required to enact any decision. Recognition primed DM processes happen at speed, and are repeated to consider different options until an acceptable solution is found, at which point that action is taken. A solution which satisfies (a heuristic) the needs of the decision maker is found and operationalised. The solution may not be optimal, but instead may be a ‘best fit’. This satisfising process allows for fast and cognitively efficient decisions, potentially reserving cognitive resources for later anticipated demands (L. Collins & Collins, 2019a). The decision on the best course of action, therefore, depends on the demands of the situation (Ashford et al., 2021) and the anticipated outcome and trajectory of development.

Boyes and Potter (2015) studied the application of recognition primed DM in outdoor expedition leaders, interviewing ‘expert’ leaders (average of 25 years’ experience, one
professional qualification). They found evidence of recognition primed DM in the leaders’ recollections of decisions. Though, by setting out to find evidence to prove the existence of recognition primed DM, Boyes and Potter did not consider alternative DM, thus their findings are unsurprising. Boyes and Potter describe a series of intuitive judgements as arising from experience, supporting Kahneman and Klein’s (2009) assertion that intuition is based on recognition. However, as with much research into expertise, including that of Kahneman and Klein, there is no consideration of the implication on DM for those who are not ‘expert’ or, who do not have the requisite experiences from which to derive intuitive judgements.

Despite these criticisms, the findings do contribute to what is a relatively small body of research into the DM of outdoor instructors, particularly in the personal development domain (as opposed to skills coaching or guiding, L. Collins & Collins, 2012). Nevertheless, while it is of benefit to understand the skills of experts, it makes little difference if there is no consideration of how to develop that expertise.

2.3.5. Evaluating decision making

Evaluating DM in naturalistic environments has an extensive history. Gore et al. (2015) catalogued naturalistic DM research papers across a variety of domains of expertise internationally, including healthcare, fire, ambulance, and elite sports. The findings demonstrated a variety of methods taken in inquiry, including: after action reviews, applied cognitive task analysis, observation, ethnography, simulation exercises, interviews, and augmentation analysis. Specific to adventure education coaching, guiding, and instructing, however, DM has predominantly been measured through reflective and self-reporting approaches (e.g., Barry et al., 2023; L. Collins & Collins, 2019a; Webb et al., 2021). In particular, the use of stimulated recall interviews appears popular, often reflecting a critical incident technique. Lyle and Muir (2020) question if this is a pragmatic response to pursuing
inquiry into cognitive processes which are typically difficult to conduct, or a result of underdeveloped methodology. However, this approach is regularly an aspect of a mixed methods approach (e.g., L. Collins & Collins, 2019a). Alternative approaches have also been taken, such as the use of virtual reality technology and ‘freeze probe’ technique (e.g., L. Collins et al., 2020) Regrating analysis, thematic analysis (see Braun et al., 2019) has been favoured, with some examples of other approaches (e.g., Barry et al., 2023), such as interpretive phenomenological analysis (J. Smith et al., 2022) and Applied Cognitive Task Analysis (e.g., Downes & Collins, 2023). These approaches offer the potential for the researcher to draw on their own expertise to enrich the research process, possibly accounting for their common use.

Despite a variety of approaches to evaluate DM, at present, the ability to measure DM remains somewhat lacking, and requires further research. Taylor et al. (2023) have begun to consider ‘how’ DM may be evaluated within professional practice (e.g., educational, and professional qualification processes). Taylor et al. highlight the need for an expertise rather than a competence approach, however there is certainly room for further exploration in how DM should be measured, particularly in hyperdynamic situations. Identifying which approach is ‘best’ to investigate DM remains a challenge. I suggest a pragmatic response: the ‘best’ method of inquiry being the option(s) which allow the researcher to explore their specific research problem most effectively.

### 2.4. Professional Judgement and Decision Making in the Outdoor Instructor Context

As noted earlier, Sinfield et al. (2019) examined three core domains in adventure sports: performance development (e.g., developing technical white water kayak skills); personal development (such as developing resilience and self-confidence); and experiences (experiencing a journey or environment). The nature of professional practice in the outdoor sector means that, to fulfil this complex and challenging role practitioners must use a
combination of skills from these different roles (L. Collins et al., 2018). For outdoor
instructors, the PJDM process is about identifying and applying the most appropriate role
(Martindale & Collins, 2012). For example, to enable a canoe journey with the aim of
leadership development, the outdoor instructor must teach some technical paddling skills to
take on the journey, they must facilitate the journey in a way in which participants can take
on different leadership roles and review their success, and simultaneously maintain safety as
the participants journey through the river environment. Outdoor instruction is fundamentally
a DM process based on the goals of the session, the outdoor instructor’s existing knowledge
and understanding (Abraham et al., 2006), and the knowledge gained through situational
awareness, in line with their pedagogical and personal beliefs (L. Collins et al., 2014).

Informed by theory from an adventure sports coaching setting, outdoor instructors’
PJDM likely begins by gathering information about the environmental conditions, and the
pedagogical needs of the group. The outdoor instructor can flexibly draw on both classical
DM and naturalistic DM supported by their environment-specific expertise (L. Collins &
Collins, 2015a) and their values and beliefs (L. Collins et al., 2014) to assess these needs in
the context of the conditions and create a ‘strawman’ plan (L. Collins & Collins, 2019a). This
plan may then be followed by an audit once in context. Initially, a combination of questioning
and observation of the participants, environment and their interaction would allow outdoor
instructors to collect, check, and re-check the validity and accuracy of environmental
information. They can then build knowledge about the individuals, which informs their
PJDM in a situated cognitive process (L. Collins & Collins, 2016c). This knowledge may
then be incorporated into the strawman plan in a continuous and adaptive cycle (L. Collins &
Collins, 2019a).

In contrast with traditional sports, the outdoor instructor’s operating environment has
an infinite number of variables, over which they have very little control (Christian et al.,
Additionally, and uniquely, outdoor instructors must operate in the environment alongside their participants. Thus, alongside pedagogic skills, outdoor instructors must also be independent performers in the environment they are operating within (L. Collins & Collins, 2012). The adaptation and flexibility required to work in such an environment calls for a PJDM approach, which, as noted at the beginning of this Chapter, relies on knowledge, skills and philosophy, something which I will explore in more detail later in this Chapter (Section 2.5).

Firstly, however, I draw attention to the fact that, as mentioned, the majority of recent research into PJDM in the outdoor domain has looked specifically at coaching processes in adventure sports (e.g., Christian et al., 2020; L. Collins & Collins, 2020; Cooper & Allen, 2018; Eastabrook et al., 2022; cf. Webb et al., 2021). Taking into consideration the description of outdoor instructors’ role in Chapter 1 and earlier in this Chapter, I suggest that this body of coaching research is well located to contextualise the personal development aspects of adventure education. Outdoor instructors working in personal development domain, such as OBIs, require many of the same skills, despite the identified differences between personal, skill, and experience development (Sinfield et al., 2019). However, I do not assume that all research into adventure sports coaching will translate directly to outdoor instructors. I will, therefore, provide specific outdoor instructor examples throughout the remainder of this Chapter, before reporting the empirical outdoor instructor research in the following Chapters.

2.5. Influencing Factors on Professional Judgement and Decision Making

Environments that require flexibility, particularly the hyperdynamic environment in which outdoor instructors operate, appear to necessitate a PJDM approach. In order to operationalise PJDM, outdoor instructors require conditional, domain specific knowledge which allows them to comprehend the situation. Tozer et al. (2007) hypothesise that outdoor instructors are
adaptive experts, a notion which I support. It seems that AEx is essential given the
environment and the associated demands of outdoor instructor DM. Consequently, AEx will
therefore form a key initial part of the empirical research in this thesis (Chapter 4). Finally,
the outdoor instructor’s values and beliefs, and individual psychological processing factors,
directly impact their PJDM and thus are considered at the end of this Section.

2.5.1. Types of Knowledge

2.5.1.1. Explicit and Tacit Knowledge. Explicit knowledge is knowledge
which can be easily expressed to others, typically forming a large part of outdoor instructors’
foundational knowledge. It is often acquired formally and consciously, for example, through
training courses. In contrast, tacit knowledge, is knowledge we do not know that we know,
and can be acquired implicitly; learning through experience, or by the transformation of
explicit knowledge which becomes tacit through practice and use over time (Schön, 1987).

Tacit knowledge and explicit knowledge are linked via a capacity to communicate and
articulate tacit knowledge thus becoming explicit, to ‘tell’ it to others (H. Collins, 2010).
However, experts often have difficulty articulating much of their tacit knowledge, potentially
adding to the view of expertise as a mysterious art form (Nash & Collins, 2006). The
difficulty in articulating tacit knowledge gives rise to the notion that it is unable to be taught
or developed intentionally, and also underpins the value placed on apparent intuition (D.
Collins, Collins, & Carson, 2016). Given that knowledge must originate somewhere, it
therefore must be possible to unlock this ‘mystery’ and utilise what is found to support the
development of others.

Tacit and explicit knowledge development are likely cyclical: knowledge was explicit
or had to be made explicit at some point before being made tacit again. Nonaka et al. (2000)
conceptualise this in a knowledge creation cycle: socialisation (acquiring tacit knowledge
through shared experiences), externalisation (articulating tacit knowledge to create explicit
knowledge), combination (combining numerous pieces of explicit knowledge to create new explicit knowledge), and internalisation (using explicit knowledge in practice to transform it into tacit knowledge). The process can then be enhanced through broader experiences and reflection, grounded in domain specific knowledge (Nash & Collins, 2006).

Experts are often said to draw on tacit knowledge (Kahneman & Klein, 2009) to make seemingly intuitive, or ‘gut feel’ decisions (McCammon, 2004). For example, an outdoor instructor may ‘know’ what type of leadership a group of young people require at different points in their expedition, but may struggle to explain their reasoning at the time, citing an intuitive decision. However, most can rationalise their DM post-hoc, even if this is some time afterwards. Consequently, this is not intuition, but deeply held tacit knowledge (D. Collins, Collins, & Carson, 2016). The application of PJDM in both traditional sports coaching and adventure sports coaching found intuitive-like decisions (e.g., decisions using tacit knowledge) were utilised predominantly in-action. These decisions usually focussed on short term goals, nested within the more deliberative framework of the long-term decisions (D. Collins, Collins, & Carson, 2016). For example, an outdoor instructor’s decision to use a democratic style of leadership is made intuitively, based on tacit understanding of the situation. This decision, however, sits within an explicit understanding of the need to develop the group’s confidence throughout the week, and within the organisation’s ethos of development.

2.5.1.2. **Declarative Knowledge**. PJDM draws on outdoor instructors’ knowledge bases, their understanding of the knowledge they hold, and how it interacts; an accumulation of facts or information about concepts or principles, or ‘knowing what’ (Alexander et al., 1991). For example, an outdoor instructor’s knowledge of a variety of learning models that can be used to help young people reflect on their adventurous experiences.
2.5.1.3. **Procedural Knowledge.** Procedural knowledge is the knowledge of processes or routines, or ‘knowing how’ (Anderson, 1983) and allows the outdoor instructor to understand how a process or procedure works. It can be developed through both experience and theoretical understanding of a process, for example, an outdoor instructor understanding the process of frontloading the intended learning for a group, reviewing it later and then transferring this learning to a new situation.

2.5.1.4. **Conditional Knowledge.** Conditional knowledge is the understanding of when and where declarative and procedural knowledge can be applied. For instance, an outdoor instructor being able to choose a learning model appropriate to the experience, adventure, group, and learning aims and using that to effectively review what the group has learnt. It is the application of knowledge appropriately *in context*; in short, knowing why it works, not just *what* works. Conditional knowledge based on a comprehensive understanding of declarative and procedural knowledge in context should allow the facilitation of development of this knowledge in other outdoor instructors. This conditionality, or ‘it depends’ approach is a hallmark of PJDM (D. Collins et al., 2022), the nature and use of knowledge within PJDM being underpinned by a pragmatic philosophy (Cruickshank & Collins, 2017).

Alexander et al. (1991) noted that, although the various types of knowledge come together to form an individual’s knowledge as a whole, they are distinct. Acquisition in one type of knowledge (such as declarative) does not guarantee acquisition in another (such as conditional). However, the way one type of knowledge is developed may influence the development of other types. For instance, a training programme that is full of routine and procedure, a congested curriculum typical of national governing body programmes, potentially produces outdoor instructors who can follow routine but lack the conditional knowledge to operationalise PJDM adaptively (Barry & Collins, 2021).
Conditional knowledge is highly relevant to operating in the hyperdynamic environment. Its very nature is conditional. In order to gain knowledge in their working environment, the outdoor instructor must assess, comprehend, understand, and predict the elements in the environment, and in their group. Thus, a situational comprehension is essential as a basis for outdoor instructors’ DM.

2.5.2. Situational Comprehension

Situational comprehension encompasses both situational awareness and situational demands to create a broader understanding of the conditionality in which PJDM sits. In the outdoor instructor setting, situational comprehension specifically requires an understanding of the learning environment and the physical environment. Therefore, a comprehension of the situation created by the combined situational awareness and situational demands is needed.

2.5.2.1. Situational Awareness. Though there are many definitions of situational awareness, it is generally agreed that it involves the comprehension of a dynamic situation and its effects in the short, mid and longer term (L. Collins et al., 2020). More specifically, Endsley (1997) describes situational awareness in three levels, perception, comprehension and projection:

1) The basic perception of information in context, without which there is a chance of basing judgements on an inaccurate conceptualisation of the situation.

2) Combining, interpreting, storing and integrating multiple pieces of information to comprehend the meaning in context.

3) Projecting that information to predict future events, their implications and cognitive demands.

SA informs the DM process, preceding decisions, but is equally part of a cyclical process whereby situational comprehension is, in turn, impacted by those decisions (Endsley, 2000). The link between the DM process and situational awareness has been widely
acknowledged (Adams et al., 1995; Endsley, 1997), and effective PJDM requires good situational awareness as the main precursor (Endsley, 2000). Indeed, with PJDM situated in context, it is vital that the outdoor instructor has a high level of situational awareness. To exemplify situational awareness, consider this vignette:

**Example Vignette**

An outdoor instructor is operating in an open water environment on an estuary on a windy day. They are aware of the strong south-westerly wind forecast and know that the tide will turn around lunch time so that instead of flooding upstream inland, it will be ebbing out towards the sea. The instructor notices that during the morning the effect of the wind on the water was slightly greater than forecast. They understand that the wind is strong enough to have an effect on the state of water and foresee that later in the day the wind will be gusting in the opposite direction to the tide. The instructor, therefore, predicts that the changing water conditions and stronger wind than forecast (wind and tide in opposition) are likely to produce larger, steeper waves, potentially larger than originally anticipated.

Meanwhile, it is approaching lunch time and the tide is starting to turn, so that the wind is no longer moving in the same direction as the water, meaning that the larger waves are beginning to form. The conditions are more challenging to paddle in and therefore the instructor needs to change their approach in order to avoid the group becoming separated, or capsizing. The conditions are also leading some of the group to become frightened, and some to become less balanced in their canoes. The instructor is aware that for the group to meet the learning outcomes and be in a psychological place to learn from the experience, they cannot remain overwhelmed (outside of their Zone of Proximal Development; Vygotsky, 1977) all day.
In this example, the perception, comprehension and prediction of the environmental elements are the basis on which decisions are made. Potentially in this scenario, the outdoor instructor may choose to get off the water at a different place or time to avoid being committed to paddling in conditions they feel they are unable to manage safely. They could equally consider a number of other options, such as, (1) raft the canoes together for stability and to avoid separation, (2) call on the radio for assistance from another outdoor instructor, (3) teach the group additional skills to manage the conditions, or (4) adapt their planned route to avoid exposing the group to the wind.

However, while good situational awareness supports sound PJDM, there are a variety of reasons that may cause an outdoor instructor to choose poor strategies or tactics. Firstly, the instructor may have good level one (perception) situational awareness, but poor situational awareness at levels two (comprehension) and three (projection). For example, they have an awareness of the forecasted weather and perception of the strength of the wind, but are unable comprehend the impact on the situation, and therefore predict the future impact. Secondly, the instructor may not have the requisite experience, training, or knowledge to create good plans (Endsley, 2000). An outdoor instructor may hold predominantly declarative and procedural knowledge. Where a process does not fit the context, they may be unable to create an appropriate option. Furthermore, the instructor may not actually recognise the need for an alternative option, may not feel confident in applying one which they have identified, or may not have the skills to adapt an existing option. Consequently, the outdoor instructor makes a decision inappropriate to the situation (a potential heuristic trap; McCammon, 2001). Limited experience could mean that the instructor has a restricted number of options to draw upon. For example, the instructor only knows of two options: to paddle in the conditions that prevail, or to stay in the shelter of the bay. Either of these options could be sub-optimal, perhaps because of group ability or other environmental factors such as tidal conditions.
However, if these two options are the only ones the instructor knows, then they must choose one of them.

Situational awareness can also be negatively impacted by other variables, such as the complexity of the environment, stress and workload, the limits of human attention (Endsley, 2012), preoccupation with minor problems, and failure to prioritise (Wiener, 1993) or, logistical and organisational constraints. For novices in particular, situational awareness is often explicit, effortful, incomplete, or incorrect as a result of high cognitive load (Uhlarik & Comerford, 2002) and associated attentional narrowing (Prinet et al., 2016). A potential result is compromised DM (Endsley, 2012). For experts, however, Endsley suggests situational awareness is effortless, involving greater ease of comprehension and projection, in turn decreasing the cognitive demands.

The skills associated with situational awareness, such as active looking and the need to seek key factors, are transferable to some degree. Webb et al. (2021) highlight the transferability of some aspects of seamanship between sailors and sea kayak instructors, and between white-water instructors and sea kayak instructors. However, situational awareness itself is highly contextual and not universal. The significance of the synergy between situational awareness and the conditional knowledge required by the decision maker cannot be undervalued. While the associated skills in the situational awareness process may be transferable, knowledge arising from situational awareness is conditional and context dependent. If accompanied by good reflective practice and metacognitive skills however, good situational awareness in one environment may support the development of situational awareness elsewhere.

2.5.2.2. **Situational Demands.** Situational demands accompany situational awareness and involve an understanding of contextual elements such as the demands of the
In the example given earlier, where situational awareness is the understanding of wind and tidal conditions, the situational demands are those created by these environmental conditions and the group demands. The outdoor instructor may perceive anxiety in some of the group, and understand that this will impact their ability, for example, to take on new information. The instructor projects the potential for this to become risky both psychologically and physically. Consequently, they could choose to raft the canoes together which might increase morale; however, this may then change the safety considerations, impact the facilitation of the learning aim (leadership), and the skills that can be taught. The change in conditions prompted a change in the group, demanding a change in approach, which therefore changed the situation, and thus created new demands, such as the group being colder (owing to the slower pace and less effortful paddling of the now rafted canoes).

Managing these situational demands requires a high level of metacognitive skills, but also increases cognitive load (de Jong, 2010) which in turn potentially narrows situational awareness. The practical success of a PJDM framework relies on situational comprehension (Abraham & Collins, 2011a).

2.5.2.3. **Situational Comprehension.** Outdoor instructors make decisions based on situational awareness and situational demands, and consequently both the situational awareness and situational demands are impacted by those decisions. As a result, the outdoor instructor must then re-assess the situation. In situational awareness, Endsley (2000) describes this cyclical nature, which may also apply to situational demands. For instance, in the vignette, a decision to tie the canoes together into rafts alters the situation, requiring a re-evaluation, as the safety implications have changed. The instructor potentially needs to change their approach to managing the safety (situational awareness) which would again
change the situation, impacting for example, the skills which can be taught by the instructor (situational demands). Once again, this modifies the circumstances, and the instructor may choose to change their journey route as a result (situational awareness). Thus, changes to situational awareness impact the situational demands, which requires adaptations that consequently impact the situational awareness, and so on. The situational comprehension is the continuous assessment, perception, comprehension and projection of the situational awareness and likely also the situational demands, their dynamic nature impacting the outdoor instructors PJDM. A deep understanding of contingent knowledge is essential for outdoor instructors to continually adapt and make decisions appropriate to the changing situation.

2.5.2.4. **Contextual Priors.** Prior expectations from the context, known as contextual priors, influence one’s prediction of others’ actions (Gredin et al., 2018), or intentions (Amoruso & Urgesi, 2016). Like heuristics, contextual priors are built on experience and comprehension of the situation; when incoming sensory information is consistent with these expectations, recognition is facilitated (Chambon et al., 2011).

Contextual priors influence DM both pre-action and in-action, supporting the decision maker to both take in and act on the dynamic environmental elements (R. Collins et al., 2022).

Within the outdoor instructor context, contextual priors may be environmental or kinematic. For example, in a mountain scrambling context, an outdoor instructor may have unconsciously learnt (Bianco et al., 2022) to recognise the movements which indicate someone is about to slip from their safe position, consequently influencing their DM.

Resultingly, they may choose to ‘spot’ the individual from a different position, or to protect them using a rope. Equally, the instructor may have developed contextual priors at a higher level. For example, in specific conditions, with a particular group, they may expect that they are likely to be left with option X or Y. Based on this previous contextual knowledge,
experience of the environment, group, and the interaction of these factors, outdoor
instructors’ contextual priors may allow them to plan ahead, therefore, potentially minimising
cognitive load. Like heuristics, however, experience which is narrow in breadth and depth is
likely to produce contextual priors which are less accurate.

2.5.3. Expertise in Outdoor Instructor Professional Judgement and Decision

Making

2.5.3.1. Adaptive Expertise. In order to make effective decisions based on a
continually changing environment, the associated situational awareness, and situational
demands, PJDM can be connected with AEx (Hatano & Inagaki, 1986). This enables the
outdoor instructor to accommodate the conditionality of DM in the hyperdynamic context
(situational comprehension), adaptability being a core feature of quality PJDM practitioners
(D. Collins et al., 2022). Hanson et al. (2005) define adaptability as “effective change in
response to an altered situation” (p.v) effectively linking adaptability to situational
awareness, essential to DM in these hyperdynamic situations.

According to Hatano and Inagaki (1986) AEx builds on routine expertise. However,
this may be a result of their work being situated in the relatively static environment of the
classroom. Jensen et al. (2022) argue that AEx is not simply an extension of routine expertise
(Hatano & Inagaki, 1986) but that when expertise is developed in conditions which
consistently require adaptability, AEx is developed without the prior need for a routine
expertise. AEx may be best considered on a spectrum. Jensen et al. state “adaptability
becomes fundamental to the cognitive expert who, by definition, must be able to perform at a
high level in environments where unpredictability and instability is a certainty” (p. 6). Whilst
this evidence originates in the motor control domain, given that outdoor instructors operating
in these hyperdynamic environments must be developing their expertise adaptably to achieve
success, it is plausible that this also applies to the current context. As such, outdoor instructor
AEx may not be reliant on the development of routine expertise first. In looking at AEx as a skill which develops from the beginning, there are implications for the way in which outdoor instructors are trained. Training programmes which teach for AEx from the beginning, rather than training for routine expertise as a building block to AEx, would look significantly different, and, may develop more adaptable and flexible outdoor instructors who do not need to unlearn routines and procedures. However, Jensen’s recent findings are within a small study, in a different research domain, and as yet unsupported by much of the wider AEx evidence. Therefore, further investigation into the application of this in the outdoor instructor domain is required.

Notwithstanding the arguments for, or against, hierarchy, both notions of expertise demand the capacity to perform standard tasks and routine functions without error. AEx has three components: domain-specific skills, metacognitive skills, and innovative skills (Crawford et al., 2005; Hatano & Inagaki, 1986). Domain-specific and metacognitive skills are aspects of both routine and adaptive expertise (Carbonell et al., 2016; Feltovich et al., 2012). However, metacognitive capacity may not be a measure of AEx in itself, rather an associated feature of both routine and AEx (Carbonell et al., 2016). AEx is therefore characterised by innovative skills, efficiency and flexibility in applying knowledge when approaching new situations and addressing challenges (Bransford et al., 2005; Hutton et al., 2017), supported by the domain specific and metacognitive skills. It is this flexible, creative, and innovative use of the competencies found in routine expertise that enables adaptability (Trotter et al., 2017).

AEx entails recognising situations (situational comprehension) in which a routine will not suffice; recognition, understanding, and prediction of the complexity and dynamism of the situation is essential. As such, outdoor instructors possessing AEx may build mental models of a given situation (Barnett & Koslowski, 2002; Chi, 2011; Gentner et al., 1997) and
would not rely purely on procedure or routine (Olsen & Rasmussen, 1989; Sonnentag et al., 2012). AEx involves a synergy of DM processes, hypothesis construction and evaluation, and solution finding (L. Collins et al., 2016; Crawford et al., 2005; Lin et al., 2005). Decisions then predominantly derive from a classical DM process pre- or post-action, but demonstrate dependence on naturalistic DM processes when in-action. Under time constraints or situations involving incomplete information, DM appears to draw on experience and metacognitive and reflective skills.

AEx skills are underpinned by individual dispositions: comprehension of the interaction between different components in routine processes (e.g., the ability to tie different climbing knots and their advantages and disadvantages in varied situations) and an epistemology that acknowledges and values new knowledge (Christian et al., 2017; L. Collins et al., 2014). Pulakos et al. (2000) describe eight dimensions of adaptive performance, skills relevant to particular roles and contexts, all of which appear directly relevant to the outdoor instructor domain:

1. Handling emergencies and crisis situations
2. Handling work stress
3. Solving problems creatively
4. Dealing with uncertain and unpredictable situations
5. Learning new tasks and procedures
6. Demonstrating interpersonal adaptability
7. Demonstrating cultural adaptability
8. Demonstrating physical adaptability

Logically, environments that require adaptation and flexibility, as highlighted earlier, should require adaptive experts, supporting Jensen et al.’s (2022) position that AEx may be developed from the outset.
Individuals with AEx demonstrate a capacity to self-assess their expertise, knowledge, learning, and problem-solving ability (E. Bell et al., 2012; Crawford et al., 2005). They also possess high levels of cognitive flexibility, deep thinking skills, and metacognitive abilities (Barnett & Koslowski, 2002; B. Bell & Kozlowski, 2008; Reder & Schunn, 1993; Stokes et al., 2010). These skills enable individuals to view situations from different perspectives and create analogies with their experiences. Thus, they are able to make knowledge and skills transferable and transportable to new contexts. Further to this, AEx may entail viewing components as interchangeable loose parts (S. Nicholson, 1971) or functional units (Alexander & Judy, 1988). These parts being reassembled differently to deal with novel situations, contrasting with a proceduralised approach. The interchangeable nature of the component parts allowing the innovation and creation of new responses. It may be that these loose parts are learnt as interchangeable, through being created within the contingent nature of the hyperdynamic environment.

### 2.5.3.2. Metacognition

Key to developing deep understanding, and thus to effective PJDM, is metacognition: the knowledge about, and control over, one’s cognitive processes (Veenman et al., 2006). Metacognition raises awareness of tacit and conditional knowledge, and therefore supports the outdoor instructor’s ability to reflect in-action, on-action, and on-action-in-context. This active cognitive processing is essential to deep learning (Claxton & Lucas, 2007) and enables AEx, and thus contributes to the outdoor instructor’s ability to organise, access, and operationalise their knowledge (L. Collins, Carson, & Collins, 2016). Consequently, the outdoor instructor’s skill in considering alternative options is enhanced (Cruickshank, 2013). While experience, training, and reflection are important in developing PJDM, Abraham et al. (2009) suggest it is in fact epistemology and metacognitive skills which underpins this development.
2.5.4. Individual Factors

2.5.4.1. Attentional Control and Working Memory. An individual’s cognitive capacity is an essential aspect of their ability to make decisions. Working memory capacity is limited, and therefore exceeding this can lead to cognitive overload, which in turn inhibits DM and learning (Sweller, 2010). Working memory has four aspects, (1) the central executive, responsible for attentional control, (2) the phonological loop, responsible for audio information processing, (3) the visuo-spatial sketchpad, responsible for visual and kinaesthetic information processing, and (4) the episodic, buffer responsible for temporarily storing and integrating information and prior knowledge (Baddeley, 2000). The central executive controls not only attention, but also processing relating to maintaining task goals, memory retrieval and DM (McCabe et al., 2010).

Corbetta and Shulman (2002) note two systems for regulating attention: (1) goal-directed attentional system, and (2) stimulus-driven attentional system. Goal-directed attention is focussed on expectations, knowledge, and current goals (often described as top-down), whereas stimulus-driven system is sensitive to salient or conspicuous stimuli (described as bottom-up). Attentional control theory (Eysenck et al., 2007) is founded on this assumption. In normal situations, working memory maintains a balance between these two systems, however, attentional control theory proposes that anxiety impairs attentional control, leading to performance shortfalls in tasks which rely on working memory. Anxiety disrupts the balance, increased anxiety leading to an increase in stimulus-driven attention focus, and a decrease in goal-directed attention focus (Eysenck et al., 2007). This imbalance occupies a greater proportion of the working memory, and therefore creates the potential for cognitive overload, in turn decreasing the capacity to adapt and make decisions in-action.

Additionally, high cognitive load exacerbates the adverse effects of anxiety on attentional focus. Individuals with a low working memory capacity (i.e., high cognitive load)
may be more susceptible to distracting stimuli (i.e., stimuli not directly relevant to the
situation or decision) than those with high working memory capacity (low cognitive load)
(Barrett et al., 2004). For example, an outdoor instructor who is feeling stressed by a first-aid
situation may find their attention focussed on details of the casualty’s condition, occupying
much of their working memory capacity, and thus creating a high cognitive load. This may
then restrict the instructor’s ability to re-focus on goal-driven aspects of their work, for
example, the wellbeing of the rest of the group.

2.5.4.2. Self-efficacy. Personal efficacy relates to the beliefs one holds about
their ability to execute a particular behaviour in order to produce a specific outcome. Self-
efficacy theory (Bandura, 1977) proposes that when faced with obstacles or adverse
experiences, this personal efficacy determines the level of effort which will be expended,
how long it will be sustained for, and whether coping behaviours will be initiated. As a result,
individuals with high self-efficacy tend to exhibit greater situational adaptability, and are
more confident in their intuitive DM. Equally, while individuals with low self-efficacy may
be able to identify workable options, they may choose not to implement these (Leslie et al.,
2010). For example, consider a low self-efficacy outdoor instructor taking a group on a
mountain expedition. They may identify the need to adapt their planned route due to
changing weather conditions or group needs, however, feel they do not have the ability to
effect the change to their initial plan. In essence, the beliefs one holds in their ability to do the
right thing at the right time can be viewed as a coping strategy for handling decisions,
particularly under pressured environments (Tenenbaum, 2004). While there is little specific
research into the self-efficacy of outdoor instructors (cf. Schumann & Sibthorp, 2016), given
the complex environments in which outdoor instructors operate, it is logical that self-efficacy,
alongside other individual personally traits, influences DM in this context.
2.5.4.3. **Stress and Coping.** The transactional stress and coping model suggests a two stage situational appraisal (Lazarus & Folkman, 1984). A primary appraisal assesses if the situation is either benign, and thus requires no action to facilitate a positive outcome, or stressful, and thus requires action. A secondary appraisal then identifies the stressful situation as either ‘challenging’ or ‘threatening’. Challenging situations are considered by the individual as something which they have the resources, knowledge, and skills to cope with, and therefore offer the potential for growth, mastery, or gain. However, threatening situations are viewed by the individual as something which they do not have the resources to cope with, and are therefore considered as a situation with the potential for harm or loss. This secondary appraisal depends on personal characteristics (Lazarus & Folkman, 1984) such as, motivation, beliefs about oneself (self-efficacy), beliefs about the world (epistemology) problem solving skills, available resources, and social support. For example, receiving constructive feedback from a peer may be stressful (posing a threat to reputation or self-image), but, if the outdoor instructor feels they have the support of their peers, and the ability to action the feedback (self-efficacy), this may be viewed as a challenge rather than a threat.

The consensus is that the greater an individual’s self-efficacy, the lower the chance of feeling stress (e.g., Karademas & Kalantzi-Azizi, 2004; Mo et al., 2021; Shahrour & Dardas, 2020; Zajacova et al., 2005). The connection likely a result of an ‘opportunity’ view of, and willingness to face, difficulties, therefore feeling less stressed, contributing to the favourable view of a challenge; a repeated positive feedback loop. Additionally, high self-efficacy increases one’s sense of being in control of a situation, a stress coping strategy (Bandura, 1977). The view of a stressful situation as a ‘challenge’ rather than a ‘threat’ aligns closely with a Hahnian philosophy (the potential for growth from difficulty), however, requires a level of self-efficacy.
2.5.4.4. **Epistemological Chain.** The epistemological chain is ‘the interrelated/connected decisions made that are derived from high-level personal beliefs about knowledge and learning’ (Grecic & Collins, 2013, p. 153). In essence, the epistemological chain links the outdoor instructor’s philosophies, beliefs, and behaviours. Thus, establishing a framework which guides the DM process, providing criteria for planning, critical analysis, and reflection to be evaluated against, rather than on an ad-hoc, intuitive basis (Grecic & Collins, 2013). The outdoor instructor’s decisions, actions and goals are linked with their epistemological and ontological views, and, driven by the environment and the technical need for development (Barry et al., 2023). For example, consider an outdoor instructor with a sophisticated epistemology and constructivist ontology who is leading a rock scrambling session, with the aim of developing trust and encouraging support among the group. This instructor might think ‘I know that there are specific routes which are challenging, and that there is a technical template for me to keep the group safe while scrambling. But, I know this might not be appropriate in every situation. Today, I may need to adapt my approach and choose a less consequential challenge where the group can keep each other safe, enabling success for all the individuals in the group, and to meet the aims of the session’. The instructor is likely to, consciously or unconsciously, integrate their epistemological stance and take a learner-centred approach. They may use tools such as questioning e.g., ‘how does it feel when you support someone to succeed?’, ‘are you able to achieve this in another way?’, ‘how could you adapt this in X, Y, or Z situation?’ to encourage self-analysis, reflection, transfer of learning, and ultimately create independent learners (Eastabrook et al., 2022). Becoming conscious of one’s epistemological chain will support the development of good DM; without a clear understanding of one’s own philosophy of what ‘good’ instruction looks like, it is impossible to reflect on if one’s DM is ‘good’ (Crowther et al., 2018).
2.6. Developing Professional Judgement and Decision Making

As Abraham et al. (2009) point out “we only know what we know, our decision making is constrained by personal theory which in turn is built on our personal ‘repertoire’ of experience” (p. 10). In order to develop expert outdoor instructors, we need to consider what expert outdoor instructor development looks like, and, in the case of this thesis, what the development of PJDM in OBIs may demand. This Section, therefore, considers the status quo regarding outdoor instructor development relating to aspects of PJDM to lay the foundations for the research presented later.

2.6.1. Approaches to Outdoor Instructor Development

In pursuing expert PJDM, effective education must be a priority. Experiential learning theory indicates that PJDM is developed by reflection on experience (Klein, 2015), and Kolb’s (1984) model of experiential learning is now a universal model both for, and within, the outdoor domain. The prevalence highlights the involvement of the environment, action, the senses, emotions, cognitions and the application of new knowledge in experiential learning (Beard, 2016). However, while many teaching and learning professionals identify development through a trial and error approach (Bloom et al., 2003), there are flaws in an exclusively experiential learning process. Additionally, there is little understanding surrounding the specifics of this process among outdoor instructors (Enoksen & Lynch, 2018). Solely experiential learning is not framed within theoretical or empirical standards, therefore instructors who develop entirely in this way may lack the ability to challenge their understanding, and potentially become stuck in a closed loop of their own experience (Martindale & Collins, 2007). This circular thinking could leave the outdoor instructor lacking the criticality required to select the appropriate tool for the job. It may also contribute to a misbelief of the existence of a single perfect solution that meets all coaching needs (D.
Collins et al., 2022), the antithesis of PJDM. Thus, for effective PJDM development, the approach must be purposeful and considered.

2.6.1.1. **Ontology, Epistemology, Phronesis.** An individual’s beliefs about learning and teaching, and therefore, outdoor instruction are influenced by both ontological views (nature of reality, fact and truth; Guba and Lincoln, 2005) and epistemological views (the nature of knowledge; Grecic and Collins, 2013) (Olafson et al., 2010). Phronesis is a practical wisdom developed through in-action reflection, using knowledge, critical thinking and testing ideas in practice (Higgs, 2012). Given the nature of tacit knowledge, individuals may not always be aware of how or why these philosophies impact their DM (Strean et al., 1997). For instance, an outdoor instructor who views the world and knowledge as stable and sees ability as fixed is likely to follow procedure, operating within known environmental and pedagogical parameters. This instructor might, therefore, choose to utilise more predictable and less dynamic environments, keep tighter control over the group safety, and allocate roles that match the individual’s current strengths (such as offering leadership opportunities to those who already show leadership). Alternatively, an outdoor instructor who views reality as dependent on the individual, and sees knowledge as dynamic and flexible, is likely to operate within an AEx approach much more readily. The instructor might choose to seek out environments which challenge the group and provide ‘real adventure’, that is, an unknown outcome. The instructor will need to adapt their delivery in-action, rather than planning for the unknown. They may choose to encourage and develop different strengths within the group, scaffolding the challenge appropriate to the individual.

In both these examples the outdoor instructor may operate, unaware of their underlying philosophies. Their views can be held both implicitly and explicitly, and as such may be held as deep-seated beliefs, directly impacting their creation, acquisition and application of knowledge. The cognitive nature of PJDM necessitates that these beliefs will
influence all judgements and decisions (L. Collins et al., 2014); the epistemological chain (Grecic & Collins, 2013).

Phronesis enables the outdoor instructor to choose appropriate options in a particular context, for good reason (Fenichel & Eggbeer, 1990). The context and knowledge are connected in a manifestation of metacognition. This metaprocess provides the individual with the capacity for deliberation, judgement, and practical action (L. Collins & Collins, 2019b), with the process of cognition and practice informing each other, and further reflecting the epistemological chain.

2.6.2. Developing Metacognition

There is currently limited evidence on how metacognitive skills can be encouraged and developed in outdoor instructors. Instead, examples from other professions such as education may provide initial guidance. For instance, problem-based learning takes a student-centred approach to metacognitive development. Using difficult, novel or challenging tasks, tasks with multiple solutions (Bolton, 2010), and realistic problematic scenarios as a catalyst it utilises and develops the metacognitive process (Downing et al., 2009). Another suggestion is a cognitive apprenticeship (CA; A. Collins et al., 1980, 1991) which provides the learner with opportunities to experience an expert’s process of thinking.

2.6.3. Cognitive Apprenticeship.

The notion of apprenticeship has been influential in teaching and learning throughout history (Lave & Wenger, 1991). Apprenticeship is an approach to development that is highly situated, frequently in the apprentice’s workplace under the tutelage of an expert. Many outdoor instructors will have begun their career through some form of practical apprenticeship, learning key practical skills such as setting up climbing ropes, or paddling canoes. CA extends practical apprenticeships. It applies situated learning to the cognitive skills associated with processes, aspects which are not typically ‘visible’, in this case PJDM.
While CA was initially developed to support the learning of skills such as reading, writing, and mathematics in the classroom (A. Collins et al., 1980), there has been a growing interest in the use of a CA approach for adult development in the workplace. For instance, in medicine (Stalmeijer et al., 2009; Woolley & Jarvis, 2007), the military (Swaim, 2017), and tourism and hospitality (Ahmad et al., 2018). More recently, CA as a means of developing judgement and DM has been considered in strength and conditioning coaching (Downes & Collins, 2023) and notably, in novice outdoor instructors by Barry and Collins (2021).

In the pursuit of expertise development (A. Collins, 2005) CA employs four elements within in a zone of proximal development:

1. **Content**: the types of knowledge required for expertise (domain knowledge, metacognitive strategies)
2. **Methods**: ways in which the development of expertise can be facilitated (modelling, coaching, scaffolding, articulation, reflection, exploration, see Table 2.3)
3. **Sequencing**: the ordering of activities to promote development
4. **Sociology**: the social characteristics of the learning environment.
<table>
<thead>
<tr>
<th>Teaching ‘method’</th>
<th>Description</th>
<th>Outward Bound Trust example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modelling</strong></td>
<td>A demonstration of skills, usually by an expert, to enable the learner to develop a mental model of the skill. Often including verbalising the cognitive processes.</td>
<td>Demonstrating the delivery of a review, pausing to share their reasoning behind their DM throughout.</td>
</tr>
<tr>
<td><strong>Coaching</strong></td>
<td>Observing the learner and offering challenges, support, and feedback.</td>
<td>Observing and providing feedback on an OBI’s DM around route choice on a mountain scramble.</td>
</tr>
<tr>
<td><strong>Scaffolding</strong></td>
<td>Putting supports in place to enable the learner to carry out the task in their zone of proximal development. Scaffolding must be highly personalised, and if done poorly can have a negative impact on the learner emotionally (Bean &amp; Stevens, 2002).</td>
<td>A Learning and Adventure Manager joining an OBI on a canoe session in conditions which are at the edge of their ability, providing additional safety support (reducing the cognitive load) and acting as a sounding board to discuss decisions before acting.</td>
</tr>
<tr>
<td><strong>Articulation</strong></td>
<td>The learner separates, verbalises and demonstrates their understanding of the component knowledge, reasoning and thinking processes in a domain.</td>
<td>Using the Big 5 (D. Collins &amp; Collins, 2020) to ask an OBI about their DM and choice of strategy to navigate their group safely through a moving water rapid.</td>
</tr>
<tr>
<td><strong>Reflection</strong></td>
<td>Learners compare their own thought processes and problem solving with that of others, particularly that of an expert.</td>
<td>Reviewing a critical experience with a Learning and Adventure Manager, the OBI compares their DM to that of a senior OBI in a similar situation.</td>
</tr>
<tr>
<td><strong>Exploration</strong></td>
<td>Giving learners time and space to problem solve on their own, akin to a problem-based learning approach, fading supports, and self-setting of goals.</td>
<td>OBI self-identifies a goal to increase the quality of their delivery on expedition. They decide to find and test a variety of strategies to allow them to hand over autonomy to their group whilst on expedition, in varied weather conditions.</td>
</tr>
</tbody>
</table>
The initial three ‘methods’ (modelling, coaching, and scaffolding) align with the tools used through a traditional apprenticeship. However, the second three (articulation, reflection, and exploration) are used with the intention of developing mental models and metacognitive skills, rather than a focus on physical skills (A. Collins, 2005).

2.6.4. Developing adaptive expertise

Outdoor instructor adaptability appears to require activity-specific knowledge appropriate to the environment, knowledge of pedagogy, the participant’s needs, and their own epistemological views (Abraham et al., 2009). Thus, the development of conditional knowledge (Nash & Collins, 2006) in these knowledge domains should assist outdoor instructors in developing an adaptive, PJDM approach. This ‘it depends’ approach and the associated need for flexible and dynamic outdoor instructors (AEx) will therefore be explored in greater depth in Chapter 4.

2.6.4.1. Situational Comprehension. Advancing reflection and metacognition is critical as the foundations of developing situational comprehension (L. Collins et al., 2020). This focus would also likely encourage continued development post-training, essential given the current approach to national governing body training and assessment which advocates a logged ‘consolidation period’ between training and assessment. There are, however, some criticisms of situated learning. Situated learning requires an initial level of experience before the learner is able to operate in the environment, contextualise the learning, or utilise it in the future, leaving questions over the suitability of this approach for neophyte outdoor instructors (Aadland et al., 2017; L. Collins & Collins, 2022).

2.7. Resulting Questions and Next Steps

Previously, literature in the outdoor domain, as a profession, has been lacking. Initially, literature highlighted similar themes in outdoor instructor development, such as experience, practice, variety, reflection, naturalistic DM approaches, and situational awareness (e.g.,
Cain, 1988; Galloway, 2002; Martin et al., 2006). However, while valuable in contextualising an otherwise unresearched domain, these findings lack detail beyond merely identifying that these elements were useful. There was little discussion of the conditionality surrounding when, where, and why these elements were important. As such, practical implications for outdoor instructors’ development have been scarce. The lack of inquiry and analysis was potentially encouraged by the traditional view of the outdoor domain as a pastime, not a profession (cf. Taylor & Garrat, 2010).

In recent years, attention has been paid increasingly to adventure sports coaches (e.g., Christian et al., 2020; L. Collins & Collins, 2015b, 2020; Eastabrook & Collins, 2021) and DM expertise, PJDM in particular, certainly now has established importance in sports coaching. However, the translation of this into education and development of outdoor instructors has “yet to be given its deserved prominence” (Lyle & Muir, 2020, p. 153).

Personal development outdoor instruction contributes to large portion of professional outdoor work in the UK (see Institute for Outdoor Learning, 2023), arguably many more outdoor instructors operate in this domain than as expert adventure sports coaches operating in the performance development domain (e.g., L. Collins & Collins, 2012). Thus, further research into outdoor instructors’ PJDM, and its development is needed.

This thesis takes a pragmatic approach to the exploration of (1) To understand how the Outward Bound Trust’s instructors make judgements and decisions, and (2) identify how these judgement and decision making processes may be best developed by the Outward Bound Trust, by asking the following:

- **Chapter 4:** Is AEx a characteristic of outdoor instructors, as Tozer et al. (2007) hypothesised? And if so, what are the characteristics of this expertise in OBIs?

- **Chapter 5:** What are the key components of early-career OBIs’ PJDM in the field? And how have they developed these PJDM skills?
Chapter 6: What are the key components of mid-career OBIs’ PJDM in the field? And how have they developed these PJDM skills?

Chapter 7: What can the similarities and differences between early and mid-career OBIs tell us about the development of PJDM in OBIs? What approaches could be used to facilitate the development of OBIs’ PJDM?

Chapter 8: Does OBT’s current approach to instructor induction and development approach use a CA framework? How can the current approach be enhanced to optimise OBI development?

As with much of the existing research, the studies presented in the following Chapters took a self-reporting and retrospective approach, using both mixed and single methods, and predominantly a reflexive thematic method of analysis (Braun & Clarke, 2022b). In the next Chapter, I will discuss the research philosophy behind the empirical studies presented in Chapters 4, 5, 6 and 8.
3. Methodology

In the previous Chapter, I considered the context of outdoor instructors’ DM, and reflected upon the existing literature and the possible development of PJDM in outdoor instructors. The questions arising formed the basis of the empirical research presented in Chapters 4, 5, 6, and 8. This Chapter considers the philosophies and philosophical assumptions that underpin the research in these Chapters. In turn, the philosophical foundations enable the methodology and research design to be outlined, in line with the recommendations of Denzin and Lincoln (2008).

3.1. Research Philosophy

Researchers make different assumptions about the nature of truth, knowledge and its acquisition; research stems from, and is guided by these assumptions (Kawulich, 2016). A researcher’s philosophy may be considered as having four parts, forming a ‘chain’ of reasoning through the research: Ontology, Epistemology, Axiology, and Methodology (Kivunja & Kuyini, 2017).

3.1.1. Ontology

Ontology relates to the nature of reality, and in simple terms, whether reality is viewed as contextually dependent (subjective) or may be considered as independent (objective) (Coghlan & Brydon-Miller, 2014b). Ontological assumptions, therefore, represent the nature of knowledge, its limitations (BonJour, 2009) and, by extension, the nature of learning (Coghlan & Brydon-Miller, 2014b).

3.1.2. Epistemology

The researcher’s ontological stance extends to encompass their epistemological position and asks questions such as what is knowledge? How does someone know what they know? And how is that knowledge acquired? (Crotty, 2005). Epistemology describes three standpoints:
(1) Objectivism, which views knowledge and truth as existing independent of human input, separating the knower and the known. (2) Constructionism, which views knowledge as being understood through interaction and engagement with the object, meaning an acceptance of some truths which may be independent of the human, but that the most important meanings are created by interaction. And (3) Subjectivism, which views meaning as entirely a result of human creation (Coghlan & Brydon-Miller, 2014a).

3.1.3. Axiology

Building on the researcher’s ontological and epistemological positions, axiology considers the values and morals that guide research decisions (Finnis, 2011). Kivunja and Kuyini, (2017) discuss four axiological criteria: (1) teleology – what is intrinsically good or desirable, for example, will the research result in meaningful outcomes?; (2) deontology – the concept that every action has a consequence, for example, do these actions benefit participants, the researcher, or the wider community?; (3) morality – the intrinsic moral values that should be upheld in research, for example, that the researcher will be honest in reporting their findings; and; (4) fairness, ensuring that participants are treated fairly and their rights are upheld.

3.1.4. Methodology

Key methodological choices stem from quantitative, qualitative or mixed methods approaches, each with its own set of underpinning philosophies – the aforementioned ‘chain’ of reasoning. Methodology concerns the research design, methods, approaches, and procedures used in an investigation (Keeves, 1997). In making methodological choices, consideration should be given to how data can be best gathered to develop knowledge and understanding, in order to answer the research question (Kivunja & Kuyini, 2017). Although the researcher’s philosophical underpinnings will influence the research question being asked and the view of the best way to approach it, methodological choices may well be more pragmatic in nature.
3.2. Research Paradigm

Together, these elements; ontology, epistemology, axiology, and methodology inform the research paradigm (Lincoln & Guba, 2005) – a collection of shared beliefs and consensus among a community of researchers, illustrating a researcher’s philosophical orientation (Morgan, 2014). The paradigm informs decisions about how the research problem may be viewed, how the research process may be undertaken, and how meaning may be attributed to the data (Kivunja & Kuyini, 2017).

Consequently, there are many proposed research paradigms. Candy (1989) suggests that these can be grouped as: Positivist (and post-positivist), Interpretivist (constructivist), or Transformative (critical). A fourth, however, is the pragmatic paradigm (Peirce, 1931; Tashakkori & Teddlie, 2008), combining elements of positivist, interpretivist, and transformative paradigms. Each of the four paradigms brings together specific philosophical views into an approach which, in turn, should guide the researcher throughout their research decisions and actions.

3.2.1. Positivist Paradigm

The positivist paradigm is based on the ontological assumption that reality is objective, existing independently of human input or interaction (Coghlan & Brydon-Miller, 2014b), and the epistemological stance, that knowledge and truth are also existent irrespective of human interaction. Thus, positivist paradigms consider that the world can be studied and measured objectively by the researcher, and that their own personal attitudes and beliefs are not relevant to data collection or analysis (Easterby-Smith et al., 2008). Post-positivism derives from this positivist paradigm and relaxes some of the stringent positivist rules. Post-positivism acknowledges that, while reality exists to be studied, some elements are context dependent and may never be fully understood (Guba, 1990) – a critical realism which applies, in particular, to studying human behaviour. Generally, within this paradigm, researchers are
concerned with removing their own biases, personality, and beliefs, to prevent their influence on data or analysis (Kivunja & Kuyini, 2017). This paradigm is generally associated with methodologies such as observations, experiments and the collection of statistical data.

3.2.2. Constructivist Paradigm

The constructivist paradigm is based on a set of subjectivist epistemological assumptions. The researcher makes meaning of the data through their interactions with it and the participants (Chalmers et al., 2009). Constructivism accepts that the researcher's own experiences will impact their construction of knowledge, though their axiological position requires a balanced presentation of the findings. There is an acceptance that multiple realities exist and are dependent on the perceiver. Constructivist paradigms approach research in the context that these realities are best explored through human interactions (Chalmers et al., 2009). The methodologies generally applied in this paradigm are considered naturalist (Kivunja & Kuyini, 2017), such as interviews, discourses and reflective sessions where the researcher is a participant observer.

3.2.3. Transformative Paradigm

The transformative (critical) paradigm considers research through the lens of social justice issues. Ontologically, the transformative paradigm adopts a viewpoint between constructivist and postpositivist. This represents a historic realism view; that there may be a reality but that this is shaped over time by social, political, cultural, economic, ethnic, and gender values (Lincoln & Guba, 2005). Accordingly, the basis for differing perspectives on this reality is situated within the political and cultural value system (Mertens, 1999). Within this transformative paradigm, epistemology is subjective. Thus, knowledge is created through interaction with those involved in the research so that a fair viewpoint is created, alongside an axiology that prioritises respect for cultural norms (Kivunja & Kuyini, 2017). The transformative paradigm acknowledges that some individuals or groups are more likely to be
excluded from decisions within inquiry (Mertens, 2007). Consequently, methodological decisions (which may take qualitative, quantitative or mixed approaches) are made in partnership with the community that is most impacted by the research.

**3.2.4. Pragmatic Paradigm**

The pragmatic paradigm offers an alternative, suggesting that constructivist and post-positivist approaches are anchored at two ends of a continuum consisting of objectivity and subjectivity (Betzner, 2008). Rather than dismissing the work and opportunities of the other, based on incompatible assumptions, pragmatism seeks out points of connection (Morgan, 2014). The word pragmatic is derived from the Greek ‘pragma’ meaning action. Thus, instead of beginning with a decision about which version of truth or reality is superior (Giacobbi et al., 2005), the choice of methodology in pragmatism depends on practical concerns, the research question being asked, and the implications of the inquiry. Pragmatism recognises that all inquiry is social in nature, as life itself is inherently contextual, emotional and social. Indeed, Dewey (1922, 2008) highlights that from infancy, all our experiences are shaped by others: all beliefs and actions are therefore, social in nature. Despite this apparent constructionist leaning, pragmatism promotes a joining of beliefs and actions (Morgan, 2014), taking an approach by which it is possible to take different views dependent on the situation and the problem to be solved. Beginning with the end in mind, pragmatism promotes choosing methods and techniques which best meet the needs and purposes of the inquiry (Creswell, 2017) in order to have a practical outcome.

**3.3. Ontological and Epistemological Assumptions, and my Research Philosophy: a Pragmatic Research Approach**

**3.3.1. Researcher Philosophy**

My experiences in the world have shaped me personally, professionally, and as a researcher. Reflecting on my developmental experiences I arrived at the belief that effective research
creates actionable knowledge, which in this case, supports the development of OBIs. In short, that findings can be applied to move forward and professionalise OBI practices within OBT. This desire for useful outcomes and practical knowledge, which can be actioned to enhance OBIs’ development, was the basis for this thesis. In particular, to understand how OBIs make judgements and decisions, and to identify how these judgement and decisions may be best developed by OBT.

In my experience, people and experiences rarely fit neatly into defined boxes. For this reason, and others which I will outline accordingly, I identify my research philosophy as pragmatic in nature. Reflecting on this approach, I offer some personal background to contextualise my research decisions (Braun & Clarke, 2019).

3.3.2. Researcher Background and Context

This thesis predominantly focusses on enhancing and facilitating practical development. At this point it is relevant to consider my own development. Throughout my education, I was average at almost everything; a ‘grey’ child, if you will. I was never considered ‘gifted and talented’, I did not win academic or sporting awards, but equally I did not struggle and was not disruptive. I worked hard to keep up, wanted to do well, participated in everything, and did as I was told. On reflection, a large part of this compliance was likely rooted in the fact that I never questioned what I was told to be truth or fact, and consequently, willingly accepted imparted knowledge. This made for an identity as a ‘good’ student within the school system, but a poor critical thinker.

I have always enjoyed spending time outdoors and participated in the opportunities available to me such as the Duke of Edinburgh awards. As a teenager, my sporting interests became a part of my identity, favouring surf and skate brands, rather than high street fashion. Towards the end of school, I joined a canoe racing club but, although offered an opportunity to train competitively, I was afraid to sign up without my friends. My outdoor interests
eventually led me to enrol on a BA (Hons) in Outdoor Leadership, ultimately securing a first-class award.

This time at university was instrumental in my development, offering the opportunity to be myself and build confidence. Being exposed to a wider variety of people, ideas, and challenges, my cognition began to shift. I began to participate more fully in, and learn through, the outdoors. I enjoyed the challenge it presented, the opportunities to try hard and, on occasion, to exceed my own expectations, without the constraints of the competitive framework of more traditional sports. In turn this fostered a deep appreciation for the way that individuals can build relationships, learning about people through adventure. I took opportunities to immerse myself in all types of outdoor environments and activities, including winter mountaineering, white water kayaking, canoeing, rock climbing and scrambling. These experiences and environments shaped my views of the world as being complex and dynamic.

Following my undergraduate degree I took a trainee role at Plas y Brenin, the National Mountain Centre. Here I worked hard to gain my initial qualifications and develop practical skills. I capitalised on opportunities to observe, listen, and participate alongside some of the most experienced and qualified outdoor instructors in the UK, this further shaping and forming my view of the world. The qualifications and experience I gained allowed me to work independently in the outdoors, initially freelance, before taking a full-time instructor role with OBT. Here, I was able to ‘live’ the theory I had learnt, thus refining my practice as an outdoor instructor. The OBT ethos became increasingly impactful, as I saw the values embodied in reality each week, I became increasingly invested. Owing to this values match, and a passion for the work, I returned to OBT (despite living almost 2 hour’s drive away) after a year working as a graduate assistant in the adventure education department at the University of Central Lancashire, where I began my research career. Here, I
worked alongside a small adventure education team, where my outlook and approach to
development continued to develop and refine, as did my ability to think critically. My view of
the world continued to develop as complex and nuanced, leading me to more often ask
‘why?’

My participation and my work in the outdoors has been driven by a developmental
focus from the outset, combining personal progression and challenge, with the enjoyment of
teaching and supporting the development of others. This has been the cornerstone of every
career decision I have made over the past 10 years. It is the reason that I have spent the last 6
researching how to facilitate the effective development of outdoor instructor DM. Throughout
my development as a researcher, I have worked full time as an OBI, progressing to a role in
which I am responsible for the development of other OBIs. Though challenging, it was
important to me that I remain ‘on the ground’, surrounded by and engaged in the realities of
this work throughout the research. Needless to say, this orientation is why my research must
have a practical impact. My desire to contribute to, and develop practice through research,
and create findings directly relevant to the practitioner, is paramount to my motivation.

My worldview has been influenced by what I believe to be morally right and thus, my
development has also been enhanced by feminist values such as equity, equality, diversity
and inclusion. However, a utopia in which equality is widespread, is not the world in which
we live. I believe, therefore, that an equity approach is needed as a means towards eventual
equality. Equity recognises that individuals have differing circumstances and offers the
specific support and resources needed for all to reach an equal outcome. Combined with my
outdoor experiences, this celebration of individual differences has led me to be more open-
minded by means of critical thinking. Seeking first to understand the context and reality of
each individual, rather than viewing theirs through my own experiences. In line with this, I
firmly believe that, despite the human desire to do so, people and phenomena rarely fit neatly
into categories – the ‘boxes’ I highlighted earlier. Appreciating all the ways in which people
differ and have differing experiences of the world (aspects of a transformative paradigm in
this sense), I am encouraged to seek out the most appropriate approaches to explore a
problem, supporting my pragmatic philosophy. Although labels and language are helpful in
communicating understanding, and the distinctions between opposing elements are useful
(e.g., objective vs. subjective), I support a nuanced rather than an absolutist approach. Indeed,
my working context requires a continuous application of pragmatism, the answer to every
question when working in the outdoors is ‘it depends’!

Reflecting upon my beliefs and values, a pragmatic approach is an excellent fit. As a
pragmatist, I am comfortable with the notion of moving along these ontological,
epistemological, axiological and methodological continuums, in order to ensure that the tools
used in research are appropriate to the desired end goal: useful, practical findings which are
transferable to the real-world. A critical explanation of a pragmatic approach follows,
including further considerations taken in choosing this approach in this work.

3.3.3. Pragmatic Approach

This thesis aimed to generate practically meaningful knowledge (Giacobbi et al., 2005) to
understand how OBIs make judgements and decisions, and to identify how these judgement
and decision making processes may be best developed by OBT. Given the context described,
the research aim and objectives outlined in Chapter 2, and my position highlighted above, a
pragmatic approach remained the most appropriate choice.

Pragmatism encourages beliefs to be held lightly, recognising the inherent ambiguity in
a complex world (C. Nicholson, 2013), and is not committed to a single philosophy
(Creswell, 2017). Although I accept that some things are objectively true, for example, two
plus three equals five, to discount an entire worldview in favour of one exclusively at the
opposite end of the continuum is, in my opinion, irrational; my worldview is not binary. As
Morgan (2014) argues, the dispute between positivism and constructivism is essentially “discussions about two sides of the same coin” (p. 1049). I, therefore, align myself with a pragmatic approach, whilst also acknowledging that within a philosophical continuum (Betzner, 2008), I would be closer to the constructivist (subjective) end than to the post-positivist (objective).

Moreover, a key element of pragmatism is rooted in the notion that the researcher should use all available approaches to understand the problem (Creswell, 2017), consciously choosing the methodological approach that works best for the research problem (Tashakkori & Teddlie, 2008). Pragmatism values knowledge based on application and impact on decisions in practices (Cruickshank & Collins, 2017). As a practising outdoor instructor and active researcher - a ‘pracademic’ straddling both communities (Posner, 2009), my primary desire is to conduct research that has a practical outcome and is of use to practitioners in real-world setting (Glasgow, 2013; Johnson & Onwuegbuzie, 2004).

### 3.3.4. Criticisms of Pragmatism

To be truly pragmatic requires acknowledgement of the criticisms of a pragmatic approach. Pragmatism is often criticised as an ‘anything-goes’ approach, suggesting it is not sufficiently considered and is used as a justification for a move towards method acceptability (Maxcy, 2003). Morgan (2014) however, presents pragmatism as a paradigm which offers an alternative to the old, dichotomous ways of thinking. An approach which, in its place, offers a coherent philosophy that goes beyond simply ‘what works’. Rather than being forced to choose between a pair of extremes as absolutes, pragmatism offers an opportunity to consider a nuanced alternative (Morgan, 2007). According to Creswell and Plano Clark (2011) pragmatism does not get involved in “contentious metaphysical concepts such as truth and reality. Alternatively, pragmatism accepts that there can be single or multiple realities that are open to empirical enquiry” (p. 5). This agrees with Rorty (1982) who argues that pragmatists
want to stop discussing the nature of reality and knowledge; instead “they would simply like
to change the subject” (p. 2). Abandoning the discussion of philosophical issues, however, is
unhelpful, and likely contributed to past views of pragmatism as a form of “subjective
madness” (Russell, 1945, p. 818) devoid of philosophical underpinning. Consequently,
engaging in these discussions is vital. Dialogue both demonstrates the strengths and
flexibility of pragmatism and facilitates discourse with other paradigms (Giacobbi et al.,
2005). Pragmatic research has also been criticised as sometimes failing to describe
adequately who the pragmatic solution is useful for (Mertens, 2003). Johnson and
Onwuegbuzie (2004) add that the explanation of ‘useful’ can be vague unless explicitly
addressed. In response to these criticisms, I will explain the purpose of the research, whom it
will benefit, and in what ways.

Pragmatism is often linked to mixed-methods research, in the same way that
constructivism is linked to qualitative and post-positivism is linked to quantitative. Biesta
(2010), however, argues that pragmatism does not provide a philosophical foundation for
mixed methods research of itself. Instead, it is about choosing the most appropriate method to
solve the problem practically, whether that is a single, multiple or mixed methods approach
(Kaushik & Walsh, 2019). This flexibility must therefore be matched by a clear articulation
of what methods have been employed, how and why (Shenton, 2004).

Importantly, pragmatism considers potential researcher biases as an opportunity to
encourage novel insights, rather than challenges to objectivity, a constructivist trait in this
sense; pragmatists consider themselves co-constructors of knowledge (N. Denzin & Lincoln,
2008). As such, I acknowledge that my experience as an active OBI and practitioner in OBI
development brings specialised experience to the researcher role. My previous experiences,
ideology, and knowledge will certainly have influenced data collection and analysis, and
hopefully contributed to this in a positive way (Giacobbi et al., 2005).
Under each different paradigm, this research would have flowed very differently. For example, working within a constructivist paradigm which values the relativist view of the potential for multiple realities. Constructivism promotes exploration through human interaction between the researcher and the subject (i.e., observations, interviews). Constructivist methodologies as the singular approach in this thesis would have influenced the entire research process. The research problem may have been viewed as a question of exploring the experiences of instructors’ DM, without a focus on developing meaningful practical outcomes. This, in turn, would have influenced the literature sought out and reviewed. For example, a grounded theory approach within a constructivist paradigm suggests that to protect the ‘groundedness’ of the findings, conducting a literature review prior to data collection and analysis should be a ‘light touch’, or even avoided entirely (Deering & Williams, 2020; Glasser & Strauss, 1967). Regarding the methods, larger scale data collection (e.g., in Chapters 4 and 8) would have been inaccessible. These broad pictures of data were important however, to support the in-depth detailed personal experiences and sensemaking data, such as that gained from interviews (e.g., in Chapters 4, 5, and 6). Particularly, given the relative newness of the research area, a constructivist approach may not have provided adequate evidence to support the implications for OBT.

Similarly, a positivist paradigm approach which seeks one objective truth, would not have identified the nuances of individual experience, and in the complexity and dynamism of the outdoors. The research problem itself may have been viewed as something to be measured or solved, rather than explored. The review of literature would have likely focussed on research which approached inquiry from a constructivist view, potentially seeking out ‘optimum’ DM, and thereby narrowing the view of the research problem prior to inquiry. The opportunity to collect data on a larger scale through the often quantitative nature of its associated methods would provide a broader but shallower picture. Additionally, positivist
approaches suggest that the researcher’s beliefs and values can, and should, be bracketed. Given my position as a pracademic, and role within OBT, this approach may have led to biases going unchecked. Ultimately, grounding this thesis outside of a pragmatic paradigm may well have produced findings which were inapplicable to the OBI context, and therefore of less practical value in the complexity of the real-world setting.

3.4. **Research Design**

This Section presents the research design decisions made and provides demographic information about the participants used. It then presents the methods used in the empirical studies described in Chapters 4, 5, 6 and 7. Given the relative lack of prior research in the area and the pragmatic approach, I overall utilised an abductive approach (Dubois & Gadde, 2002). Instead of moving only from observation to theory, as in induction, or from theory to observation, as in deduction, an abductive approach cycles between the two (Robson & McCartan, 2016). Design choices were therefore made pragmatically, dependent on the needs of the research question, to produce meaningful findings of practical use to OBT. I employed a convergent mixed methodology (Creswell & Plano Clark, 2017) with a predominantly qualitative approach, to gain a rich and deep understanding of the experiences and opinions of the target group. The research was cross-sectional owing to the focus on exploring current practice and the participants’ views on this. Often, however, the research sought out reflexive responses, where participants were asked to reflect on their past experiences and the impact of these.

3.4.1. **Participants and Recruitment**

Pragmatically, purposive sampling was employed to ensure domain expertise, experience, and quality in terms of self-reflective ability. Nash et al.’s (2012) recommendations alongside previous research (e.g., Christian et al., 2017; L. Collins & Collins, 2016b) were used as a guide to develop the following criteria: (1) a minimum of 1 year of instruction and leadership
experience since accreditation; for example, Summer Mountain Leader Award, Rock
Climbing Instructor Award (Mountain Training Association, 2023), Paddlesport Leader Award (British Canoeing, 2023); (2) Having the capacity to lead several adventure activities, working independently with groups; (3) current active engagement in outdoor instruction; and (4) a willingness to discuss their professional practice. Table 3.1 provides an overview of the participants in each Chapter.

With the exception of participants in Phase one of Chapter 4 (who were recruited from a variety of organisations), and Phase two of Chapter 8 (who were not OBIs, but OBI developers), a fifth criterion was included: employed by OBT as an OBI or Senior OBI at one of their six residential centres in the UK. This facilitated a focused project where differences between outdoor instructor domains (Sinfield et al., 2019) and employers could be minimised. The emphasis could therefore be placed on the instructors and their development. Samples were purposive in order to produce information-rich cases (Morrow, 2005). The samples were intended to be representative, with the exception of Chapter 6 which was closer to a convenience sample due to limited access, as a result of the COVID-19 pandemic. Participants were self-selecting and able to include/exclude based on the criteria. OBT’s active engagement in supporting their OBIs’ continued professional development resulted in a mutual aim, and OBT kindly facilitated access to a variety of OBIs as participants. Importantly however, there was no obligation for OBIs to participate. Careful efforts were made to ensure there were no actual or implied consequences on OBIs’ employment if they chose not to participate.
<table>
<thead>
<tr>
<th>Study</th>
<th>Participants known as</th>
<th>Study focus</th>
<th>Experience</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chapter 4</strong></td>
<td>Competent OBI</td>
<td>Broad</td>
<td>OBIs and Senior OBIs. Minimum of 1 year of instruction and leadership experience since accreditation</td>
<td>Minimum of three entry level qualifications e.g., Summer Mountain Leader Award, Rock Climbing Instructor Award (Mountain Training Association, 2023); Paddlesport Leader Award (British Canoeing, 2023)</td>
</tr>
<tr>
<td><strong>Phase 1:</strong></td>
<td>Competent OBI</td>
<td></td>
<td>Expert outdoor instructor</td>
<td>UK Senior outdoor instructors. Minimum of 5 years of instruction and leadership experience since higher level accreditation (allowing operation in more remote or challenging environment)</td>
</tr>
<tr>
<td><strong>Phase 2:</strong></td>
<td>Competent OBI only</td>
<td></td>
<td></td>
<td>As above</td>
</tr>
<tr>
<td><strong>Chapter 5</strong></td>
<td>Early-career OBI</td>
<td>Narrow</td>
<td>OBIs. Between one and 6 years of experience working as an instructor since gaining initial national governing body certification qualifications</td>
<td>Minimum of two entry level qualifications.</td>
</tr>
<tr>
<td><strong>Chapter 6</strong></td>
<td>Mid-career OBIs</td>
<td>Narrow</td>
<td>Senior OBIs. Between 7 and 15 years of experience as an outdoor instructor prior to promotion as a Senior OBI</td>
<td>Three or more entry level qualifications. Plus, one or more higher level qualification</td>
</tr>
<tr>
<td><strong>Chapter 8</strong></td>
<td>OBIs</td>
<td>Broad</td>
<td>OBIs and Senior OBIs. Began working for OBT in the past 6 years</td>
<td>Minimum of two entry level qualifications. No maximum of entry and higher level qualifications</td>
</tr>
<tr>
<td><strong>Phase 1:</strong></td>
<td>OBI developers</td>
<td></td>
<td>Learning and Adventure Manager, Head of Learning and Adventure, Head of Centre</td>
<td>Responsibility for OBI and Senior OBIs’ development. Minimum of one higher level qualification. No maximum</td>
</tr>
</tbody>
</table>
3.5. Methods

In line with the pragmatic approach, four different methods have been applied to the empirical studies in order to meet the research objectives. Chapter 4 employed a converging mixed approach, Chapters 5 and 6 employed qualitative semi-structured interviews with different groups of instructors, and Chapter 8 a mixed survey and qualitative focus group. These are outlined below, further detail such as demographics and analysis are given within the respective Chapters. Prior to beginning any data collection, ethical approval was sought from the university ethics committee, and informed consent was gained from the participants. Copies of participant information sheets, consent forms, and ethical approvals, can be found in appendix C, D, and E, respectively.

3.5.1. Chapter 4: Is Adaptive Expertise a Characteristic of Outdoor Instructors?

The context for this Chapter was to consider a broader view of outdoor instructor development: what is the end goal? What type of expertise are we developing? Reflecting on the lack of empirical data challenging the robustness of Hatano and Inagaki’s (1986) proposition of AEx, and Hutton et al. (2017) assertion of a lack of empirical research, the intention was to undertake real-world research (Robson & McCartan, 2016). The end goal was to provide information that enhances the training of OBIs by understanding the type of expertise that developmental training should focus on.

Objectives:

1) To determine if outdoor instructors, including OBIs, are adaptive experts.
2) To identify and analyse the features of adaptive expertise in a sample of OBIs.

To achieve these objectives, a convergent mixed methods approach was employed. Firstly, a quantitative Adaptive Expertise Inventory (Carbonell et al., 2016) was distributed to a sample of instructors in a variety of organisations (including OBT) and with a variety of skill levels. Data were analysed using descriptive analysis, and an independent t-test.
Qualitative semi-structured interviews were then employed with a smaller sample of instructors employed by OBT. Interviews were then transcribed verbatim and analysed through a reflexive thematic analysis (Braun & Clarke, 2022b).

3.5.2. Chapters 5 and 6: Comparing Early-Career and Mid-Career Outdoor Instructors’ Professional Judgement and Decision Making

The context for these studies was to take a more detailed look at instructor PJDM and its development. In order to compare this across two groups (early-career OBIs and mid-career OBIs) an identical method was employed in two consecutive studies. The replication allowed for an exploration of the starting and mid-way points of development, post initial qualification.

Objectives:

3) To identify and analyse the key components of DM in early-career and mid-career OBIs.
4) To explore how early-career and mid-career OBIs have developed their judgement and DM.
5) To compare key components and development of early-career and mid-career OBIs’ judgement and DM, and propose an approach to best develop judgement and DM in OBIs.

Given the exploratory objectives of this study, I took an exploratory qualitative approach utilising semi-structured interviews following a period of observation, to achieve breadth and richness in responses (Patton, 2002). Each data set was subsequently transcribed verbatim by hand and analysed using a reflexive thematic analysis in its own right, before comparison. The interpretation of the analyses were then compared to identify similarities and differences which are discussed in Chapter 7.
3.5.3. Chapter 8: Cognitive Apprenticeship as a Means of Professional Judgement and Decision Making Development

Based on the findings of the prior three empirical studies, development akin to a CA was identified as being present within OBT. Subsequently, there was a need to investigate if, and potentially how, this CA approach to development applied across a broader sample.

Objectives:

6) To evaluate OBT’s current approach to instructor induction and judgement and DM development, and its alignment with a cognitive apprenticeship framework.

7) To make recommendations regarding how OBT’s current approach to judgement and DM development can be best developed and enhanced.

A convergent mixed methods approach was employed through an online survey. The first part of the survey utilised ranking and closed questions in order to gain a broad response from a wide sample and support the qualitative responses. Following this, there was a qualitative section to the survey employing open questions that participants could respond to using a voice record option or typed text.

The intention was to use a wide reaching survey and achieve a large number of responses to understand the experiences of the total population. This larger scale data collection is important to verify the practical implications of findings in Chapters 4, 5 and 6 which suggested that a CA was a potential approach to development prior to making any changes to the organisation’s current development programme. A descriptive analysis of the quantitative data was undertaken, and a reflexive thematic analysis was undertaken of the qualitative data.

Following this analysis, the results and an ‘alpha’ version of a tool to support PJDM development were presented to a focus group of centre leaders responsible for the development of OBIs. They discussed the findings, their reflections, and the potential
implications. The focus group was analysed through reflexive thematic analysis. Through follow up internal member reflections the tool was refined in partnership with OBT.

### 3.6. Notes on the Use of Reflexive Thematic Analysis

Thematic analysis has a recent history involving some confusion and misinterpretation. There are several versions of thematic analysis which could be adopted such as, reflexive thematic analysis, coding reliability thematic analysis, or Codebook thematic analysis (Braun & Clarke, 2019).

Coding reliability thematic analysis (e.g., Guest et al., 2012) focuses on the accuracy of results framed by the positivist notion of a universal truth which is there to be uncovered. This ‘accuracy’ is often achieved using multiple coders who compare their coding. However, in seeking agreement of coding that is ‘right’, this approach does not account for the researcher’s personal values, experiences and beliefs, and is therefore not explicitly aware of potential biases. In addition, seeking agreed and accurate coding between researchers risks simplifying the analysis so that the richness and insight are lost (Morse, 1997).

Codebook thematic analysis (e.g., King & Brooks, 2017) uses a framework of codes from which researchers code the data. Codebook thematic analysis searches for themes in the data rather than the codes being the building blocks which inform themes. Like codebook thematic analysis, coding reliability thematic analysis ignores the researcher’s active role in creating meaning (advocated by reflexive thematic analysis). As such, I chose to utilise reflexive thematic analysis (Braun & Clarke, 2022b).

Other qualitative analysis tools appear similar to reflexive thematic analysis, such as grounded theory (Glasser & Strauss, 1967) and interpretive phenomenological analysis (J. Smith et al., 2022). Grounded theory takes a sociological focus in relation to the research question while interpretive phenomenological analysis tends to take an idiographic focus.
Both these methodologies were declined in favour of the more flexible reflexive thematic analysis.

Given the many approaches in the “family” (Braun & Clarke, 2022b, p. 223) of thematic analysis, I have specifically followed a reflexive thematic analysis approach based on its suitability for exploring deep, complex, nuanced meaning and understanding across a dataset. Reflexive thematic analysis also aligned with my values and philosophical assumptions, its theoretical flexibility (Braun & Clarke, 2022b) complementing my pragmatic approach and desire for practical workable outcomes. Reflexive thematic analysis involves six progressive phases which act as guidelines for data analysis (Table 3.2); (1) familiarising yourself with the data, (2) coding, (3) generating initial themes, (4) developing and reviewing themes, (5) refining defining and naming themes, and (6) writing up. Although progressive, these phases are not linear. It is possible, and indeed encouraged, to return to previous phases if needed during the analysis (Braun & Clarke, 2022b). Reflexive thematic analysis highlights that researcher subjectivity is the primary ‘tool’ in analysis. Rather than a problem to be managed, it is a resource for research. As such, Braun and Clarke (2022a) advocate that analysis and interpretation of data cannot be objective, that knowledge generation is inherently subjective and situated. Throughout the data collection (e.g., conducting interviews) and analysis, my experience and domain expertise (noted in 3.3.2) was crucial in comprehending the participants’ experiences. Without this in-depth knowledge of OBI practice, the value of the actions and words of the participants may be meaningless (Maggs-Rapport, 2000).

Braun and Clarke have continually modified and updated their guidance for reflexive thematic analysis, meaning it is a living approach (Braun et al., 2019; Braun & Clarke, 2006, 2021, 2022b). This does present a challenge with ever-changing terminology, Braun and Clarke lack patience for those who cannot stay abreast of the changes in terminology and
nuances of application. The challenge is that over a period of sequential research projects, this becomes confusing and difficult to compare and contrast results – a particular challenge given the nature of Chapters 5 and 6. Consequently, I have used the language and processes provided by Braun and Clarke (2022) in writing up this thesis, but utilised earlier guidance (Braun et al., 2019; Braun & Clarke, 2006) in earlier study design/analysis.

Braun and Clarke instruct that it is not essential to understand all of the theory before beginning reflexive thematic analysis. At the start of my research journey, I had a limited understanding of the nuance of research analysis. I confused aspects of different types of thematic analysis (e.g., coding reliability) and in initial studies attempted to utilise bracketing and member checks, which are not considered part of reflexive thematic analysis as it is now described (Braun & Clarke, 2022b). I share this to demonstrate both my reflexivity and my growth as a researcher over the past 6 years, and to highlight the very real challenge in remaining up to date with the best practice.
Table 3.2. How the Six Phases of Reflexive Thematic Analysis Process (Braun and Clarke, 2022) Were Enacted in this Thesis

<table>
<thead>
<tr>
<th>Phase</th>
<th>How I enacted each phase of data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Familiarising yourself with the data.</td>
<td>I chose to transcribe the data in Chapters 4, 5, and 6 by hand, rather than using a transcription service. The process allowed me to immerse myself in each interview as I transcribed verbatim. In Chapter 8, the audio data I collected was automatically transcribed by an artificial intelligence program (Phonic.ai, 2023). I listened back through the audio and edited the transcripts to ensure they were accurate. I then read and re-read the transcripts and survey responses several times.</td>
</tr>
<tr>
<td>2. Coding</td>
<td>I worked systematically through the data several times, starting at different points in the data set each time. I identified and captured data which appeared potentially interesting, relevant, or meaningful to the research question, rather than simply the number of occurrences. Codes were given at both semantic and latent levels. I made use of critical friends (Costa &amp; Kallick, 1993) throughout this stage, and continuously through the cycles of stages two to six. Additionally, I kept a log of my reflections throughout.</td>
</tr>
<tr>
<td>3. Generating initial themes</td>
<td>Here I sought to identify shared meaning and patterns across the data using the codes in the previous phase. These were based on the initial codes and familiarisation, and as noted earlier, my own knowledge aided in shaping and comprehending the data (Maggs-Rapport, 2000). I developed candidate themes iteratively, intending to encapsulate shared meaning.</td>
</tr>
<tr>
<td>4. Developing and reviewing themes</td>
<td>I took the candidate themes back to the full dataset to check the fit. In this phase, I often made revisions to my candidate themes, combining or dividing them to better represent the story of the data, sometimes discarding candidate themes altogether. This process also provided an opportunity to consider the relationships between the themes, and between themes and existing knowledge/theory.</td>
</tr>
<tr>
<td>5. Refining, defining and naming themes</td>
<td>On occasion at this stage, I found that the themes I had defined in phase four were not as developed as I had thought. This called for a return to phase four, and further development and review of the themes – highlighting the iterative aspect of reflexive thematic analysis.</td>
</tr>
<tr>
<td>6. Writing up</td>
<td>I began writing informally (i.e., reflexive journaling, personal notes, writing to capture and understand my ideas) in phase one, and more formally from phase three, finally weaving together the narrative with data extracts to compile a coherent story. In writing up I utilised direct quotes from participants to support the narrative, and at times (though not always), I referenced the number of participants who shared a comment. In line with my pragmatic philosophy, this was used when deemed useful context to the discussion, rather than as a blanket rule, in line with the approach to coding (phase 2).</td>
</tr>
</tbody>
</table>
Finally, in the reflexive thematic analysis, as with the complex and ‘messy’ nature of outdoor instructors’ operational environment and practices (S. Simon et al., 2017), there were connections, interaction, and overlap of some themes and subthemes. The presentation of themes in table format inherently implies a linear relationship. I have therefore chosen to utilise thematic maps to support the presentation of the results (Braun & Clarke, 2022b). The links between subthemes are indicated by lines on the map, highlighting where an element of the subtheme has a relationship to an element of another. For example, in Chapter 6 (p 134) an authentic practice environment is a subtheme in its own right, noting the importance of authenticity and real consequence in practice. However, it is also related to formal training (which may be conducted in an authentic setting) and, to seeking challenge (where OBIs sought to practice their skills in challenging environments outside of the workplace). These three subthemes are collated under the theme Critical Experiences.

3.7. Trustworthiness and Quality

The approach in this thesis drew on the recommendations of Levitt et al. (2017) for integrity via explicit consideration of the fidelity (adequate data, perspective management, and groundedness) and utility (contextualisation, insight, meaningfulness, and coherence) of the research. All these factors are ripe for demonstrating methodological integrity within a pragmatic approach. These were used to guide the research design as well as the research process itself, so that trustworthiness and quality were integrated into the research process. Levitt et al. suggestions reflect earlier considerations by Tracy (2010) who proposed a number of universal criteria (worthy topic, rich rigour, sincerity, credibility, resonance, significant contribution, ethics, and meaningful coherence) to be considered and applied equally to ensure rigour (B. Smith & McGannon, 2018).

In this thesis, regarding perspective management, a reflective journal was used throughout the research process to record and revisit thoughts. I also utilised my supervisors
and professional colleagues as critical friends throughout the research. Meaningfulness and
coherence are evidenced in the direct relation of the research objectives to the findings, which
build on existing knowledge and provide practical implications (addressing resonance)
presented in the discussion. Contextualisation is demonstrated through comprehension of
participant context. This comprehension was accomplished by spending time with
participants in their working context prior to, and during data collection, and by considering
the findings within their location and culture. Evidence of groundedness has been exhibited
through the use of direct quotes from participants in the results within each Chapter.

As an experienced and qualified outdoor professional across a range of activities and
organisations, I subscribe to the notion that theory-free knowledge is not possible. I
acknowledge that, while bringing specialised experience to the researcher role, my previous
experiences, ideology, and knowledge will have influenced data collection and analysis.
Accordingly, the generation of themes in a reflexive thematic analysis had an inherently
subjective aspect; themes could not be shaped without reference to my beliefs, values and
experiences. Whilst the notion of bracketing was considered, it suggests that it is possible to
put aside all preconceptions and biases before beginning analysis, in direct contrast to
suggestions from Braun and Clarke (2021) in their reflexive thematic analysis. Consequently,
I reject the notion of bracketing and inter-rater reliability. Instead, a reflective journal, and
critical friends (Costa & Kallick, 1993), were utilised to assist in unpacking, understanding,
and challenging my assumptions in relation to both the topic and any participant group
(Braun & Clarke, 2022a).

In addition, Braun and Clarke (2022, p. 269) propose a 15-point checklist specific to
“good” reflexive thematic analysis which, alongside a deep engagement, reflexivity and
theoretical understanding, should assist in ensuring good and rigorous research. These points
are more specific. For example, data transcribed to an appropriate level of detail, or that the
excerpts evidence the analytic claims. However, Braun and Clarke’s checklist broadly filter into Levitt et al. (2017) topics of fidelity and utility. In particular, Braun and Clarke suggest that talking with others, such as peers, can help to deepen interpretation and the richness and quality of analysis: providing insight and supporting the integrity and trustworthiness. I have maintained this discourse in my pursuit of theory through practice. I shared and discussed findings throughout this thesis with both participants and other OBT colleagues, seeking their thoughts and reflections on these. At the time I did not consider this explicitly as member reflections (e.g., Cavallerio et al., 2020) and thus did not collect and record these interactions. They were, however, invaluable in my continued understanding of the practical implications. As such, in Chapter 8 I explicitly engaged in and collected member reflections to support the trustworthiness and rigour of the research process, findings, and their impact.

3.8. Chapter Summary

Building on the theoretical context for research presented in Chapter 2, this Chapter has laid out the methodological foundations on which the research has been built. A brief overview of research philosophies: ontology, epistemology, axiology and methodology, was given. Followed by discussion of how the variety of stances within these philosophies inform research paradigms.

I next shared my philosophical views, supported by some further context, in the form of a reflexive first-person narrative. I described my background and experience, how this shaped my current thinking, values, and philosophies, and consequently informed the choice to take a pragmatic approach. A more detailed consideration of the pragmatic approach and its criticisms were then discussed. Finally, the demographic profile of the participants and specific methods used in each of the empirical studies were presented, followed by a discussion of reflexive thematic analysis and of trustworthiness and quality.
The following Chapters will demonstrate the application of these methods within the respective studies, before an overall discussion of findings, implications for practice, future considerations, recommendations, and concluding remarks are offered in Chapter 9.
4. Is Adaptive Expertise a Characteristic of Expertise in Outdoor Instructors?

As highlighted in Chapter 2, it seemed likely that hyperdynamic environments required OBIs to be adaptive experts, the ability to decide between different approaches based on the demands of the situation being essential. The outdoor instructor role necessitates pedagogical and technical agility to meet the unique challenges outdoor instructors face. Hatano and Inagaki’s (1986) notions of AEx could characterise the practice of outdoor instructors, and Tozer et al. (2007) previously discussed AEx as a possible aspect of outdoor leadership. Currently, however, the extent to which AEx exists in outdoor instructors is unknown, and thus the corresponding need for DM skills is not explicitly considered in outdoor instructor education and development. Therefore, this Chapter asks: is AEx a characteristic of outdoor instructors, as Tozer et al. (2007) hypothesised? And if so, what are the characteristics of this expertise in OBIs?

The Chapter begins by delving more deeply into the notion of AEx and its relation to outdoor instructors, before presenting the findings of a mixed methods study of a group of outdoor instructors. Quantitative data from the AEx Inventory (Carbonell et al., 2016) highlights the similarities and differences in the adaptive capacity of competent, and expert outdoor instructors. Qualitative findings from semi-structured interviews with competent OBIs are then presented, prior to a discussion of the findings and implications.

4.1. Adaptive Expertise

Synthesising the definitions of AEx in Chapter 2 yields the following aspects: (1) understanding of the situation at hand, (2) possessing the skills required to confront that situation, and (3) self-awareness to balance the situational demands with the individual’s abilities (Hutton et al., 2017). According to Hatano and Inagaki’s view, the differentiation
between routine and adaptive experts is the extensive, integrated knowledge possessed by adaptive experts (Hatano & Inagaki, 1986). This position, however, is now somewhat dated. A more contemporary view is of the individual, when operating in dynamic conditions in an environment which requires flexibility and adaptability, building their adaptive expertise from the outset, rather than relying on prior development of routine expertise (Jensen, 2022).

For outdoor instructors this knowledge is likely created as a result of their dynamic contextual demands, though, as highlighted in Chapter 2, this has yet to be explored in research within the outdoor instructor context.

AEx is multi-dimensional and relevant to particular roles and contexts (Pulakos et al., 2000). Given Jensen et al.’s (2022) proposition, environments which require flexibility, would logically also require AEx. Mirroring earlier observations in Chapter 2 regarding environment, an application of Pulakos et al. (2000, 2009) taxonomy of adaptive performance (Table 4.1) suggests that the outdoor instructor’s role appears ripe for AEx.

Adaptive experts appear to focus on acquiring new domain knowledge and skills to apply flexibly, as opposed to learning procedures and processes. The focus on adaptation influences how knowledge is retained (e.g., procedurally, episodically, semantically), how the components of that knowledge are related and linked, and how the knowledge is articulated. Adaptive experts value this learning and are motivated to apply their knowledge to problem solve (E. Bell et al., 2012; Bransford et al., 2005; Crawford et al., 2005). Corresponding with the value placed on learning and epistemology, there is a willingness to challenge and replace prior assumptions. Adaptive experts, therefore, are able to recognise gaps in their knowledge, highlighting a reflective capacity (Bransford et al., 2005; Crawford et al., 2005; D. Schwartz et al., 2006) and associating AEx with a sophisticated epistemology (Schommer, 1994).
**Table 4.1. Examples from Research Highlighting Adaptive Expertise in the Outdoor Instructor Context (Adapted from Pulakos et al. 2000, 2009)**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Outdoor instructor example and research support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solving problems creatively</td>
<td>Having to solve problems for which there are no easy or straightforward solutions, wicked or messy problems (S. Simon et al., 2017)</td>
</tr>
<tr>
<td>Dealing with uncertainty or unpredictable work situations</td>
<td>Operating with incomplete and complex information regarding a situation (L. Collins &amp; Collins, 2015a, 2015b, 2016b)</td>
</tr>
<tr>
<td>Learning new tasks, technologies, and procedures</td>
<td>The synergy and dynamic nature of the task, environment, and individual generate unique challenges that require the development of novel solutions (L. Collins &amp; Collins, 2016b, 2016c; Mees et al., 2020)</td>
</tr>
<tr>
<td>Demonstrating interpersonal adaptability</td>
<td>Contending with the ‘needs versus wants’ balance with clients (Mees et al., 2020; S. Simon et al., 2017)</td>
</tr>
<tr>
<td>Demonstrating cultural adaptability</td>
<td>Learning the rules for appropriate interaction given the apparent counter-culture (see D. Collins, Collins, &amp; Willmott, 2016)</td>
</tr>
<tr>
<td>Demonstrating physically orientated adaptability</td>
<td>Outdoor instructors are required to participate in sport alongside their students as part of the coaching process (L. Collins &amp; Collins, 2012, 2016c)</td>
</tr>
<tr>
<td>Handling work stress</td>
<td>Roles of the outdoor instructor are multi-functional (L. Collins &amp; Collins, 2012; Sinfield et al., 2019)</td>
</tr>
<tr>
<td>Handling emergencies or crisis situations</td>
<td>Making quick decisions under potentially life-threatening conditions (L. Collins &amp; Collins, 2013)</td>
</tr>
</tbody>
</table>

DM for adventure sports coaches, and thus likely also for outdoor instructors, is a combination of both classical DM and naturalistic DM processes, the balance between which varies depending on the context of the decision (L. Collins & Collins, 2015a, 2015b, 2016c). AEx, therefore, appeared necessary to allow the outdoor instructor to function within the conditionality of PJDM in the hyperdynamic environment. The environment and the degree to which the outdoor instructor has, or lacks, control in that context are unique characteristics of the adventure education context (L. Collins & Collins, 2016c). Therefore, to operate safely and effectively within the complexity of this environment, it seems important for outdoor
instructors to be aware of their level of expertise, knowledge and problem solving ability (E. Bell et al., 2012; Crawford et al., 2005).

Commensurate with the characteristics of AEx, and given their working context, outdoor instructors are also likely to require a view which is flexible, rather than reliant on procedure. An agile instructor must possess knowledge of why, and under which conditions existing approaches are adapted. The capacity to recognise a situation and select or create the ‘tools for the job’ seem to be critical aspects of outdoor instructors’ practice; AEx may indeed be a necessity for the pedagogically agile outdoor instructor. Thus, there are two key questions to answer: Is AEx a characteristic of outdoor instructors, as Tozer et al. (2007) hypothesised? And if so, what are the characteristics of that expertise in OBIs?

4.2. Method

A mixed two-stage approach was employed including the quantitative AEx Inventory (Phase 1) and a qualitative semi-structured interview which was thematically analysed (Phase 2).

4.2.1. Phase 1

4.2.1.1. Participants. Participants were British ‘competent’ outdoor instructors (OBIs and Senior OBIs, minimum of 1 year of instruction and leadership experience since accreditation) and ‘expert’ outdoor instructors (UK Senior outdoor instructors, minimum of 5 years of instruction and leadership experience since higher level accreditation) (N=57). Participants were identified via personal contact and as noted in Chapter 3, based on the following criteria to ensure expertise, experience and quality: (1) a minimum of 1 year of instruction and leadership experience since accreditation to take sole charge of a group during an adventurous activity, (2) active engagement in outdoor instruction, (3) working autonomously with groups, and (4) a willingness to discuss one’s professional practice. The AEx Inventory was distributed to 72 participants. 57 participants consented and responded (79% response rate).
4.2.1.2. **Procedure.** After obtaining ethical approval, informed consent was sought from the participants, before a copy of the questionnaire was given to each outdoor instructor. The 11-item AEx Inventory was premised on adaptation as a multidimensional process, (as cited earlier, domain skills, metacognitive skills, and innovative skills) with items one to five capturing domain skills, and six to eleven capturing innovative skills (Carbonell et al., 2016). Participants were asked to complete the AEx Inventory confidentially and anonymously by scoring responses to the 11 questions (Table 4.2) with each item utilising a 5-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’.

**Table 4.2. Questions in Carbonell et al.’s (2016) Adaptive Expertise Inventory Using 5-Point Likert Scale**

| Question 1 | During past projects, I was able to develop and integrate new knowledge with what I had learnt in the past. |
| Question 2 | During past projects, I concerned myself with the latest development in the domain of my discipline. |
| Question 3 | During past projects, I gained a better understanding of concepts in my discipline. |
| Question 4 | During past projects, I realised that the knowledge in my discipline keeps on developing. |
| Question 5 | During past projects, I realised that I need to learn continuously to become and stay an expert in my field. |
| Question 6 | During past projects, I showed that I am willing to keep on learning new aspects related to my discipline. |
| Question 7 | During past projects, I applied my knowledge in new and unfamiliar situations in areas related to my discipline with a degree of success. |
| Question 8 | During past projects, I focused on new challenges. |
| Question 9 | During past projects, I approached it like other projects I had worked on in the past. |
| Question 10 | During past projects, I was able to continue performing at a high level when confronted with unfamiliar situations or tasks. |
| Question 11 | During past projects, I was able to apply my knowledge flexibly to the different tasks within the project. |
4.2.1.3. **Analysis.** The responses were scored and added to create a total for each participant across the sample. Descriptive analysis and an independent t-test were conducted to compare AEx between the competent instructor group and expert instructor group using IBM SPSS statistics version 24. The AEx Inventory was distributed to 72 participants. 57 consented and responses were received and analysed (79% response rate). Two further responses were excluded for falling outside the criteria devised for completion, and one response contained a single erroneous submission that was accepted following agreement across the research team (n=55, 96% completion rate). Following completion, participants who were employed by OBT were asked to indicate whether they would be willing to participate in the interviews (Phase 2).

4.2.2. **Phase 2**

4.2.2.1. **Participants.** A smaller purposive sample of consenting OBIs who participated in Phase 1 agreed to be interviewed (n=6, 13% of total sample). In order to avoid deductive disclosure, given that the demographics and OBT are known, individual OBI’s experience and qualification are not provided. However, in Chapter 3 I offer a table which outlines the overall experience and qualification of outdoor instructors in each study (Table 3.1, p. 71).

4.2.2.2. **Procedure.** Reflecting the findings in Phase 1, a four-question semi-structured interview guide (Willis et al., 1999) was designed and piloted with a representative sample of current OBIs who met the participant criteria (n=2). The pilot tested the interview questions, before asking additional questions of the participants to establish their understanding of each question, wording, and phrasing. Following the pilot, several small amendments such as editing wording for clarity, removing ambiguity, and minimising overlap across two questions, were made to the guide. The final questions were used to guide the semi-structured interviews but were not used verbatim (Table 4.3). The notes were used
as reminders for myself as the interviewer, as to the type and range of responses to be collected, supporting the asking of relevant questions during the interview. The questions and prompts were designed to be increasingly cognitively challenging. Initially, the questions stimulated recall, in descriptive terms, of an aspect of the session which was pre-agreed between the interviewer and participant. The interview then explored the breadth of options considered by the OBIs, identifying the choice factors that effected the adoption of an approach. Finally, the OBIs were asked to consider a hypothetical situation in which their skills could be deployed. The interviews were conducted with each OBI at a time and place of their convenience following a practical adventurous session led by them. Data were recorded using a digital Dictaphone and securely stored electronically in mp3 file format.

### 4.2.2.3. Analysis

Interviews lasted between 15 and 31 minutes ($M=23, SD=5.46$). A reflexive thematic analysis was undertaken following the guidance of Braun et al., (2019) though, as noted in Chapter 3, the language in this Chapter has since been updated to reflect Braun & Clarke (2022). Participant codes (Robson & McCartan, 2016) were assigned to ensure OBIs’ anonymity (e.g., OBI).
### Table 4.3. Semi-Structured Interview Guide

<table>
<thead>
<tr>
<th>Question</th>
<th>Prompts</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>What to expect in the interview</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reminder of right to withdraw and confidentiality.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Offer options from observation if needed</td>
<td></td>
</tr>
<tr>
<td><strong>Agree on a decision-point within the session</strong></td>
<td>How did you do that?</td>
<td>Detailed description or broad?</td>
</tr>
<tr>
<td></td>
<td>Why did you do that?</td>
<td>Linear or nuanced?</td>
</tr>
<tr>
<td><strong>Can you describe this aspect (identified and agreed in introduction) of your session</strong></td>
<td>What other options were available to you?</td>
<td>Range and scope of options</td>
</tr>
<tr>
<td></td>
<td>What options did you consider?</td>
<td>Motivations</td>
</tr>
<tr>
<td></td>
<td>Were there any options you did not consider?</td>
<td>Ease of recall</td>
</tr>
<tr>
<td></td>
<td>Did you rule anything out initially?</td>
<td>Detailed description</td>
</tr>
<tr>
<td></td>
<td>How?</td>
<td>Number of options</td>
</tr>
<tr>
<td></td>
<td>Why?</td>
<td></td>
</tr>
<tr>
<td><strong>What factors influenced your choice of options?</strong></td>
<td>What led you to choose that option?</td>
<td>Time</td>
</tr>
<tr>
<td></td>
<td>What deterred you from other options?</td>
<td>Observation</td>
</tr>
<tr>
<td></td>
<td>How did you choose?</td>
<td>Conditions</td>
</tr>
<tr>
<td></td>
<td>Why?</td>
<td>Motivation</td>
</tr>
<tr>
<td><strong>What if...?</strong></td>
<td>How might you adapt to different weather/group/purpose?</td>
<td>Individualised or group focused?</td>
</tr>
<tr>
<td>(Creativity question)</td>
<td>What might you do in a crisis situation?</td>
<td>Profile building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success/failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Higher water levels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Older/younger group</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Challenging behaviour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different session aim</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Injury</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Danger</td>
</tr>
</tbody>
</table>

### 4.3. Results and Discussion

#### 4.3.1. Phase 1: Adaptive Expertise Inventory

On average, the highly experienced ‘expert’ outdoor instructors reported greater AEx than the ‘competent’ OBIs ($M_{\text{expert}} (SD) = 50.3 (3.2)$ against $M_{\text{competent}} (SD) = 45.5 (4.20)$). A between subjects $t$-test found this difference to be statistically significant ($t (53) = 4.8$, $p<0.001$).

The inventory scores illustrate AEx was demonstrated to some degree by both competent and expert instructors, supporting Jensen et al.’s (2022) proposition that AEx may
be developed from the outset (without the prior need for route expertise, as Hatano and
Inagaki [1986] suggest). AEx was therefore considered to be an aspect of outdoor instructor
practice in this sample for all levels of experience. A novel finding in support of the original
theory and Tozer et al.’s (2007) proposition that outdoor instructors must be adaptive experts
to successfully operate in their working environment. Expert outdoor instructors appeared to
have greater AEx than their competent counterparts, however, competent OBIs also showed a
capacity for adaptability and some characteristics of AEx.

4.3.2. Phase 2: Semi-Structured Interviews

The purpose of these interviews was to gain more detailed insight into what characterises
AEx for these competent OBIs. These qualitative findings supported the findings of the AEx
Inventory in Phase 1 of the study, that competent OBIs were operating within the spectrum of
AEx – the more experienced the instructor, the greater their AEx. Therefore, endorsing
Phase 1, the qualitative findings confirm Jensen et al.’s (2022) proposition, rejecting the
notion that OBIs must first become routine experts. Instead, a gradual expansion of
adaptability through OBIs’ development within a dynamic environment is conceived.
Following interviews with the OBIs, the results of the thematic analysis comprised 145
codified units. These led to 13 subthemes, five themes, and two overarching themes; (1)
manging the span of control: the group and environmental factors, and (2) metacognitively
active instructors. A thematic table (Table 4.4) demonstrates the relationships between
themes in a linear manner. However, it does not express the complexity of relationships in the
data; for this, there are two thematic maps (Figures 4.1 and 4.2).
Table 4.4. Thematic Table Showing Overarching Themes and associated Themes and Subthemes of Competent Outward Bound Instructors Adaptive Expertise.

<table>
<thead>
<tr>
<th>Overarching Theme</th>
<th>Theme</th>
<th>Subtheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing the span of control: the group and environmental factors</td>
<td>Comprehension of the situational awareness and demands</td>
<td>Profiling and managing group needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preoccupation with safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Working in dynamic environmental conditions</td>
</tr>
<tr>
<td></td>
<td>Organisational demands, such as logistics</td>
<td>Working in time pressured situations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accommodating organisational constraints</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Working to externally specified aims</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Community of practice (working with another instructor)</td>
</tr>
<tr>
<td>Nested DM process</td>
<td>Efficient DM</td>
<td>Beginning with a detailed plan</td>
</tr>
<tr>
<td>Metacognitively active instructors</td>
<td>Metacognition</td>
<td>Personal philosophies and values influence decisions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Understanding of own DM</td>
</tr>
<tr>
<td>Reflection</td>
<td>Using past experience to inform DM</td>
<td>Reflection on-action predominantly</td>
</tr>
</tbody>
</table>
Figure 4.1. Thematic Map (Braun and Clarke, 2020) Demonstrating the Interconnected Nature of the Themes and Sub-Themes within the Overarching Theme ‘Managing the Span of Control’
Figure 4.2. Thematic Map (Braun and Clarke, 2020) Demonstrating the Interconnected Nature of the Themes and Sub-Themes within the Overarching Theme ‘Metacognitively Active Instructors’
4.3.2.1. Managing the Span of Control. The initial DM process for competent OBIs began by creating a detailed plan prior to starting a session. This took into account organisational demands, such as, logistics, safety procedures, and learning outcomes and anticipated situational demands, such as, weather and group needs. Any prior experiences with the group, or similar groups, in other activities, were also factored in. This plan provided a framework that tied competent OBIs logistically and emotionally to a course of action.

OBI5 commented:

I’d planned in my mind to use the bottom right-hand tier of the crag, and we got to kind of… as you come round the corner [to the venue]… and instantly I saw a group on that section I wanted to use and sort of… my heart sank a little bit because I’d sort of already in my mind planned that session for there.

Working within the plan, the OBI made adaptations during a session in response to the environment and the group, although these rarely resulted in a complete change of plan. Efforts were generally made to realign closely to a ‘plan A’. When facing a need to adapt, OBI2 felt that ‘it would have been best to go with the original… well, as much of the original plan as we could do’. The scale, depth, and attachment to the planning were consistent across all six competent OBIs. Future challenges, which would occupy cognitive space but were not of immediate importance, were put to one side. A ‘crossing the bridge when I get there’ (OBI5) attitude was adopted, although this procrastination seems unlikely to reduce the overall load.

The competent OBIs prioritised the need for adaptation primarily on the basis of safety, then on educational and logistical demands, in varying order. OBI1 explained the interaction of these factors when adapting a session:
I think it’s nice for them to feel trusted. It’s nice for me to gauge how much
[trust] they can have at this early stage. Um, yeah, I guess they were really keen
to go in for a second time. It’s again a bit of progression… the conditions, they
really are quite calm, y’know, not ebbing too much. There was what, four
members of centre staff down there; three throw bags.

A desire to remain in control of safety was central to the competent OBIs’ reasoning
in both pre-action and in-action DM. OBI2 commented:

There’s a height you could have fallen off; there’s more slippery rock that you
could slip on. It was low water levels, which was pretty safe when we were there
anyway, but I just think personally, that’s something that I would like to have
control over rather than open it up to that group.

As a result, competent OBIs explicitly prioritised safety above learning. OBI4
explained, ‘engagement with the belaying was maybe not consistent enough for it to be safe
for a prolonged period of time, even with the bell ringing, and so it ended up being a switch
to instructor-led belaying’. Furthermore, emotional safety was an important influence; OBI6
described ‘stretching them, but not pushing them too much today because I want them to have
fun and not be fearful’. This suggests that safety (physical and emotional) was a priority and
a conscious part of these competent OBIs’ DM. As such, this preoccupation may reduce the
number of other factors that the competent OBI can manage simultaneously (span of control).

Competent OBIs demonstrated a desire for cognitive efficiency in in-action DM by
utilising past experience and community of practice. OBI3’s comments show a pattern
matching, naturalistic style of DM: ‘I think it was more from my actual experience of doing
very similar work with similar age groups in similar environments’. As highlighted earlier,
the use of heuristics also supports to the notion of efficient naturalistic DM (Klein, 2015).
These competent OBIs were managing many elements and wanted their cognitive energy to be spent wisely. DM was enacted with the goal of taking up as little resource as possible, potentially to free up cognitive space to manage a larger span of control.

4.3.2.2. Metacognition. Metacognition allows for deep self-awareness – key for competent OBIs to balance the situational demands with their own ability when making decisions. The competent OBIs understood how their philosophies and values impacted their DM, highlighting an aspect of this metacognitive ability. Their ability to articulate this, however, may not yet correspond. OBI5 described this mismatch: ‘You do something, and I can’t always maybe articulate why I have chosen that, but I know the factors and it’s led me to that’. This metacognition appeared to be supported by the level of experience and reflective skill that each competent OBI possessed, thus strengthening their adaptability and ability to manage the situational demands. Competent OBIs demonstrated an understanding of their DM processes, however, the level of metacognition, or at least the ability to articulate it varied. For example, while some could describe in detail how they would act in a hypothetical scenario, others such as OBI5 explained, ‘I don’t think that’s describable. I don’t think that’s… I really don’t think that I can say that now’.

A high value was placed on reflection, with these competent OBIs predominantly utilising a reflection-on-action (Schon, 1983) approach. They had either reflected on the session prior to the interview (often using someone from their community of practice as a critical friend; Costa and Kallick, 1993) ‘we actually chatted about it later, on the way back, and realised that that wasn’t really an option’ (OBI3), or, were actively reflecting on the session during the interview, likely prompted by the increasingly metacognitively challenging questions. During the interview OBI1 reflected as follows:

Um, yeah, I guess a little bit of it… it is just a little bit of routine. That’s what I pack for on a Monday. Um… And thinking about it, maybe I should think a bit
more [about] why I am choosing that activity, ’cause you know our whole week is set out with ‘why’… y’know, I wouldn’t go to rocks… y’know… you think about what you’re doing, whereas maybe on a Monday, it is a bit routine.

These unfinished trains of thought display OBI1’s cognitions mid-reflection, recognising the situation and consequently increasing their self-awareness. With reflection playing such a large part of the organisational culture within OBT, these OBIs may have been particularly open to, or practised at it.

The individual characteristics of each competent OBI (skills, experiences, values, epistemology, and personality) must also contribute to their thought processes and, therefore, their adaptability. Competent OBIs’ professional practice was underpinned by their epistemology (supported by L. Collins et al., 2014; Sinfield et al., 2019; Taylor and Garrat, 2010). There were several shared themes across their epistemologies: the desire to do a good job, ‘What can we do in that half an hour to get the best value for the young people?’ (OBI4); valuing progression, ‘It means we can build up to bigger things, so they’re more likely to push themselves’ (OBI6); trust, ‘Building that rapport and trust is really important so they feel safe and so they can enjoy it’ (OBI6); and valuing challenge by choice, ‘The rest stayed climbing to continue to push themselves a bit more’ (OBI3). The continuity amongst these competent OBIs’ values and epistemologies suggests that they may have been developed through shared training or experience.

4.4. General Discussion

Expert outdoor instructors were found to be more adaptable than the competent OBIs, however, the competent OBIs did demonstrate adaptive capacity. This may be a result of the need to acquire practical skills in adventure activities (which demand adaptability to participate safely) prior to practicing as an outdoor instructor, at any level. Additionally, the adaptive variances may have been due to differences in the types of organisations in which
the expert outdoor instructors and competent OBIs worked, or the cultures within those organisations. These findings certainly raise a question about how AEx can be developed and nurtured in OBIs, one which I discuss in Chapter 7.

Competent OBIs constructed predominantly fixed plans and had an emotional investment in these, adjusting delivery style rather than the session structure. This emotional response suggested that these OBIs may be utilising heuristics; however, these heuristics were based on narrow experiences and were therefore limited. The competent OBIs appeared to account for these limitations, although perhaps implicitly or unintentionally, apparent their reluctance to adapt plans in-action. These findings would appear to support the assertions of Kahneman and Tversky (1974), McCammon (2001), and Simon et al. (2017) confirming that commitment, consistency, scarcity, and familiarity heuristics were evident in these competent OBIs DM. By having much of their session pre-planned, competent OBIs reduced the number of unknowns they had to manage while operating in dynamic environments, and consequently reduced the demands on their working memory to manage their cognitive load. This cognitive capacity then allowed them to better manage the many in-action situational and organisational demands. Yet, the antithesis is that the relatively fixed plans reduced adaptability. Potentially, a greater ability to recognise and efficiently manage these ‘unknowns’ via the development of greater situational awareness (Endsley, 1997) would support this, however this requires further research.

While still developing and gaining experience, it seems that for these competent OBIs, making plans that accounted for some variables helped manage some situational demands. Whether instigated by the individual or by organisational requirement, was unclear. However a framework plan of classical DM working with the nested decisions that characterise PJDM subsequently helped to maintain the span of control (Pierce, 1991). The framework was created prior to the session, then, when in the hyperdynamic environment,
adaptation and change were applied within that framework. Although competent OBIs were working to manage the situational and organisational demands, their ability to determine the significance of these demands was limited. They did not filter information on the basis of a nuanced situational assessment (perception, comprehension & projection; Endsley, 1997), instead considering all available information regardless of relevance or significance. Consequently, competent OBIs spent time appraising all nuances of a situation, some options being highly unlikely which, subsequently, was cognitively demanding. The effect limited their level of adaptability in the field. Competent OBIs found creating multiple solutions to novel or complex (but unlikely) problems difficult, therefore requiring conscious effort and time. OBI6 commented, ‘with the nature of the route, it’s quite difficult to pursue many other options’. Essentially, the combination of over planning (plus the associated sunk cost fallacy, [Arkes & Blumer, 1985] and emotional attachment) and a cognitive overload (by considering too many factors and options) limited the competent OBIs’ AEx.

In this situation, the competent OBI felt obliged to adhere to many aspects of their plan (partially organisational demands, but also the emotional attachment to the plan). A consequence of managing a large amount of information (a result of the lack of filtration), was that in-action reflection would add to this load and was, therefore, not prioritised: a potential coping mechanism which focussed the OBIs’ attention on the immediate stimulus-driven processing (Corbetta & Shulman, 2002). In addition, an element of this preference for on-action reflection may also be ascribed to the reflective culture within the educational ethos of OBT.

Despite their diversity in experience and qualifications, all competent OBIs demonstrated sophisticated epistemologies and evidenced that they were metacognitively active. Although often included in the definition of AEx, Carbonell et al. (2014) suggest that there is only partial support for metacognition to be included as an element of AEx over
routine expertise. For these competent OBIs, however, metacognition played a key part in their AEx, supporting their self-awareness, situational awareness and thus their ability to adapt in the hyperdynamic environment. I therefore suggest that to progress in both professional and recreational capacities in the outdoors, reflection and metacognition must be learnt early. Ideally, through a combination of personal activity, the community of practice, and formal or informal education or training. If this is the case, it prompts the question of if these skills require explicit teaching, or simply need refining to allow competent OBIs to operationalise their epistemological view?

4.5. Chapter Summary

The outdoor instructors in this study operated on a spectrum of AEx, including the competent OBIs who held characteristics of AEx, although to a lesser extent than the more highly qualified and experienced ‘expert’ outdoor instructors.

The competent OBIs created detailed plans to which they felt emotionally attached, limiting their adaptability. Whilst they aspired to make decisions based on providing the best learning experience for their groups, competent OBIs were often preoccupied with safety; managing this preoccupation and the situational demands resulted in a high cognitive load. The competent OBIs, therefore, used cognitively efficient strategies. A dual process of naturalistic DM nested within classical DM (a PJDM approach) helped to manage the span of control, supported by their varying levels of metacognition. Regardless of their level of expertise, sophisticated epistemologies underpinned competent OBIs practice, indicating that some similarities between the competent OBIs and expert outdoor instructors may already be implicitly trained.

AEx has been shown to be a spectrum which can be built on and was the prominent form of expertise for both these competent OBIs and the expert outdoor instructors. The implied gap in adaptive capacity between the competent OBIs and expert outdoor instructors
could therefore be bridged by a focus on AEx through training as a goal of development. Consequently, further investigation into the earlier stages of the developmental journey in OBIs’ PJDM is paramount. Accordingly, two key questions are considered in the next Section: (1) What are the key components of mid-career OBIs’ PJDM in the field? And (2) how have they developed these PJDM skills? This will be the focus of Part 2 of this thesis.
Part 2

Part 1 of this thesis considered the need for further research into the PJDM of OBIs, offered background and contextual knowledge, followed by a preliminary study looking at the prevalence of AEx across outdoor instructors. Chapter 4 examined AEx as a type of expertise for competent and expert outdoor instructors, finding that AEx was an essential attribute of the outdoor instructors’ practice, with PJDM a key component of AEx. All outdoor instructors took an AEx approach, although differing levels of adaptability were identified between the competent OBIs and expert outdoor instructors. The outdoor instructors, operated on a spectrum of AEx. The more adaptive the outdoor instructors were, the more flexible they were able to be, both in pedagogy and technical skills to manage safety. The study provided much needed insight into the end goal for OBI development: to be a flexible and adaptive expert. Part 2 therefore, looks more closely at OBIs’ PJDM, in the context of AEx.

As discussed in Chapter 2, little is understood about the journey to becoming an adaptive expert, particularly among outdoor instructors. However, facilitating the development of instructors’ PJDM is an essential factor, as highlighted in Chapter 4. Part 2 looks specifically at early-career and mid-career OBIs, studying and contrasting their developmental journeys. In other words, to successfully ‘connect the dots’ between novice and expert, the ‘dots’ must first be identified and understood. Following this, a consideration of how successfully to move from one ‘dot’ to the next is required. Consequently, Part 2 will present two

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1 As described in Chapter 3, outdoor instructor is the term used for leaders, coaches, teachers and guides in the adventure education domain. Outdoor instructors who are employed by OBT are abbreviated to OBIs. OBIs will be differentiated as early-career OBIs and mid-career OBIs where appropriate.
investigations into the components and development of PJDM, firstly in early-career OBIs’ (Chapter 5), and secondly in mid-career OBIs’ (Chapter 6) PJDM. Subsequently, Chapter 7 discusses a comparison of early and mid-career OBIs’ PJDM, and hypothesis for a potential approach to OBIs’ PJDM development.
5. Exploring Early-Career Outward Bound Instructors’ Professional Judgement and Decision Making, and its Development: ‘Safety was always in the back of my mind’

This Chapter explores two questions: (1) What are the key components of early-career OBIs’ PJDM in the field, and (2) how have they come to develop these PJDM skills? Firstly, this Chapter reviews the components essential to PJDM and AEx in OBIs, highlighting the current gaps in knowledge. The Chapter then describes the research process, presents the results, and finally discusses the implications relative to the research questions.

5.1. Professional Judgement and Decision Making and Adaptive Expertise

As highlighted in Chapter 2, there is a significant amount of literature surrounding experts and their DM. Chapter 4 distinguished the type of expertise required by outdoor instructors, and identified that although not considered experts, competent OBIs operate on a spectrum of AEx. However, the competent OBIs were adaptable to a lesser extent than expert outdoor instructors. The need for AEx was necessitated by the hyperdynamic environments outdoor instructors often face (Tozer et al., 2007), raising the possibility of an initial inherent development of some AEx skills (Pulakos et al., 2009). However, thus far there has been little discussion about the early-career OBIs and mid-career OBIs who may not be considered ‘expert’, but equally operate in conditions that demand adaptive skills and a PJDM approach.

Endsley’s (1995) widely accepted three levels of situational awareness, perception, comprehension, and projection, are essential to AEx (Hanson et al., 2005) and therefore DM, in these hyperdynamic environments.

Additionally, expertise is contingent on declarative (the what), and procedural (the doing) forms of knowledge (Anderson, 1983), which lie at the heart of the options available to the outdoor instructor. However, both are operationally dependent on conditional
knowledge (the why) (Abraham & Collins, 2011a) derived from the context via a high degree of situational awareness. In Chapter 4, the situational awareness of the competent OBIs appeared limited by a cognitive overload produced by detailed planning, and, an attempt to comprehend and project all factors in the environment. The detailed planning was exacerbated by the need to manage their span of control (Pierce, 1991). As OBIs develop, they will work in increasingly dynamic environments, therefore requiring greater AEx. Developing better situational comprehension, PJDM, and its associated skills appeared to be vital.

5.2. Developing Professional Judgement and Decision Making and Adaptive Expertise in Outward Bound Instructors

Experiential learning theory (Kolb, 1984) indicates that PJDM may be developed by reflection on experience (Klein, 2015), likely in an experiential learning model which involves the environment, activity, senses, emotions, cognitions and a change in the self (Beard, 2016). However, there is limited understanding surrounding the specifics of this process among early-career OBIs (Enoksen & Lynch, 2018). Aadland et al. (2017) offer a decision support tool for the development of risk based DM skills in sea kayaking, in the form of a process-driven checklist for use prior to, and during, sea kayaking journeys. The intention being to encourage experiential learning by supporting reflection and directing individuals to work through a situational awareness process. The tool, however, was reportedly too complex for novices to utilise. Novices’ inability to perceive and therefore comprehend and project the contextual factors – a lack of situational awareness even at the lowest level – excluded them. Aadland et al. highlight the need for something simpler. However, for experts, who had higher levels of situational awareness, the tool was also of limited value, they had already assimilated the information and were engaged in situational awareness. Such tools may, therefore, have a place in
developing the skills of those who are between novice and expert: mid-career outdoor instructors. It is these mid-career outdoor instructors who are in most need of evidence-based development. However, they are also those who have previously received the least attention, left to develop their PJDM and situational awareness skills in an ad-hoc manner (L. Collins & Collins, 2013).

Furthermore, Chapter 4 proposed that OBI training should consider a pedagogic approach that facilitates the development of agility and adaptability in OBIs, through intentionally focused reflection on developing AEx. Supporting the assertions by Tozer et al. (2007) based on theory elaboration (Braxton, 1999), that AEx could be developed through practice, reflection, and ‘good thinking’ (Perkins et al., 1993). Existing insight into the progression from novice to expert in outdoor instructors (Galloway, 2002; Shooter & Furman, 2011) is minimal, lacking detail, direction and practical implications. Given the intricacies of PJDM, there must logically be many more factors, and significantly more detail concerned with its essential development between novice and expert. Nonetheless, Chapter 4 confirmed that OBIs operate on a spectrum of AEx and work within a PJDM framework. A clear direction towards an end goal – becoming more adaptive. There is, however, a need for a greater understanding of how to facilitate development towards AEx for OBIs (Barry & Collins, 2021).

Consequently, this Chapter considered two questions: what are the key components of early-career OBIs’ PJDM in the field, and how have they developed these PJDM skills? The findings inform future approaches to OBI development and evaluation.

5.3. Method

Thematically analysed semi-structured interviews were employed in this study to elicit breadth, richness, and depth in participants responses (Braun et al., 2019). The intention was
to generate findings rooted in the experiences of the participants, and to offer real-world implications for the development of PJDM in early-career OBIs.

5.3.1. Participants

Participants in this study were active early-career OBIs (N=9) aged between 22 and 35 years (M=26, SD=3.1), working in OBT’s centres in the UK. Three female and six male early-career OBIs participated, representative of OBT’s gender ratios at that time, 27% female (O’Brien & Allin, 2022). Participants voluntarily self-selected for the study based on the criteria described in Chapter 3, and as only having between 1 and 6 years of experience working as an outdoor instructor since gaining initial national governing body qualifications.

5.3.2. Procedure

An interview guide was designed using (D. Collins & Collins, 2020) ‘Big 5’ questions as an initial basis to explore participants DM and gain insight into their development. A cognitive pilot was conducted (Willis, 2005) with a representative sample of early-career OBIs who also met the criteria above (N=3). As a result, four questions and prompts were refined (alterations made to question wording, additional prompts, and the addition of an option to revisit another decision point) resulting in the semi-structured interview guide, presented in Table 5.1.

Following consent, participants were observed instructing day long sessions of adventurous outdoor activities such as gorge walking, mountain scrambling or canoeing, with groups of young people between the age of 10 and 25 years. The purpose of these sessions was personal development, as described in Chapter 1, and each session was one of 5 days in a progressive programme. The observation enabled comprehension of the early-career OBIs working context and assisted in selecting an appropriate aspect of the session as the basis for the interview.
Table 5.1. Semi-Structured Interview Guide

<table>
<thead>
<tr>
<th>Question</th>
<th>Prompt/Probe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tell me about your session…?</td>
<td>Group</td>
</tr>
<tr>
<td>Background</td>
<td>Weather</td>
</tr>
<tr>
<td>Aims</td>
<td>Activity</td>
</tr>
<tr>
<td>Pre/post/during considerations</td>
<td>Logistics</td>
</tr>
<tr>
<td>Plan</td>
<td></td>
</tr>
</tbody>
</table>

Using the decision points identified above/regarding the decision you made:

- How did you come to that decision?
- What factors influenced your decision/did you consider?
- What were you aware of at that point?
- What are you looking for/noticing?
- How did you know that your decision would be appropriate?
- What told you to make that decision/to do that?
- How have you learnt that?

Using the decision points identified above/regarding the decision you made;

- What other options were available to you?
- Were there any other options that were unavailable to you?

For each option…

- What factors would make you choose/avoid this option?
- How would you know it was the right option?

Is there anything else that was significant to you at that time which we haven’t gone into?

Prompts as before if so.

Interviews were conducted as soon after the session as practical generally later the same day, but with no more than a 20 hour gap. At the beginning of the interview each participant and I mutually agreed on a specific situation and decision from their session, the participant then described this, and it was used as the basis for the interview. Data were
digitally recorded using a Dictaphone. Interviews lasted between 27 and 55 minutes ($M=36$, $SD=8.22$).

5.4. Analysis

Data were analysed through an inductive reflexive thematic analysis (Braun & Clarke, 2021) as discussed in Chapter 3 (language later updated to reflect Braun and Clarke, 2022). Unique identifying codes (Robson & McCartan, 2016) were assigned to ensure each participant’s anonymity and avoid deductive disclosure (e.g., ECI1).

5.5. Results

Two overarching themes, five themes and fifteen subthemes were identified in the analysis (Table 5.2). Following a description of the context, each theme is presented separately in relation to the research question and supported by quotations.

5.5.1. Managing the Cognitive Load

Early-career OBIs described a variety of situational demands (environment, group, resource, and self) and ways in which they managed these. Safety was identified by early-career OBIs as a priority and needed to be maintained as each situation evolved. The process of managing situational demands, maintaining safety, and facilitating learning in each hyperdynamic environment meant the early-career OBIs were often operating with a high cognitive load, and developing strategies to maintain this load at a manageable level. Each of these themes are presented individually below, however this interdependent nature is demonstrated in the thematic map (Figure 5.1).
### Table 5.2. Thematic Table Showing Overarching Themes and associated Themes and Subthemes of Early-Career Outward Bound Instructors’ Decision Making

<table>
<thead>
<tr>
<th>Overarching Theme</th>
<th>Theme</th>
<th>Subtheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing the cognitive load</td>
<td>Situational demands</td>
<td>Environmental demands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Availability of resources</td>
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<tr>
<td></td>
<td></td>
<td>Self-awareness</td>
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<tr>
<td>Safety</td>
<td></td>
<td>Physical safety</td>
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<tr>
<td></td>
<td></td>
<td>Psychological wellbeing</td>
</tr>
<tr>
<td>Social experiential learning</td>
<td>Formative experiences</td>
<td>Being challenged</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purposeful practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Variety of experience</td>
</tr>
<tr>
<td>Community of practice</td>
<td></td>
<td>Formal coaching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Informal coaching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use of questioning</td>
</tr>
<tr>
<td>Metacognition</td>
<td></td>
<td>Reflective practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ad-hoc opportunity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increase in self-awareness</td>
</tr>
</tbody>
</table>
Figure 5.1. Thematic Map (Braun and Clarke, 2020) Demonstrating the Interconnected Nature of the Themes and Sub-Themes within the Overarching Theme ‘Managing the Cognitive Load’
Early-career OBIs typically described their PJDM as more analytical in low demand conditions (fewer variables, familiar environments, lower consequences), whereas high demand ‘naturalistic’ conditions (many variables, higher consequences) caused greater cognitive demand. The latter necessitated a more naturalistic DM approach (L. Collins & Collins, 2019a). The balance in using naturalistic and classical DM was flexible, particularly in-action, and certainly increased the early-career OBIs’ cognitive load. OBIs cognitive load was also impacted by additional pressures presented by the situational demands, as ECI8 described: ‘You might not make the correct, or the same decision that you’d make under normal circumstances’. This suggests that early-career OBIs’ PJDM process may be sub-optimal when there is a high degree of situational demands. Early-career OBIs’ awareness of this potential impact of situational demands on their PJDM process, their metacognition, shows an ability to make judgements on the level of safety and level of risk they were willing to accept. ECI9 commented:

If I feel something’s dangerous or potential to cause a serious issue, then I will step up. That’s where I will draw the line. So, like, I’m happy for their day to not go as strongly as I thought it could go, but I draw the line at safety.

To minimise additions to cognitive load, early-career OBIs used heuristics in their PJDM, for example, ‘if something doesn’t feel right it probably isn’t’ (ECI2). Practiced schemas were also used to reduce cognitive load, increasing capacity to manage other situational demands. These schemas are demonstrated in early-career OBIs recognition of a norm, ECI2 explains: ‘Today’s session wasn’t like a normal session’. Seemingly, as early-career OBIs’ skills and confidence increased and cognitive load in the environment decreased, they began to deviate from these practiced schemas, embracing adaptability and flexibility within safe parameters. ECI9 described this progression:
I think if I was very new, like first year, I think I would have been very on it with… all like crossing the T’s dotting the I’s kind of thing… as I get more comfortable with venues, more comfortable in those environments, with the centre as well, and all that kind of stuff I feel like you know where you can relax it a bit while still keeping it safe.

This modification of schema is a further indication of the early-career OBIs’ metacognition. Reflecting its emerging significance, metacognition is examined in greater detail later.

5.5.1.1. **Situational Demands.** Early-career OBIs’ situational demands existed in four co-dependent domains: (1) the environmental demands (e.g., weather, venue, situational awareness) ‘the tide and the wind were going in the direction we wanted it to go in the end, but it was too strong for us just to do the journey’ (ECI3), (2) the group needs (e.g., group dynamic, physical needs, learning needs) ‘the needs of the group and the needs of themselves, in reality, was that we needed to get ourselves off that hill’ (ECI4), (3) the availability of resources (e.g., organisational parameters, co-workers skills, logistics) ‘with the buses we had, we couldn’t have got [there]’ (ECI2), and (4) self-awareness (e.g., ability, adaptability, pedagogy) ‘let them make mistakes, we’ll just stop them at the last safe moment, because I think that’s better’ (ECI8). These factors acted in synergy. To optimise the experience for the group, for example, the early-career OBIs’ choice of venue was influenced by the weather conditions and the learning objectives. These decisions appeared also to be influenced by the OBI’s individual pedagogy, philosophy, and ontology – their epistemological chain in action (Barry et al., 2023), as indicated in ECI8’s earlier comment that learning is a result of making mistakes. Simultaneous comprehension of the situational demands, the manner in which they interact, and an ability to foresee implications was essential to OBIs PJDM and allowed OBIs to anticipate, and make in-action decisions, about
future plans. However, it added considerably to cognitive demands, which increased the early-career OBIs’ cognitive load.

All early-career OBIs described some kind of recognition (Klein, 2004), or ‘gut feeling’ (ECI2), which informed their PJDM: a heuristic developed through experience and reflection (Klein, 2015). ECI7 described: ‘The feeling that you get. Sometimes you just know when you know’. The unconscious use of heuristics by early-career OBIs suggests an innate tendency toward this style of PJDM, to reduce cognitive load. Or, as part of a dual process, supporting the assertion of a PJDM approach. However, if not developed through reflection on a broad and deep range of experiences, heuristics can undermine PJDM process (Klein, 2008; S. Simon et al., 2017).

Pre-session decisions were often based on early-career OBIs’ predictions of how forecasted conditions would manifest in each environment; however, a disparity between actual conditions and early-career OBIs’ predictions was often evident, ECI1 described:

I didn’t realise how strong the wind was and how big the tides were, erm, ‘cause the boats were bobbing up and down and flying around, so yeah ‘til I got there I didn’t realise how much of a factor that would be… I tried to plan it but like with most things it changes once you get there and see what’s actually happening.

This indicates early-career OBIs’ ability to contextualise information (e.g., how a weather forecast will affect a specific environment) may still be developing. Consequently producing a potentially avoidable increase in cognitive load, while also highlighting a weakening of the potential heuristic.

5.5.1.2. Safety. Eight of the nine early-career OBIs identified safety as the most significant factor in their DM and reported a sense of constant awareness and consideration of safety. ECI8 recounted: ‘Safety was always in the back of my mind’. Beyond
this desire to maintain and control safety however, early-career OBIs demonstrated a more sophisticated judgement in accepting a level of risk to facilitate meaningful learning. ECI6 described: ‘when I make decisions, I’m definitely conscious of the idea of risk versus benefit’. Although some options were considered unsafe and immediately disregarded, decisions that supported early-career OBIs to judge the level of risk against feeling in control of safety, and create authentic learning opportunities, were preferred. However, a perfect balance of these factors often felt impossible. ECI7 described the difficulty in handing over some leadership to group members for their development, while also maintaining control of the safety: ‘I didn’t wanna step on Josh’s [a group member who was taking a leadership role] toes because he was doing a great job, but then I was also aware of people moving and I didn’t have my eyes on them’, instead settling on an acceptable, rather than optimal, solution.

In increasingly dynamic environments, early-career OBIs’ PJDM focused on manipulating the situational demands to a degree that they felt able to manage. ECI3 explained:

We decided to put them in two diamond rafts, and then basically me and the other instructor then kind of had control of them both, relatively, as long as they paddle a little bit we can move them where we want them to go.

Here, ECI3 reduced their span of control by grouping boats together into only two units, reducing their cognitive load and thereby increasing safety.

5.5.2. Social Experiential Learning

Throughout early-career OBIs’ descriptions of their professional development, the common narrative was of learning through experience, particularly within a community of practice. Metacognition allowed early-career OBIs to reflect on their experiences, understand thought processes, construct new declarative knowledge. These early-career OBIs then utilised this
knowledge in-action as a basis for their PJDM, and to purposefully support their own development. As with the components of PJDM, the relationships between these themes are complex, and are best shown in the thematic map (Figure 5.2).
**Figure 5.2.** Thematic Map (Braun and Clarke, 2020) Demonstrating the Interconnected Nature of the Themes and Sub-Themes within the Overarching Theme ‘Social Experiential Learning’
Early-career OBIs described two types of experiences which helped them develop their PJDM: those that they found challenging, and those in which they reflected on their emotions, both positive (e.g., success) and negative (e.g., failure, or near miss). These experiences were reflected upon (critical incident analysis; Tripp, 2012), as ECI5 described ‘thinking about the emotions during that time’, identifying self-awareness.

Alongside these formative experiences, working within a supportive and knowledgeable community of practice was highlighted as key to PJDM development: formal coaching (e.g., intentional training, mentors) and informal coaching (e.g., impromptu discussion, advice). These interactions supported early-career OBIs both in-action, and in their pre-session DM. By constructing learning experiences, modelling, and challenging each other’s cognitive reasoning, early-career OBIs developed their metacognition and consequently PJDM. Using a range of metacognitive skills early-career OBIs enabled themselves to not only reflect on their experiences and thus develop PJDM, but also to consider and analyse this development and its efficacy.

5.5.2.1. Formative Experiences. ‘Trial and error in the past’ (ECI1) was the initial aspect of development to which every early-career OBI attributed their current skills. However, thinking more deeply than this to identify the experiences they had learnt from was difficult for these early-career OBIs, requiring considerable probing during the interview. This difficulty implied a tacit development of some declarative knowledge and was likely not something these early-career OBIs had previously reflected on. The key past experiences could be categorised as: personal outdoor experience, professional outdoor experience, and non-outdoor experience: ‘It’s a bit of life experience, it’s a bit of on the job experience’ (ECI8).

Early-career OBIs’ metacognition supported deep learning through these experiences, and, transfer of the resulting knowledge to new contexts. Purposeful practice in varied
authentic contexts was important to OBIs in developing PJDM, and was sought out personally and professionally. ECI1 described: ‘Putting myself in the middle of the estuary in different weather conditions, different tide ranges, and seeing how it reacts’. Engaging with DM in authentic environments promoted development of complex environmental knowledge required to make good decisions. Within safety parameters and their existing skill level, and supported by metacognitive skills, early-career OBIs learnt from situations where they were challenged to make difficult decisions. These situations provided opportunity to assimilate previous procedural and declarative knowledge and operationalise new knowledge, in turn, developing adaptable PJDM.

Early-career OBIs acknowledged that, although they ‘learn by doing’ (ECI8), sometimes ‘it’s just having the confidence to give it a go’ (ECI1). OBIs described a need to identify and address weaknesses to gain the confidence to practice their PJDM skills in-action, within the context of their current ability. ECI2 explained their attention to their weaker areas, practicing purposefully: ‘So if it’s in a location I’m not so familiar with I’ll be... seeking it out, just because I wanna learn as much as I can for the next time I do it’.

Early-career OBIs’ intention to improve and progress is highlighted by this search for challenge.

5.5.2.2. Community of Practice. Declarative knowledge which informed PJDM was largely socially constructed. All early-career OBIs noted receiving formal coaching with more experienced OBIs at the beginning of their career, an opportunity understood by early-career OBIs, to gain new ideas and develop confidence. ECI5 explained: ‘I suppose the time that I’ve had with OB so far, and the amount of coach or shadow weeks that I’ve had... has given me the confidence to make those decisions’. Gaining national governing body qualifications (a prerequisite to independent work as an OBI) involves formal training, a consolidation period, followed by an assessment. However, while ECI6 described
‘I think the learning through qualifications gives you the confidence to then go out and get that experience’, no other early-career OBIs mentioned the national governing body qualification process as a feature of their PJDM development.

In addition to formal coaching, a range of pivotal informal coaching experiences were highlighted by early-career OBIs. This informal coaching was mostly unplanned, for example, observing other OBIs’ practice ‘I suppose seeing other people make those decisions and discussing that with them’ (ECI5), asking questions of other OBIs ‘why have you done it that way? What’s the reason behind doing it that way?’ (ECI2), or when advice was volunteered ‘[another OBI] suggested to me, have you tried whispering?’ (ECI4). The community of practice played an important role in supporting early-career OBI development, intentionally or otherwise, by modelling, coaching, giving feedback, questioning, and articulating their own cognitive processes.

Despite informal coaching being valued by early-career OBIs in their development, its importance was not apparent in its nature, as described by ECI1: ‘That’s something I’ve just picked up along the way from working with [other OBIs]... it wasn’t intentional, I wasn’t like “oh I’m observing this” it’s sort of just in the back of your head’. The unintentional nature of this learning meant that the onus was on early-career OBIs to recognise and capitalise on the opportunities, and required a level of prior knowledge. ECI5 explained: ‘I used the knowledge that I already had and questioned them as to why they did what they did’.

5.5.2.3. **Metacognition.** Although metacognitive ability varied, it was evident in all early-career OBIs. Early-career OBIs demonstrated an understanding of PJDM as a vital skill and therefore their ability to recognise and prioritise development of those skills, as ECI4 explains: ‘Something I prided myself on was making good safe decisions’.
Generally, early-career OBIs were relatively articulate in describing their decisions, suggesting a high level of metacognition surrounding their knowledge relating to the decision itself; ECI5 explains:

I’ll think back to what worked well for certain expeditions, and what age group that group was, and why that route worked for them, and why it might work for this group, given the things that I can see in front of me.

This ease in explanation also implies that early-career OBIs’ PJDM was generally conscious, or consciously checked at least. In contrast, conveying how and why their PJDM had developed was difficult for early-career OBIs. ECI7 commented: ‘How have I learnt that?... Well… it’s probably from doing it so much’, and ECI5 described ‘none that I can think of right now but thinking about… there will have been factors’. These long pauses and vague answers revealed early-career OBIs’ difficulty and highlight the difference in their understanding surrounding their PJDM development, and their PJDM itself. This supports the implication of metacognition, which varied across the early-career OBIs, as a purposeful aspect of OBIs’ PJDM development.

These early-career OBIs further identified that deliberate reflection was key to the development of their PJDM, however this was executed with varying degrees of ease. ECI1 described: ‘I’m good at making the decisions, but then when people ask me why, I can’t explain it’. Contrastingly, ECI9, the most experienced of the early-career OBIs interviewed, noted: ‘I think it [reflection] starts to happen quite naturally now’ inferring that as experience increases, reflective skills may improve also, if unwittingly. All early-career OBIs recognised their reflection, and reported a variety of styles; some valued using ‘critical friends’ (ECI4), while others preferred to be ‘reflective in my head’ (ECI5). Several OBIs also described
reflection as ‘just ingrained in myself’ (EC19) or ‘just something that I do naturally’ (EC16) demonstrating the integrated nature of reflection in their practice.

The early-career OBIs’ reflective practice supported the development of declarative knowledge surrounding PJDM, which developed metacognition, supporting their PJDM across contexts. ECI2 explained:

Things can look logical, but then when you look at it in a broader sense it becomes: actually, that might be dangerous to do it in that way. So, knowing the ‘why’ and the ‘how’ in a bit more detail means it’s more likely to be safe.

5.6. Discussion

This Chapter set out to identify the key components of early-career OBIs’ PJDM, and how they have developed their PJDM skills. The complex relationships between the themes identified (situational demands, safety, formative experiences, community of practice, metacognition) show that early-career OBI PJDM, and its development, is multifaceted.

Moving forwards, a deeper understanding of the continued progression of PJDM must be gathered to understand how we can best facilitate professional development for OBIs.

The early-career OBIs held a student-centred pedagogy and a sophisticated epistemology which appeared to be promoted by the dynamic environment (Christian et al., 2019). Early-career OBIs wanted their DM to be based predominantly on the needs of the learner in that environment, even if that was not always possible within their current skill set.

Early-career OBIs were also less able to articulate the meta process, compared to expert adventure sports coaches (L. Collins et al., 2016). As such, the active development of metacognition may be important in OBI development. Similarly, Chapter 4 showed those OBIs to be metacognitively active, but to a lesser extent than expert outdoor instructors, suggesting that whilst not yet experts, the early-career OBIs in this study are working on the
spectrum of AEx. Managing all situational demands simultaneously required a capacity to comprehend them and project their future state: Endsley’s (1995) levels of situational awareness could possibly be applied to situational demands, though this requires further investigation. A failure to fully comprehend the situational demands, for example the group needs, learning objectives, and organisational constraints, would hinder the flexibility of early-career OBIs PJDM.

Early-career OBIs created highly structured and detailed plans (supporting findings by Boyes et al, 2019) informed by resource availability and learning outcomes, prior to entering the environments that necessitated a naturalistic DM approach, mirroring Collins and Collins (2016b) resource audit and pedagogic audit. This detailed planning and desire to stick as closely to the original plan as possible was owing to, I suggest, both the early-career OBIs level of experience, and the demands and expectations of their organisation. As a consequence of these detailed plans, early-career OBIs were able to maintain their cognitive load at a manageable level. However, their plans also typically reduced their potential to adapt in-action, noted in Chapter 4, likely accounting for why these early-career OBIs described feeling their choices were limited. Early-career OBIs’ ability to manage the situational demands suggests that in most cases, they held a balance between goal-directed and stimulus-driven attentional systems (Corbetta & Shulman, 2002). However, their cognitive overload at times, indicates that their attentional control became overly stimuli-driven, resulting in an inability to adapt, or reluctance to depart from their original plan. The schemas and heuristics used by early-career OBIs, however, did appear to reduce this cognitive load. Effective heuristics were developed with experience, and as in Chapter 4, the transferability of that experience was significant. While early-career OBIs may work across a range of activities, the leadership and group working aspects of the situational demands may be more readily transferable, suggesting a meta process.
Equally, individuals are required to be skilled in the adventurous activities prior to becoming outdoor instructors. It seems likely that personal experience is also a significant factor in developing PJDM. Though requiring further investigation, this practice and experience outside the workplace should not be underestimated by OBT, or OBIs, as an aspect of development.

Expert outdoor instructors avoid disparity between predicted and actual conditions by using their large accumulations of experience through a set of heuristics, thus managing their cognitive load (L. Collins & Collins, 2019a). These early-career OBIs, however, were still building this catalogue of knowledge. Encountering conditions which were not as expected is a potentially stressful situation (Lazarus & Folkman, 1984) which may require rapid adaptation in-action, and an immediate re-assessment of the situation (perception, comprehension, and projection; Endsley, 1997). This would therefore contribute to an acute increase in cognitive load. Boyes et al. (2019) note that even experienced outdoor instructors face situations which were not as they had envisioned. I suggest, however, that this is less likely to cause significant cognitive load in those who have developed further towards AEx. Further investigation is therefore required to discern if this aspect is related to experience or environment.

Whilst early-career OBIs’ preferences in reflective practice were specific to the individual (Moon, 2013), early-career OBIs predominantly reflected on-action, echoing the findings in Chapter 4. The high cognitive load appeared to render in-action reflection, which allows for greater AEx, unachievable. As a feature of expert outdoor instructors (L. Collins & Collins, 2019a), it is imperative that the cognitive load is managed to allow for this in-action reflection, if progression towards expertise is desired. Collins and Collins suggest this is achieved by expert outdoor instructors through a combination of heuristics, avoidance strategies, anticipation of demands, and the development of adaptable plans supported by
their community of practice. However, it remains uncertain how this can be developed in early-career OBIs.

Not only is the reflective practice (thinking about the experience) vital, it is metacognition (thinking about the thinking) which enables robust development and deep learning (Claxton, 2002). I therefore support the notion that metacognitive development should be a significant part of early-career OBI training. The current provision of training such as that provided by national governing bodies or employers, however, does not appear to prioritise this. Instead, training could, for instance, provide tools and guidance to assist in developing purposeful and intentional reflective practice, and subsequent metacognitive development. As an example, reflection appeared to be taking place as a result of the questions asked in interview for many early-career OBIs. The implication being that metacognitively challenging questions, such as those asked in these interviews, could be used to structure reflective practice as a strategy for continued PJDM development, though this warrants further investigation.

It is likely that PJDM processes are initially developed implicitly through personal outdoor experience, which may account for the tacit nature and difficulty in articulating these parts of early-career OBI processes. Alternatively, it may be that early-career OBIs’ mentors struggle to articulate their own metacognitive processes (D. Collins, Collins, & Carson, 2016), leading to less developed metacognitive skills in the developing early-career OBIs. Nevertheless, as with many skills, an element of individual difference is likely, and consequently some early-career OBIs will find this metacognitive thinking easier to develop than others. By highlighting the significance of metacognition in early-career OBI PJDM development through these findings, a greater focus can be placed on it in training, to potentially allow all OBIs to develop to an appropriate level.
Informal coaching between experienced and early-career OBIs, particularly, the process of questioning cognition, was key to developing PJDM skills, especially metacognition and situational awareness. A peer approach to development linking to aspects of andragogy, particularly that adult teaching should be collaborative (Pratt, 1988). Still, a level of prior knowledge was required to capitalise on opportunities. It seems reasonable to surmise that if the early-career OBI cannot ask the right questions, and the experienced OBI does not pass on their knowledge voluntarily, the development opportunity may be lost. To maximise the impact of these socially rooted experiences, perhaps it would be valuable for early-career OBIs to receive training in how to capitalise on time spent working alongside more experienced OBIs during the initial stages of their career. Equally, perhaps experienced OBIs could be guided in their coaching of early-career OBIs. A potential solution may be a CA approach (Dennen, 2004), which requires experts to make their thinking visible. Additionally, tools such as Collins and Collins’ (2020) ‘Big 5’ questions may be of interest to those wishing to increase their skills in developing early-career OBIs.

The reported sporadic nature of informal developmental coaching does not seem to support the substantial significance placed on it by early-career OBIs when contemplating their progression, or the wealth of research into social theories of learning (Lazarus & Folkman, 1984). Interestingly, regarding formal coaching, only one early-career OBI considered the national governing body qualification process as a feature of their PJDM development, echoing research by Sinfield et al. (2019). The lack of recognition here further raises questions surrounding explicit PJDM training within the national governing body qualification process. Other formal coaching (e.g., mentoring: Lester et al., 2011) opportunities appeared more limited, particularly once early-career OBIs had progressed from the initial stages of their development. As such, increasing opportunities for OBIs with varied experience to work together purposefully, through questioning and challenging the
others thought processes, may be of value to the continued development of PJDM. OBT, or
OBI themselves, may wish to consider how to make best use of their professional
community of practice to create opportunities to share knowledge and increase
metacognition, as a strategy for developing PJDM.

Recognising the significance of ‘challenging’ (Lazarus & Folkman, 1984) experiences
contextualises research by Kahneman and Klein (2009), who proposed high validity (real
life) experience is key to development, into an outdoor context. The importance placed on
these challenging experiences is congruent with the development of AEx (Pulakos et al.,
2009). This finding further supports the consideration of early-career OBI development in the
context of AEx highlighted in Chapter 4. Opportunities for purposeful practice in these
challenging situations, however, may not have been accessed without early-career OBIs’ self-
motivated attitude. Engaging with challenge requires effort, consequently, individuals must
want to develop, and put themselves in these conditions. Equally they require the skills and
self-efficacy (Bandura, 1977) to find the experience ‘challenging’ rather than ‘threatening’, in
order to learn and develop through these experiences. Employers would be well placed to
encourage early-career OBIs to challenge themselves, to work in unfamiliar environments,
and vary their practice purposefully to fortify their PJDM development. However, it is also
worth recalling the potentially negative impacts of cognitive overload on learning (de Jong,
2010), necessitating a careful balancing act.

Finally, I re-state that, in every example of PJDM given by early-career OBIs, safety
was considered first and foremost. A clear-cut, conscious emphasis on objective safety in
PJDM is something which has not previously been highlighted as a feature of expert OBIs.
As such, this preoccupation with safety may be a unique feature of the early-career OBI.
5.7. **Chapter Summary**

This Chapter examined the components of early-career OBIs’ PJDM and explored the development of their PJDM. The identified components in early-career OBIs’ PJDM concerned the need to manage a high cognitive load as a result of situational awareness and situational demands, and a focus on safety as primary. Early-career OBIs demonstrated some ability in manipulating these factors to manage their cognitive load. Early-career OBIs’ metacognition allowed them to develop a greater understanding and knowledge of their working context and themselves, which increased their confidence. This confidence provided enough self-assurance to engage with opportunities for purposeful practice in high validity and challenging situations. The early-career OBIs’ development to this point allowed them to make decisions and judgements whereby they balanced complex situational demands with their primary focus on safety, while using strategies to manage their cognitive load.

PJDM development for these early-career OBIs was a result of a social-experiential learning process, in particular, challenging formative experiences underpinned by metacognitive skills. There appeared to be further opportunity to purposefully use the community of practice in this development and to increase metacognition in early-career OBIs.

In light of these findings, a necessary additional study was indicated; addressing the experiences of OBIs to better illuminate the optimal development path – the next ‘stepping stone’. With much research into experts already existing, the next gap in understanding the development of PJDM was in OBIs who are both more experienced, and more qualified than these early-career OBIs, but who are not yet experts: mid-career OBIs. Therefore, the next Chapter will present and discuss research into the components and development of PJDM in mid-career OBIs.
6. Exploring Mid-Career Outward Bound Instructors’ Professional Judgement and Decision Making and its Development: ‘Doing the right thing, at the right time, with the right people, in the right place’

This Chapter explores mid-career OBIs’ PJDM and its development, mirroring the study in Chapter 5, which explored the development of PJDM in early-career OBIs. The Chapter found that for early-career OBIs managing safety was a primary focus. Alongside complex situational demands, the preoccupation with safety led to high cognitive demands for the early-career OBIs. PJDM was developed through a social experiential learning process that included challenging formative experiences within their community of practice, and crucially, a metacognitive development through this.

As a result of the practical and academic desire for an increased understanding of these mid-career OBIs, the present Chapter expands on Chapter 5 with another empirical study, asking, what are the components of mid-career OBIs’ PJDM in the field? And how have they developed these PJDM skills?

6.1. Method

Reflecting the study objective to identify and analyse the key components of DM in mid-career OBIs, and explore how mid-career OBIs have developed their judgement and DM, I adopted an inductive approach. As noted earlier, this was identical to Chapter 5.

6.1.1. Participants

A sample of mid-career OBIs (N=9, M age=40, SD=8.8) were purposively selected. Participants voluntarily self-selected for the study based on the criteria described in Chapter 3, and additionally as:

1. Employed by the OBT as a Senior OBI.
2. Between 7 and 15 years of experience working as an outdoor instructor since accreditation.

3. Holding entry level qualifications in several activities, and one or more higher level qualifications such as, Winter Mountain Leader Award, Mountaineering and Climbing Instructor (Mountain Training Association, 2023), Canoe Leader Award (British Canoeing, 2023).

4. Availability owing to work routines and COVID-19 restrictions (a convenience sample in this respect).

This sample of mid-career OBIs’ total experience ranged from 7-21 years ($M=15, SD=4.7$), and time at OBT from 3-15 years ($M=6, SD=4.5$). All participants held national governing body qualifications in multiple disciplines ($M=4, SD=0.8$) and had multiple sign-offs to lead within OBT, with at least one higher level qualification, their activity area of expertise. Additionally, six of the nine participants held a higher-level academic qualification in adventure education (e.g., an undergraduate degree). All participants were white British males. The impact of Covid-19 reduced the number of OBIs active at the time of the study, in particular female mid-career OBIs. However, the sample included mid-career OBIs from three of the four OBT centres in the UK.

6.1.2. Procedure

Following ethical approval and participant consent, a cognitive pilot was conducted with a representative sample (Willis, 2005) of mid-career OBIs ($n=1$) to establish the study was equally appropriate for the different sample. No changes were made to the protocol used in Chapter 5. An identical interview guide was therefore used (Table 5.1). Interviews lasted between 29 and 61 minutes ($M=43, SD=14.16$) and were digitally recorded using a Dictaphone for later transcription.
6.2. Analysis

Data were analysed in an identical manner to the study presented in Chapter 5. Naturally, the findings regarding early-career OBIs were acknowledged prior to analysis, however in line with the reflexive thematic analysis, could not be fully bracketed. The intention was to conceptualise the development from early-career to mid-career OBI. Taking a pragmatic approach, this required a separate exploration of mid-career OBIs PJDM, before comparing these findings to the early-career OBIs in Chapter 5, rather than to test the findings of early-career OBIs with mid-career OBIs. As such, this study took an inductive approach, and therefore the findings in Chapter 5 were not used as a guide for analysis in this study.

6.3. Results

The analysis generated 312 codified units which informed two overarching themes: (1) A Hahnian approach to development, reflecting OBTs underpinning philosophy, supported by two themes and six subthemes, and (2) Practical wisdom: the synergy of contextual comprehension and appropriate options, supported by two themes and five subthemes, as illustrated in Table 6.1. As in previous Chapters, to avoid the implication of a linear relationship between subthemes I have utilised thematic maps (Figures 6.1 and 6.2) in addition (Braun & Clarke, 2022b).
Table 6.1. *Thematic Table Showing Overarching Themes and associated Themes and Subthemes of Mid-Career Outward Bound Instructors’ Decision Making*

<table>
<thead>
<tr>
<th>Overarching Theme</th>
<th>Theme</th>
<th>Subtheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Hahnian approach to development</td>
<td>Critical experiences</td>
<td>Authentic practice environment</td>
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<tr>
<td></td>
<td></td>
<td>Formal training</td>
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<td></td>
<td></td>
<td>Seeking challenge, at work and at play</td>
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<td></td>
<td>OBT; Instructor development and support</td>
<td>Scaffolding within a community of practice</td>
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<td>Reflective practice: articulation and exploration</td>
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<td></td>
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<td>Self-awareness and metacognitive development</td>
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<td>Practical wisdom: the</td>
<td>High level of Contextual</td>
<td>Situational awareness</td>
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<tr>
<td>synergy of contextual</td>
<td>Comprehension</td>
<td>Situational demands</td>
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<tr>
<td>comprehension and appropriate options</td>
<td>Identification of</td>
<td>PJDM ‘it depends’ approach</td>
</tr>
<tr>
<td></td>
<td>Appropriate Options</td>
<td>Risk versus benefit decision</td>
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<td>Cognitive load</td>
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</tbody>
</table>
Figure 6.1. Thematic Map (Braun and Clarke, 2020) Demonstrating the Interconnected Nature of the Themes and Sub-Themes within the Overarching Theme ‘A Hahnian Approach to Development’
Figure 6.2. Thematic Map (Braun and Clarke, 2020) Demonstrating the Interconnected Nature of the Themes and Sub-Themes within the Overarching Theme ‘Practical Wisdom: The Synergy of Contextual Comprehension and Appropriate Options’
6.3.1. A Hahnian Approach to Development

Reflecting the Hahnian philosophies that underpin OBT’s approach to adventure education, mid-career OBIs attributed their development to ‘critical experiences’. They purposefully sought out experiences to challenge themselves; ‘seeking challenge’ but also acknowledging the impact of ‘formal training’ on their development. Crucially, the most valuable of these critical experiences occurred within an ‘authentic practice environment’. These mid-career OBIs also described a purposeful facilitated development encompassed by the theme ‘OBT instructor development and support’ which was ‘scaffolded within a community of practice’ (Wenger, 1998). ‘Living’ (MCI1) OBT philosophies and beliefs enhanced mid-career OBIs’ ability and inclination to participate in ‘reflective practice’ which further developed their ‘self-awareness and metacognition’. These themes are relational, which I highlight using the thematic map (Figure 6.1). As such the results below may include links to subthemes from the other theme.

6.3.1.1. Critical Experiences. These mid-career OBIs sought out experiences that would challenge and support the development of their DM skills, consistent with a Hahnian ethos. These need not be successful experiences but were considered to be authentic and involving real risk; MCI4 described, ‘I have gone through, you know, some pretty dire moments, with groups or with [climbing] partners or, you know, just out and about doing stuff. And that's definitely influenced some of the decision making’. Getting things wrong, ‘trial and error’ (MCI9), was something all mid-career OBIs identified as developmental. However, the value was created through effective reflection, ‘I can remember that was a big moment, it was like right I've gotta work on that’ (MCI5) to translate the experience into valuable learning.

Mid-career OBIs recognised the limitations of their national governing body qualifications, and highlighted that their work in adventure education involved developing
additional skills and DM; MCI7 said, ‘you do all the national governing body training sort of stuff... It’s like that's all kinda how you just keep people safe basically and, like, that's like, only one little bit of our job here is to keep them safe’. When operating in this hyperdynamic environment, with varying situational demands, MCI3 highlighted the challenge and weakness in following a set process, describing an event early in their career:

I worked with these, sort of challenging, well, fairly challenging groups in Merseyside, yeah, quite soon after I was qualified as a sailing instructor and, I just really realised, the moment they stepped off the minibus, that going through the RYA's Method [wouldn't work].

The mid-career OBIs highlighted the need to understand the prescribed processes ‘they are very prescriptive’ (MCI3). The national governing body qualification process reflects Hatano and Inagaki’s (1986) contention that routine expertise precedes adaptive expertise, in contrast to Chapter 4 findings. Understanding enabled deconstruction of the process and then adapted reconstruction to fit the context. MCI1 described the evolution of this ability, in-context, which occurred later, after qualification:

It’s like a driving test… they [national governing body qualifications] really sort of, give you that skill set to kind of operate competently within that, within the remit of the qualification… I don't believe you come away from that being like, excellent, because you've not delivered it to groups.

MCI7 described intentionally practise DM as a skill in its own right and explained:

If you are in an environment yourself that's genuinely challenging and you are having to make some properly consequential hard decisions, it's like, it's a skill,
isn’t it? And like any skill, you get better at doing it when you actually push
yourself to have to do it somewhere difficult.

Mid-career OBIs sought out personally challenging experiences to develop their DM
in their own time; they did not actively seek out risky DM environments as an aspect of their
work. Potentially, avoiding these environments in work was owing to the associated cognitive
demands and the consequent impact on the quality and safety of their session. There was a
distinct separation between what was an acceptable level of challenge at work, and what was
acceptable in leisure. MCI3 commented that it was essential to ‘separate out work and other
people’s well-being, with having your own adventures’. Nevertheless, DM practice in a
variety of authentic environments aided in developing the mid-career OBIs’ confidence in
their ability to apply their skills; ‘Managing yourself and friends and whoever you’re with, in
more challenging environments, I guess then ties back to like, being more confident when you
are in these, kind of, less challenging [environments]’ (MCI7). This understanding of DM as
a vital skill, transferable between work and play and across different activities, suggested a
meta aspect to the transportability of the DM skills.

6.3.1.2. Outward Bound Trust; Instructor Development and Support. As
noted, the notion of development through challenge is central to OBT’s ethos and inherent in
this community of practice. The counterbalance that made taking on challenge feel
achievable was the supportive culture in the organisation: the scaffolding provided. MCI1
summarised ‘It’s working with the people that I work with across the Outward Bound Trust,
that I feel like has provided that, sort of, safe environment in which to work on those things’.
This community of practice offered mid-career OBIs a breadth of potential knowledge
accessed through working with others in formal team-teaching, as MCI6 explained: ‘you see
so many different people and so many different ways of working, and so many different
thought processes, so many different ideas. It’s like, wow, I’ve got all this information to
draw from. Thus, highlighting the value in an approach that makes thinking visible. ‘Sharing stories with colleagues’ (MCI6) informally, for example, during minibus journeys to the venue or in the staff room over a cup of tea, was also considered valuable and evidenced a professional culture. MCI3 explained: ‘People used to chat about their day openly and chat about anything that had, sort of, happened... you know, that kind of informal chat time is quite important really’. Formalised processes scaffolded this informal communication and formed part of the safety culture. For example, the sharing of plans and lessons learnt in morning staff meetings, formal and informal social interactions as part of the centre routine, and memos with updated safety information distributed via the centre or OBT internal communication.

Notably, the mid-career OBIs wanted to comprehend their own and others’ decisions, to become more metacognitive; MCI7 described favouring ‘lots of conversation about, like, why people do what they do. Like, people have different thought processes and different ways... Particularly at Outward Bound where we have such freedom’. Rather than focusing on merely the declarative and procedural knowledge, mid-career OBIs also sought to understand the conditional knowledge required; the how and why. Additionally, the mid-career OBIs appeared to comprehend the interview questions at a deeper level compared to the early-career OBIs. The mid-career OBIs responded in a way which demonstrated reflection on their thinking, rather than solely on their practice. They were able to articulate their thought processes, and exhibited an intentional consideration of, and control over these cognitions. The mid-career OBIs also demonstrated an understanding of the impact that their past experiences had on their current cognition.

These mid-career OBIs noted that early in their careers, opportunities for DM were limited because their practice was more prescribed. There was a need for initial technical competence and a shared mental model (Cannon-Bowers et al., 1993) of OBT’s practice to be
developed, before variety could be gradually integrated into practice and adaptable decisions made. As the mid-career OBIs’ expertise developed, so too did the breadth of the situational demands, akin to a bandwidth expansion process, the capacity expanding gradually. This progressive growth highlights the significance of the OBI induction process before working for OBT and the ongoing development.

There’s a balance of, like, needing some level of experience to get to that point isn’t there… to have those basics nailed first, otherwise, you start, I think if you start thinking about all that extra stuff, that’s when you’re gonna forget something that’s important and somebody’s gonna die! (MCI7)

In jest, MCI7 highlighted the importance of having enough physical and cognitive resources ‘in hand’ to be able to process all the additional elements of the role of the OBI and maintain safety, demonstrating their metacognition and noting the importance of scaffolding. It is worth considering how ‘jest-y’ that was however, particularly given the reality of risk in adventure education.

All mid-career OBIs appeared to be reflective practitioners: ‘I’m a reflective person’ (MCI9). These skills had developed as part of participation in adventure activities; challenging the initial assumption that these skills had developed as an aspect of their professional practice. OBT placed a high value on on-action reflective practice, however, MCI7 highlighted reflections organic in nature: ‘I don’t tend to, like, sit down and consciously think, right, I’m gonna think about what happened today. It’s more sort of organic and happens as I’m out and about doing stuff’. Reflective practice was integrated into practice rather than an addition, reflecting similar findings to Nash et al. (2022) in sports coaches. The mid-career OBIs favoured different styles of reflection, some preferred ‘sitting and thinking’ (MCI8), while most preferred a critical friend: a fellow OBI or mentor. Discussion with
others from their community of practice was important to mid-career OBIs for contextual understanding, ‘my reflection is just through a conversation about, you know, this is what happened, this is why it happened, if it was happening again, this is what I’d do, this is how I’ve learnt from it’ (MCI4). The significance and value placed on reflection supports the notion of a CA (A. Collins et al., 1991), where tacit processes are made visible in order to develop cognitive skills, aligning with OBT’s ethos and culture. However, the reflective process was far more integrated and less formalised than anticipated. This reflection was purposeful with clear intentions to draw conclusions and an equally clear intention to act on the findings.

Critically, the mid-career OBIs described reflecting on their PJDM, a metacognition ‘I sort of replay, what decisions did I make? Was I happy with them? Is there anything I could have done differently?’ (MCI8). This links with the desire to seek out challenge cited earlier ‘it allowed me to unpick what I already knew and put that into some sort of context, and then I could fill in the gaps of what I didn’t know’ (MC15). The mid-career OBIs learnt that these challenges provide powerful developmental opportunities, ‘that was some of the more challenging, sort of, decision making risk management type stuff I’ve had to do. I think that experience... if I had to pinpoint when I started getting better at doing it, that was probably it’ (MCI7). Their personal adventures informed their self-awareness and consequently PJDM skills.

6.3.2. Practical Wisdom: The Synergy of Contextual Comprehension and Appropriate Options

MCI7 described the key to DM as the ‘ability to pick the right thing, for the right group, in the right situation’. This statement encompasses the key components of mid-career OBIs’ use of PJDM. Namely, the practical wisdom which synergises the ability to have several viable technical and pedagogic options to select from (choosing the right thing at the right time), and
to have a high level of contextual comprehension, relating to the situational demands (the
right group), and situational awareness (the right place). The identification of these options
both relied upon and supported mid-career OBIs’ successful management of their cognitive
load. Ultimately, the mid-career OBIs were attempting to balance risk and benefit in their
decisions. They were mindful of the dynamic factors involved in the context and therefore
took an ‘it depends’ mindset. As before, these themes are interconnected, demonstrated by
the thematic map (Figure 6.2), consequently some subthemes appear in other themes
throughout the results.

6.3.2.1. A High Level of Contextual Comprehension. These mid-career OBIs
consistently demonstrated a high level of situational awareness ‘the water levels were pretty
tame, pretty low. There was no real consequence of being washed away. Or, you know, if
there was a slip, it would only be a small one’ (MCI4). This projection level of situational
awareness was based on nuanced environmental knowledge, venue-specific knowledge,
weather, conditions (tide, water levels, terrain) and temperature. A basic projection level of
situational awareness was evident amongst all the mid-career OBIs, ‘on a different day there
would be lots more’ (MCI7), with a higher level of extrapolation and projection amongst
those with broader and greater experience,

On an inconsequential grass slope, I mean, you see them fall over a lot, and you
think right, OK, if that was a consequential place then I’d need to be on that, but
then really you can predict when they're gonna fall (MCI5).

However, a reactive approach was also evident when encountering unpredicted
events. For example, MCI8 described, ‘there’s this water [unusual conditions] that I hadn’t
brought into play, so I should probably react to that. This seems like more of an obstacle than
I'd previously anticipated’, suggesting an additional capacity to have ready access to options
for events that could not be anticipated. These options may be in the form of an immediate action plan, such as, if X happens then we will do Y, a solution to acute rather than chronic DM demands.

Comprehension of the situational demands was apparent in three similar levels to situational awareness cited earlier; descriptive ‘it’s the attitude within the group, and the characters, you know individuals within that team, how they responded to each other’ (MC11), comprehension ‘pre-existing injury that, sort of led to that, like the planning to avoid him having to do something he couldn’t do’ (MC12), and projection ‘if one of them was to decide to do something stupid, are the others gonna rein them back in?’ (MC17).

Situational demands consisted of identifying, understanding and predicting psychological demands, for example, the emotional state of the group in the environment ‘trying to, like, set the week up in a positive way and get them to buy into why they’re here and enjoy it’ (MC17); physical demands, such as the ability of the group ‘they’d not had the best night’s sleep, feeling a bit tired and achy from the day before’ (MC16); social demands, for instance, the group dynamic ‘I’d be watching for how they sort of, like, react to each other’ (MC12), and the impact it may have on the session ‘collectively, [they] had sort of coalesced into... an esprit de corps, a real sort of team spirit in terms of the level of challenge that I felt they were capable of’ (MC11).

In addition, the situational demands were also created by the developmental aims of the session: the intended learning outcomes. These may be curriculum-based with school groups, socially based with youth groups, or professionally based with apprentices. For example:

We were working on a bit of goal setting, the team had set some broad goals to relate to their aims, which relate to the values of the company. So, they were
broadly looking at safety, sort of, pushing their challenges, and their support and
communication. (MCI3)

The participants recognised that the root cause of past mistakes was frequently connected to
poor assessment or management of these demands, MCI7 said:

I've had a few... yeah, just things where it doesn't work at all, and it could be
like... just the sort of level of challenge is completely wrong or the group, or sort
of, trying to put some learning focus on something that they're not ready for.

The mid-career OBIs also described the required environment knowledge, as MCI6
expressed, there was a 'need to know it well enough' when referring to the situational
awareness. This knowledge helped to 'build up a picture' (MCI3), informing the PJDM.
However, its contextual and conditional nature may also imply challenges in transferring
situational awareness from context to context. While these mid-career OBIs demonstrated
predictive levels of situational awareness, this may not be fully formed or be transportable
between contexts.

The mid-career OBIs reported developing their contextual comprehension via
observation and questioning of their groups while undertaking activities, in a specific and
progressive way, before any point of commitment. MCI9 explained,

It's what they're saying, what they're doing, how they're behaving around you, as
to whether, what's their emotional intelligence level, what's their fitness level.
Then you take that a step higher and go, let's go do jog and dip. During that, is a
really good profiling tool... you find out what, in some way what attitude do they
have to the course, what's their motivation?
Furthermore, the mid-career OBIs described their ability to read facial expressions, tone of voice, body language and changes in behaviour to inform their understanding of the situation: an emotional intelligence. These skills seemed particularly important to utilise in challenging places. MCI5 described ‘they're not like spread eagle, they've got their weight on their feet, they're moving fluidly... you can see in their eyes they’re not totally gripped’. MCI6 explained the synergy ‘it depends entirely upon who they are, what the aim is and what the environment is doing’.

6.3.2.2. Identification of Appropriate Options. The mid-career OBIs selected from a range of strategies (options) to ensure the safety and education of their participants, a risk versus benefit decision. MCI7 described the DM process:

I guess kind of, balancing up those things, and like, today [the environment]
being sort of benign, and with such a nice sort of, competent group, you can very much focus on the learning side. But like, yeah, in different situations that balance would be totally different.

The mid-career OBIs pre-filtered their options while planning their sessions based on contextual priors (Gredin et al., 2018) to create a straw-man plan of viable options. For example, understanding and projecting the meaning of a northerly wind at a particular venue, the physical impact, and the group's ability. Options could then be discounted or retained as ‘workable’ as the wind strengthened, because of the terrain, or if the group became more fatigued than anticipated due to a colder wind. The consequential framework plan is flexible, adaptable, and highly conditional: ‘it depends’ (MCI6), ‘I might be more kind of direct, and more kind of, lead from the front’ (MCI4).

A unique characteristic of these mid-career OBIs’ plans was the use of pre-determined points during the session to make crucial decisions ‘there are points where you are deciding,”
are we gonna do the through trip?’ (MCI7). The points were both physical locations or times, and psychological. These points were dependent on a projection of the PJDM process – the progress of the activity being measured against the anticipated conditions and groups performance. The projection of the situational demands was based on an anticipated trajectory of development. Consequently, mid-career OBIs discounted some options ahead of time, based on their experience with the group or the situation differing from that anticipated, ‘the start, that was already kind of pre-set, having already seen them’ (MCI4). In this respect, the mid-career OBI contrasted reality with what they anticipated.

MCI6 indicated the cognitive effort required in balancing the demands, ‘there’s only so many plates you can spin, you’ve got to keep them spinning’. Mid-career OBIs reported discomfort in new environments. In these situations, they prioritised the situational awareness at the expense of the cognitive resources deployed to the situational demands, a metacognition, to reduce their pedagogic agility in favour of security. MCI7 described,

The first time I took a group in this gorge, I was more concerned with managing them safely through it than I was with what the learning outcomes were. But as you get to know it and get comfortable with it, you can, and you've got then the headspace to be thinking more, a bit more about the other needs of the group.

When the mid-career OBIs were comfortable in this context the balance returned in favour of pedagogic adaptability and flexibility; it was ‘safe enough’ (MCI2) and thus more cognitive resources could be deployed to meet the situational demands.

The mid-career OBIs described various strategies used to manage cognitive load, such as pattern recognition or intuitive-like thinking ‘maybe I don’t have any awareness that I’m doing it’ (MCI4); heuristics ‘I kind of look at it as lemons in a row. When you get to three lemons, you really want to start wondering, is this what we should be doing?’ (MCI6)
(Raffan, 1988), the community of practice ‘chat about anything that had happened’ (MCI3), planning for adaptability ‘never go to war without an exit plan’ (MCI9), and proactive coping ‘guessing when it’s likely to go wrong’ (MCI2).

OBIs also attempted to maintain some control of the environment by replanning to optimise stable weather conditions, or selecting less dynamic environments

I go into the environments that I feel more than comfortable in… And then that’s quite significant really and gives you that that sort of headspace to, you know, you’re not thinking about what you’re personally doing. So, you can, y’know, you’ve got time for people you’re with (MCI3).

These mid-career OBIs manipulated the demands to reduce cognitive load utilising prior knowledge of participants ‘to walk into something completely blind… I would only do that if I was with people who I knew were capable’ (MCI6), and, having complete comprehension of the intended outcomes for the session (situational demands) ‘you’re like completely and utterly confident with the, like, delivery of that course… there’s a lot more, like, freedom in your head, space in your head’ (MCI7). These strategies enabled the mid-career OBIs to focus their cognitive efforts on addressing the pedagogic demands.

6.4. Discussion

These mid-career OBIs frequently described reflecting and learning from authentic, diverse experiences involving real risk: critical development experiences (Tripp, 2012; Webb et al., 2021) and intentionally sought them out as a way to develop, Developing mid-career OBIs’ metacognition appeared critical in gaining the declarative, procedural and conditional knowledge essential for PJDM and AEx. The value that mid-career OBIs placed on learning, and their motivation to problem solve further enforce that OBIs are operating on a spectrum
of adaptability, towards a comprehensive AEx (E. Bell et al., 2012; Bransford et al., 2005; Crawford et al., 2005), as highlighted in Chapter 4.

An intrinsic motivation to develop and progress in their PJDM led mid-career OBIs to purposefully seek out experiences that challenged them. Mid-career OBIs believed working through these challenges would support the development of their skills. This attitude is illustrative of a growth mindset (Dweck, 2012), increased self-efficacy through confronting such challenges (Bandura, 1977), and a professional approach that aligns with OBT’s ethos.

This link between OBIs’ epistemology, their practice, and the philosophies of OBT highlight an extension of the epistemological chain (L. Collins et al., 2014). However, these findings suggest a more complex connection, rather than a chain, this appeared to be an epistemological network.

Mid-career OBIs attributed much of their development to these critical experiences through the community of practice (Wenger, 1998). Given the situated approach to development, mid-career OBIs required a level of initial technical competence, and an associated reduction in the cognitive load – a stress coping strategy (Lazarus & Folkman, 1984), before being able to take on challenging DM environments. The zone of proximal development (Vygotsky, 1977; Warford, 2011), was managed by the mid-career OBIs’ Learning and Adventure Managers at the time, alongside the level to which mid-career OBIs were qualified, which naturally regulated the environments they could operate in.

The peer-to-peer nature of articulation within mid-career OBIs reflection both supports the notion of CA, and aligns with OBTs ethos and culture. The significance of this reflection was that it was purposeful in nature with clear intentions of acting on conclusions (Kolb & Fry, 1974), and that the mid-career OBIs had developed their skillset to do so safely.

Mid-career OBIs were both reflective, and conscious of their reflective practice, a contrast to high-level coaches in traditional sports, studied by Nash et al. (2022), who were reflective but
unaware of their reflection. Mid-career OBIs’ recognition of their reflective practice may be an echo of the adventure education domain as a whole, or more specifically of OBT’s focus on explicit reflection on-action. Regardless, quality reflection remains a key component of PJDM development. This is an area worth deeper consideration, particularly, the consideration of the quality of reflection given its overt prominence.

6.5. Chapter Summary

In summary, PJDM for these mid-career OBIs consisted of having and selecting from a range of pre-filtered options, contextual priors (Gredin et al., 2018), appropriate to their comprehension of the situational demands. This was informed by a detailed contextual comprehension, particularly the ability to comprehend and project the future state of these elements. Mid-career OBIs purposefully developed their PJDM through intentional practice and reflection on their own experiences. These aspects were identified within a clear and coherent Hahnian philosophical framework that was an integral part of an ongoing OBI development programme, akin to a CA. This approach valued reflection, collaboration, and active development of metacognitive skills through seeking out critical experiences and support from the community of practice.

To conclude Part 1 and 2 of this thesis, the next Chapter draws together and summarises the findings from Chapters 4, 5 and 6, before discussing the implications of these in practice. This presents the context for further exploration of a CA in the final empirical study, presented in Chapter 8.
7. Discussion and Implications So Far…

This Chapter draws together the findings from the three previous Chapters to consider the differences and similarities of key components between early-career and mid-career OBIs’ PJDM. Chapter 4 considered the type of expertise required by outdoor instructors, exploring a facet of their AEx: PJDM, in OBIs with a variety of experiences and responsibilities. Following this, Chapters 5 and 6 compared the characteristics of early-career and mid-career OBIs’ PJDM development, taking a methodological decision to replicate the research design. In this next Chapter, I summarise the findings of Chapters 4, 5, and 6, and discuss the implications relating to PJDM development for OBIs. The Chapter concludes by describing the context and focus of the final empirical study, presented in Chapter 8.

7.1. Summary of Findings So Far

7.1.1. Chapter 4

This Chapter found that competent OBIs, while less adaptable than expert outdoor instructors, operated on a spectrum of AEx. The significance being that it did not appear necessary to develop a routine expertise prior to developing AEx. An important implication for potential future OBI training and development.

The competent OBIs’ AEx, however, was limited by the creation of detailed plans which they felt unable, or unwilling, to change. These competent OBIs therefore utilised a nested PJDM approach to DM. They relied on the framework of planning decisions (classical DM), with some adaptation in-action (naturalistic DM), dependent on their adaptive capacity and the situation. These competent OBIs held sophisticated epistemologies, which underpinned their practice. A level of metacognition supported their PJDM, which may have been initially developed through participation in the outdoors.
Crucially, AEx was shown to be a spectrum which can be built on, and adaptability was apparent in all competent OBI s as well as the expert outdoor instructors. AEx, thus, can be considered an objective of OBI PJDM development.

7.1.2. Chapter 5

For the early-career OBI s in this Chapter, high levels of safety were prioritised. However, maintaining this safety occupied a large portion of their cognitive space. The situational demands were complex – a combination of managing the group, meeting the organisational learning outcomes, and maintaining safety in the hyperdynamic environment. Additionally, early-career OBI s engaged in detailed planning, which they felt compelled to follow as closely as possible. These relatively rigid plans were a result of high cognitive loads created by maintaining their span of control, and potentially encouraged by OBT’s procedures at the time.

Early-career OBI s had a desire to develop their PJDM. Their development was predominantly formed through an experiential learning process, situated within OBT, their community of practice. Through on-action reflection, and developing a level of metacognition, early-career OBI s developed a greater understanding of their working context and hence, their PJDM. As a result, early-career OBI s gained confidence which allowed them to engage with opportunities for purposeful practice where they exercised their PJDM skills. This development, however, was not supported by national governing body training.

7.1.3. Chapter 6

Mid-career OBI s’ PJDM was based on having a range of options, often narrowed ahead of time, informed by a contextual comprehension of the situational awareness and situational demands. Mid-career OBI s were able to prioritise pedagogical agility by satisfying the safety needs (situational awareness) more rapidly and efficiently. This Chapter identified the existence of a link between mid-career OBI s’ PJDM and philosophical beliefs (the
epistemological chain), but also a further link to the values of OBT, an epistemological network. OBT’s Hahnian philosophies of development supported mid-career OBIs to purposefully seek out challenging experiences and reflect on these in order to develop their PJDM. These findings highlighted the importance of development situated within the community of practice.

Notably, evidence of approaches similar to those of a CA were at play for these mid-career OBIs. A CA was also noted in Chapter 5 and, as such, appears a valuable route for further investigation.

7.2. Discussion and Implications of The Findings

7.2.1. Discussion

Although not considered expert (e.g., L. Collins & Collins, 2015), OBIs of all experience and qualification levels were operating on a spectrum of AEx (Chapter 4); an adaptive corridor, with adaptability expanding as they developed. This model of AEx supports Jensen et al.’s (2022) proposition that when expertise is developed in conditions which constantly require adaptation, such as the hyperdynamic environments in which OBIs operate, AEx may be developed without the prior need for routine expertise. These findings also offer implications for scientific knowledge, supporting Tozer et al.’s (2007) initial proposition of AEx as an essential aspect of practice for outdoor instructors operating in the adventure education environment.

Although a level of technical skill is initially required to operate in the environment, the environment itself likely establishes an adaptable knowledge base from the beginning, so long as the right approach to the work challenge is set. Correspondingly, in all 3 empirical Chapters thus far OBIs described initial national governing body qualifications (required by OBT) as insufficient for the needs of their operational context, and equally, did not appear to support the needs of OBT to develop adaptable and flexible OBIs. In particular, the entry-
level national governing body qualifications essentially encouraged routine expertise, or perhaps even, just competency (cf. D. Collins et al., 2014). As a result, OBIs first had to deconstruct their knowledge, before being able to reassemble the parts flexibly to create novel solutions. The implication being that these PJDM skills, enabled by the OBIs’ adaptability, must therefore be developed by OBT, if not by the national governing body processes or other early training inputs. As such, practically, the implications are that the way in which future training is designed, both within OBT and within national governing bodies, should work towards progression on an adaptive trajectory throughout, rather than an initial routine expertise.

The focus on the ability to do the right thing, in the right place, with the right people, at the right time in mid-career OBIs echoed the findings in early-career OBIs. Both early-career OBIs and mid-career OBIs operated within similar environments, similar aims, and the same organisation. However, reflecting Endsley’s (1995) levels of situational awareness, the mid-career OBIs also held a comprehension and projection level in situational demands (Abraham & Collins, 2015), unlike the early-career OBIs who focussed predominantly on situational awareness. The mid-career OBIs found appraising the situational demands less difficult and less cognitively demanding. As such they were able to facilitate greater pedagogic agility. Notably, however, the competent OBIs’ (Chapter 4) adaptability was limited by their desire and need to manage the high cognitive load produced by the environment, the situational demands, and the organisational constraints. This inflexibility was similarly reflected in the early-career OBIs (Chapter 5). In order to operate under these conditions, the early-career OBIs created detailed plans to which they became emotionally attached, a sunk cost fallacy, or commitment bias (Arkes & Blumer, 1985; Kahneman & Tversky, 1974). In contrast, mid-career OBIs utilised a straw-man plan. They used
predetermined points to make crucial decisions on preselected options which were audited throughout the session (L. Collins & Collins, 2019a).

Additionally, early-career OBIs found it challenging to differentiate the salient information from other information in their assessment of the situation. This difficulty added to their cognitive load by applying the same level of significance to all situational factors, thus all factors occupying space in their working memory simultaneously. Mid-career OBIs, however, were able to focus and act on a smaller number of significant variables, and effectively ignore, or store for later, the remaining elements (L. Collins & Collins, 2012). A training focus for early-career OBIs on expanding the ability to create and work within a ‘strawman plan’ would be of value.

Essentially, mid-career OBIs used a pre-filtered range of options, they selected from fewer but more suitable options, which they had often considered ahead of time, an illustration of the nested PJDM process. Their options depended on a variety of predicted situations. Consequently, the mid-career OBIs appeared to have a reduced cognitive load, affording them greater AEx in-action than the early-career OBIs. This new knowledge contributes to existing literature around the management of cognitive load for adventure education professionals (e.g., L. Collins & Collins, 2019), and therefore may also contribute to practice for those who are responsible for training OBIs. Scaffolding early-career OBIs’ cognitive load, by supporting their development in the ability to filter the information available to them, and, consider options ahead of the need to make the decision emerges as significant.

As key challenges, uncertainty and scarcity of information generated cognitive demands (L. Collins & Collins, 2019a) and the associated perceived lack of control could create anxiety (Bunyan & Boniface, 2000). Both a high cognitive load (reduced working memory capacity) and anxiety, impact attentional control (Eysenck et al., 2007). OBIs who
feel they do not have to ability to manage a situation will feel increased stress and anxiety, effecting the focus of their attentional resources. This would most likely increase their cognitive load, and therefore diminish their awareness of, and ability to cope with, all aspects of the situation (Lazarus & Folkman, 1984). Thus, in unfamiliar situations, mid-career OBIs focussed primarily on safety (situational awareness), a possible meta-process, but also a safe and defensible option. Yet, in all other situations, they predominantly focused their attention on the learning objectives, group dynamics, and facilitation of development (situational demands).

Contrastingly, the early-career OBIs always focussed on safety (situational awareness), regardless of the situation. Maintaining the highest possible level of safety took primacy. Mid-career OBIs took a risk-benefit decision: Is it ‘safe enough’ (MCI2), to focus on the education? Is it risky enough to facilitate development? This was likely due to the situational awareness requiring less cognitive capacity for the mid-career OBIs, allowing for a focus on the situational demands (i.e., pedagogic needs). Figure 7.1 displays this difference in cognitive focus. Compared to early-career OBIs, mid-career OBIs appeared to have increased situational awareness, and greater ability to anticipate and project the situational demands, and should be considered in any future development of OBI training. The gap suggests that improvement of situational comprehension would be valuable in developing OBIs PJDM. L. Collins and Collins (2022) offer a tool which increased the description level of situational awareness, something which may be worthy of further enquiry in this context. Working memory is key to situational awareness, level 3 (projection) in particular (Draheim et al., 2022), and therefore may create a ‘bottleneck’ in the OBIs’ development of high level situational awareness (Gonzalez & Wimisberg, 2007, p. 58). The findings in Chapters 4, 5, and 6 support this, expanding the theoretical understanding within the OBI context. Very high cognitive loads would be detrimental the OBIs’ ability to project the future state of the
factors in the environment, therefore undermining DM, and halting OBIs development of situational comprehension.

7.2.2. Implications for Developing Outward Bound Instructors’ Professional Judgement and Decision Making

7.2.2.1. Zone of Proximal Development. Varied experience which challenged OBIs at the edge of their capabilities within a zone of proximal development was essential to OBIs development at all levels, and is considered vital in developing AEx (Pulakos et al., 2009). Mid-career OBIs in particular, affirmed the importance of this involving high validity (Kahneman & Klein, 2009) and consequentially rich experiences, as opposed to a managed experience or training scenario. This preference in the mid-career OBIs was perhaps a reflection of their higher level of AEx and technical skill to manage the complexities, demands and associated cognitive load of authentic experience. Whether this was intentionally scaffolded by Learning and Adventure Managers or developed independently is uncertain, however. Therefore, to create opportunities for OBIs to develop in environments which are consequentially rich authentic situations, and also remain within the OBIs’ zone of proximal development would be of great value. This is certainly possible, however would require the developer to hold a comprehensive understanding of each individual OBI’s skill level, and the ability to perform the appropriate intervention, at the right time, to maintain the OBI within the zone of proximal development. A complex task which highlights the need for developer expertise
Figure 7.1. Cognitive Focus of Early-Career Outward Bound Trust Instructors Compared to Mid-Career Outward Bound Trust Instructors in Relation to Situational Awareness and Situational Demands
Mid-career OBIs sought opportunities to develop their metacognition by asking other OBIs about their DM and reasoning. A purposeful, situated approach to PJDM development which makes use of OBIs’ community of practice appeared essential. The practical implication being that consideration should also be given to guiding OBI developers (e.g., Head of Learning and Adventure, Learning and Adventure Managers, Senior OBIs) in their coaching of neophyte OBIs, and, to early-career OBIs in how to access knowledge held within the community of practice. One existing example is D. Collins & Collins (2020) ‘Big 5’ questions, which are already endorsed by OBT.

7.2.2.2. **Metacognitive Development.** As evidenced in previous Chapters (4, 5, and 6) and by other authors (e.g., L. Collins et al., 2016) metacognition is essential in sound PJDM and AEx. PJDM processes, and the associated metacognitive and reflective skills, appeared to initially be developed unintentionally through personal active participation in the outdoors. That is to say that OBIs began developing their reflective skills, and began thinking at a metacognitive level, because of the nature of the hyperdynamic environments in which they participated personally (e.g., rock climbing, white water kayaking, remote expeditions). Training for OBIs therefore should aim to maximise the experiences gained by OBIs outside of their professional work time. The difficulty, however, is that OBT cannot demand how the OBI spends their free time. Perhaps then, adventures outside of work could be actively celebrated and encouraged, with tools or approaches to support deep reflective practice taught alongside to enhance this initial metacognitive development. Given its apparently ad-hoc development thus far, going forwards, a focus on metacognitive development should be considered an essential and intentional aspect when developing future OBI training programs, and potentially also a consideration for national governing bodies.

7.2.2.3. **Development Situated Within the Community of Practice.** The epistemological network linking mid-career OBIs’ beliefs to their practice and, additionally,
with OBT’s Hahnian philosophies, was also evident in the early-career OBIs, though to a lesser extent. Early-career and mid-career OBIs’ philosophical coherence with OBT may have been the attraction to work for OBT or, could have been instilled via their induction, work, and training. In reality, it is likely a combination of the two; a community of practice through which knowledge is held, transferred and created (Wenger, 1998). This philosophical coherence between the organisation and the OBI builds on the existing evidence and understanding of the epistemological chain in professional practice (L. Collins et al., 2014; Grecic & Collins, 2013), extending it to an epistemological network. The impact of the organisational philosophies on the practitioner is therefore an aspect worthy of consideration for future research in the area. The practical implications for OBIs’ development suggest that OBT should be explicit about their philosophical standpoint throughout OBIs’ training to intentionally integrate to the community of practice. Further, OBT may wish to consider the philosophical fit within the recruitment of new OBIs.

OBT as a community of practice, held shared mental models of instructional practice (Abraham et al., 2010) which supported early-career and mid-career OBIs’ development. One aspect of this was a shared ‘OBT language’ that appeared to be constructed through observations, engagement, and reflection on the community’s shared experiences. Notably, common terminology is seen as one important precursor of effective communities of practice. This shared mental model allowed both early-career and mid-career OBIs to access, understand, and interpret their knowledge (H. Collins & Evans, 2007). Accessible shared knowledge, in turn, facilitated the OBIs’ development and comprehension of their work within the OBT context. In practice, the implication is that there is a need to embrace the community of practice as an aspect of OBI development, and situate development within this, working towards a shared mental model of practice. The use of the community of practice and shared mental models to develop expertise supports existing
literature (e.g., Ashford et al., 2023; Nash et al., 2023) within the OBT context, and adds an
OBT specific perspective to the literature into outdoor instructor development (e.g., Aadland
et al., 2017; Enoksen & Lynch, 2018; Galloway, 2002; McGovern, 2021). Additionally, the
notion of team teaching and peer support, which were described by both early-career and
mid-career OBIs, has been linked to a reduction in stress and anxiety (McGovern, 2021), a
coping strategy (Lazarus & Folkman, 1984). According to Vernon (2011) this interaction can
shape professional, social, and personal success, reinforcing the idea that work and play are
not mutually exclusive in PJDM development, assuming there is a level of metacognition and
reflection to enable the transfer of learning.

Early-career OBIs relied on the community of practice as a means of mentorship and
a resource for questioning and observation, both formally (e.g., training input) and informally
(e.g., conversation). The mid-career OBIs, however, described their development more
informally, perhaps as a result of that early formal training input being less of a current focus,
or appearing less important given their development since. Their descriptions of development
were more aligned with that of a CA (Dennen, 2004). CA utilises methods such as modelling,
coaching, scaffolding, articulation, reflection and exploration (Barry & Collins, 2021;
Dennen, 2004). Both early-career and mid-career OBIs described situated learning through
the community of practice, offering examples of scaffolding, reflection, coaching, and of
developing metacognition through questioning and articulating thought processes. These
findings should be considered when thinking about the structure and approach to OBIs
development. A CA approach to developing OBIs PJDM appeared of value, and therefore
suggested a need for further exploration.

7.3. Chapter Summary
Thus far, critical elements in PJDM for OBIs have revolved around situational awareness,
situational demands, and the creation of a variety of options. The development of OBIs’
PJDM resembled many features of a CA, based on a shared mental model of practice that is contextually developed and transferable between environments and activities. While Chapters 4, 5, and 6 have illustrated many ‘hallmarks’ of a CA, the approach does not appear to be complete. Further exploration of a CA as a developmental framework, therefore, may enable OBT to optimise this aspect of their OBI development. As such, this CA exploration was the next logical step in this thesis. Initially, exploration within OBT to understand precisely which elements of a CA approach are currently used and how, appears necessary. With this knowledge, the value of a future development of PJDM via a CA approach, may be considered. Part 3 presents this investigation, reviewing OBT’s current development approach against a CA framework before discussing the potential implications for OBI development moving forward.
In Part 1 and 2, Chapters 4, 5 and 6 identified that OBIs relied on the combination of high level situational comprehension, and a choice from pre-selected and prioritised options (contextual priors), to support their PJDM and operate on a spectrum of AEx. The environment in which OBIs operated required high levels of personal, and pedagogic skills to facilitate learning. In Chapters 5 and 6, OBIs of differing experience levels attributed the development of these skills, and thus their PJDM, to critical personal and professional experiences in similar environments. In particular, experiences within their zone of proximal development (Vygotsky, 1977), often supported by another OBI or Learning and Adventure Manager. These OBIs developed their metacognition through reflective practice individually and within their community of practice. With a better understanding of OBIs’ PJDM, an evaluation of the current approach to OBTs’ instructor induction and PJDM development was needed, before considering how best support the facilitation of PJDM development for OBIs. This will therefore be the focus of Part 3.
8. Cognitive Apprenticeship as a Means of Developing Professional Judgement and Decision Making

In both Chapters 5 and 6, hallmarks of a CA approach were identified as elements within the development of OBIs’ PJDM. Resultingly, Chapter 7 identified a need for further exploration of a CA approach as a framework to develop OBIs’ PJDM. The present Chapter, therefore, reports on a study which sought to understand the current use of CA within OBT, considering two questions: Does OBT’s current approach to instructor induction and development approach use a CA framework? How can the current approach be enhanced to optimise OBI development? A discussion follows, before presenting a potential tool, designed with OBT, for developing PJDM in OBIs.

8.1. Cognitive Apprenticeship Approaches to Development

In a successful CA the learner is engaged in the dynamic region beyond their current ability, their zone of proximal development, with support from a DM expert, a ‘master’, developing cognition in context (Dennen, 2004). The development of PJDM through a CA, therefore, is reliant on the ‘expert’ recognising and understanding their own PJDM – their metacognition (Barry & Collins, 2021). Principally, in CA the cognitive skills being learnt are the underpinning skills essential to PJDM, but which are not entirely observable, and potentially tacit in nature. Consequently, a CA intends to make these cognitions visible to allow the learner to acquire PJDM skills in context. The CA process is situated in active participation within an authentic community of practice: the learner initially working on the periphery, gradually becoming more integrated (Lave & Wenger, 1991).

8.2. Evaluation of Cognitive Apprenticeship

Stalmeijer et al. (2010) developed a tool to evaluate the application of CA teaching ‘methods’ in a medical setting, the Maastricht Clinical Teaching Questionnaire. The questionnaire asks
a series of questions of trainee professionals about their teachers’ practice, providing an overview of the prevalence and success of CA approaches (Boerboom et al., 2011). The questions relate to several of the key teaching approaches within CA, coaching, modelling, articulation, and exploration. It also included questions on the learning environment, which given its situated nature, Stalmeijer et al. suggest is vital to the success of CA, emphasising again the importance of the community of practice. Though the Maastricht Clinical Teaching Questionnaire has primarily been used in clinical practice (Boerboom et al., 2011; Stalmeijer et al., 2010), its adaptation to evaluate CA in other workplace learning environments, such as the development of OBIs’ PJDM, appears logical (Matsuo & Tsukube, 2020).

Matsuo and Tsukube (2020) reviewed the literature surrounding the aspects of CA, and the use of CA in the field of educational management, categorising these by setting (workplace vs. classroom) and communication (face-to-face vs. web based). Matsuo and Tsukube found only a limited number of studies within adult and workplace education. As such they propose web-based approaches to CA may extend its applicability to organisations more widely. However, the notion of a situated development of PJDM through a web-based programme does not appear well suited, especially in the OBI DM environment. One example, Greer et al. (2016), used a CA approach in the development of new teachers, whereby they viewed a video (model) of a challenging classroom situation. The less confident teachers received coaching and scaffolding, the more confident teachers articulated and reflected on their intended solution, while some explored alternatives. Although this example demonstrates a CA approach for adult development, the development of cognition was not situated in the workplace environment, the classroom. The application of a CA approach in this way potentially omits the importance of developing situated cognition, and subsequently, conditional knowledge based on the context.
Consequently, to support effective situated development of PJDM going forwards, it seems important to investigate the current use of CA within OBT. Thus, the objectives of this study were to evaluate the current approach to instructor induction and judgement and DM development within OBT, and its alignment with a CA framework, and, to make recommendations regarding how OBT’s current approach to judgement and DM development can be best developed and enhanced. The study proceeded in two phases. Phase 1 utilised an online survey based on the Maastricht Clinical Teaching Questionnaire, and the six teaching methods associated with CA (Modelling, Coaching, Scaffolding, Articulation, Reflection, Exploration; A. Collins, 2005). Phase 2 presented the findings to a focus group of OBT staff who were responsible for the development of OBIs: Head of Centre, Head of Learning and Adventure, and Learning and Adventure Managers, with the intention of engaging them in the practical implementation of the findings and implications.

8.3. Phase 1

8.3.1. Method

To comprehend the practical implications of the research in Chapters 4, 5, and 6, a fixed design was used to gather data from a wider group of OBIs (Robson & McCartan, 2016). In contrast to the earlier studies in the thesis, Phase 1 analysed the experiences and approaches used to develop the PJDM of OBIs, using an online survey (Appendix A).

8.3.1.1. Participants. A purposive total population sampling approach was utilised. Participants were OBIs, and self-identified as meeting the following criteria: (1) currently working as an instructor or senior instructor within OBT, and (2) having participated in an OBT ‘induction’ process within the last 5 years ($M=3.2$, $SD=1.7$). Of the respondents, 36 identified as male, 19 as female, and none identified as any other gender. Participants were aged between 20 and 55 years (Figure 8.1). OBIs had held their initial national governing body qualifications between one and 37 years (Figure 8.2).
Figure 8.1. *Online Survey Respondent Demographics: Participant age.*

Figure 8.2. *Online Survey Respondent Demographics: Number of Years Since Initial Qualification at Time of Response*
8.3.1.2. Procedure. Following ethical approval, cognitive pilots were carried out with a representative sample of OBIs ($n=8$), a necessary step due to the lack of prior use of the Maastricht Clinical Teaching Questionnaire in this context. The pilot responses were not included in the final sample. Over the course of four cycles of pilots several changes were made; to the order of questions, two similar questions were merged to reduce the length and time to complete the survey, ambiguous language was clarified, and consistency across the survey questions was increased. After the pilot, OBIs who met the criteria were invited to take part in the final version of the online survey via internal email. The study was also advertised in person by centre leadership teams (Learning and Adventure Managers, Heads of Learning and Adventure, and Heads of Centres). 55 OBIs consented and responded (80% response rate). Informed consent was gained via an information page and consent questions at the start of the survey. To encourage completion participants were offered the opportunity to undertake the survey within their normal working hours. On average, the survey took 48 active minutes to complete. Participants were able to begin the survey and return to complete it later, resulting in responses were submitted over an average period of 25 hours.

The survey was deployed using an online platform (Qualtrics XM, 2023) and consisted of 49 open, closed, and ranking questions. The survey comprised three parts: firstly, a consent and participant demographic details section, secondly a quantitative Likert Scale Evaluation, and finally a qualitative section:

1. The demographic details asked about participants’ gender, age, their usual centre of work, number of years of experience since initial national governing body qualification, and length of service at OBT.

2. The Likert questions were based on the Maastricht Clinical Teaching Questionnaire (Stalmeijer et al., 2010) to evaluate participants’ experiences of Learning and Adventure Manager interactions, in the framework of a CA (Table 8.1). The questions
were worded closely to those in the original Maastricht Clinical Teaching Questionnaire, with alterations made to ensure they were appropriate to the OBI context. Questions 1-3 related to modelling, 4-6 related to coaching, 7-8 related to articulation, 9-11 related to exploration, and 12-14 related to the learning environment. Participants were asked to score each item utilising a 5-point Likert scale ranging from ‘never’ to ‘always’. The intention being to gain an overview to complement the detail of the qualitative responses.

(3) The qualitative Section offered a description and short vignette to contextualise each of the six developmental approaches of a CA (modelling, coaching, scaffolding, articulation, reflection, exploration). The questions asked about participants’ experiences of, challenges with, and ideas for improvement in each of the six aspects. Questions were designed to uncover what participants understood about their PJDM development, their experiences of development within OBT, and how aspects of a CA are currently used within OBT. Phonic.ai was used to enable an audio response, offering participants the option to articulate their responses, rather than in writing. This combined approach allowed for an increased depth in response and improved response rates. Offering this choice was deemed particularly appropriate as a means of inclusivity for participants with a variety of learning needs and preferences, supporting the collection of quality data and aligning with my pragmatic research approach.

8.3.1.3. Analysis. A descriptive analysis of the quantitative data was conducted, both demographics and the Likert scale. Each response to the Likert questions were given a numerical value (1= never, 5= always), providing a mean score for each respondent, and for each question. The audio data from the survey were recorded and transcribed through Phonic.ai (2023). The audio was then listened back to, and transcripts
<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Occasionally</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L&amp;AMs demonstrated how to do things which were new to me</td>
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<td>2. L&amp;AMs created opportunities to observe them, or another instructor</td>
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<td>when appropriate</td>
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<td>3. L&amp;AMs served as a role model as to the kind of instructor I would</td>
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<tr>
<td>like to become</td>
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<td>4. L&amp;AMs gave useful feedback during or after observation of my practice</td>
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<td>5. L&amp;AMs adjusted their level of coaching and support to my level of</td>
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<tr>
<td>experience</td>
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<tr>
<td>6. L&amp;AMs offered me sufficient opportunities to deliver sessions</td>
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<tr>
<td>independently</td>
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<tr>
<td>7. L&amp;AMs asked me to provide a rationale for my actions and decisions</td>
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<tr>
<td>8. L&amp;AMs asked me questions aimed at increasing my understanding and</td>
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<tr>
<td>awareness</td>
<td></td>
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<tr>
<td>9. L&amp;AMs encouraged me to explore my strengths and weaknesses</td>
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<td></td>
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<tr>
<td>10. L&amp;AMs encouraged me to formulate goals for my development</td>
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<tr>
<td>11. L&amp;AMs encouraged me to pursue the goals set for my development</td>
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<td></td>
<td></td>
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<tr>
<td>12. L&amp;AMs created a safe learning environment</td>
<td></td>
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<tr>
<td>13. L&amp;AMs were genuinely interested in my development as an instructor</td>
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<tr>
<td>14. L&amp;AMs showed that they respected me</td>
<td></td>
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</table>
were checked and edited for accuracy by hand. Next, the transcripts were merged with the written data in order to create a single dataset. The qualitative survey data were then analysed using reflexive thematic analysis (Braun & Clarke, 2022b).

8.4. Results

8.4.1. Phase 1a: Likert Results and Discussion

Participants’ scores ranged from 23 to 70 ($M=50.56$, $SD=10.66$) out of a possible 70 (Table 8.2). The highest scores ($M=4.02, 4.22, 4.16$) were in learning environment (Questions 12 and 14) and coaching (Questions 5 and 6) suggesting these aspects were most utilised. The lowest scores ($M=2.78, 3.07, 3.18$) were in modelling (Questions 1, 2 and 3) and exploration (Question 11) suggesting these approaches are less frequently used. The greatest variation ($SD=1.13, 1.23, 1.14$) in responses were coaching, exploration, and learning environment (Questions 6, 11, and 13) suggesting that aspects of these methods were being employed by Learning and Adventure Managers inconsistently, or, being misunderstood by the respondents. Although the differences between standard deviations are small, these findings offered an initial indication of OBI’s perception of their development, to be further evaluated through the qualitative responses in Section 3 of the survey.

Additionally, there was variation between OBI centres (Table 8.3), the mean respondent score ranging from 45.15 to 53. Centre 3’s mean score was lower than all other centres, suggesting that elements of CA were less prevalent at this centre than the other three. There was also a wide variation in scores across each question in relation to each centre. For example, in Question 1, Centre 3 scored 2.60 while Centre 1 scored 3.64, and in Question 12, Centre 3 scored 5.00 while Centre 2 scored 2.77. The disparity across both centres and questions, demonstrates mixed use of CA approaches across OBT’s centres, and thus the need for an approach intentionally aligned to CA across the organisation as a whole.
Table 8.2. Mean Individual Question and Total Scores for the Online Survey Adapted Likert Scale Questions.

<table>
<thead>
<tr>
<th>CA Approach</th>
<th>Modelling</th>
<th>Coaching</th>
<th>Articulation</th>
<th>Exploration</th>
<th>Learning Environment</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>M</td>
<td>3.18</td>
<td>2.78</td>
<td>3.18</td>
<td>3.87</td>
<td>4.02</td>
<td>4.02</td>
</tr>
<tr>
<td>SD</td>
<td>1.00</td>
<td>1.01</td>
<td>1.02</td>
<td>1.00</td>
<td>1.05</td>
<td>1.13</td>
</tr>
</tbody>
</table>

Table 8.3. Mean Individual Question and Total Scores for the Online Survey Adapted Likert Scale Questions, by Outward Bound Trust Centre

<table>
<thead>
<tr>
<th>CA Approach</th>
<th>Modelling</th>
<th>Coaching</th>
<th>Articulation</th>
<th>Exploration</th>
<th>Learning Environment</th>
<th>M total score</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Centre 1</td>
<td>3.64</td>
<td>3.00</td>
<td>3.27</td>
<td>3.73</td>
<td>3.91</td>
<td>4.18</td>
<td>4.00</td>
<td>3.36</td>
</tr>
<tr>
<td>Centre 2</td>
<td>2.77</td>
<td>2.31</td>
<td>2.77</td>
<td>3.54</td>
<td>3.62</td>
<td>4.00</td>
<td>3.38</td>
<td>3.00</td>
</tr>
<tr>
<td>Centre 3</td>
<td>2.60</td>
<td>2.80</td>
<td>3.60</td>
<td>4.60</td>
<td>4.80</td>
<td>3.00</td>
<td>3.80</td>
<td>3.40</td>
</tr>
<tr>
<td>Centre 4</td>
<td>3.31</td>
<td>2.92</td>
<td>3.27</td>
<td>4.19</td>
<td>4.15</td>
<td>3.96</td>
<td>4.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>
The differences identified here were also evident through the qualitative responses in Section 3 of the survey, presented and discussed next.

### 8.4.2. Phase 1b: Qualitative Results

Through a thematic analysis, two overarching themes were identified comprising of four themes and 14 sub themes (Table 8.4). The overarching theme *Developmental needs of the OBI in conflict with the organisational needs of OBT* is made up of two themes: choosing the right approach at the right time for the individual, and challenges of PJDM development situated in the work place. The overarching theme *Developmental Culture* was made up of two themes: ‘growth as an organisational value’, and a ‘community approach to CA’. Figure 8.3 depicts the elements of CA and their relationship to each theme. While distinct, the subthemes were not mutually exclusive, represented through the thematic maps in Figures 8.4 and 8.5. The solid lines drawn on the thematic maps demonstrate the complex relationships between subthemes and themes, the dotted lines represent subthemes which are shared.
**Table 8.4. Thematic Table Showing Overarching Themes and associated Themes and Subthemes in the Use of Cognitive Apprenticeship within the Outward Bound Trust**

<table>
<thead>
<tr>
<th>Overarching Theme</th>
<th>Theme</th>
<th>Subtheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental needs of the OBI in conflict with the organisational needs of OBT</td>
<td>Choosing the right approach at the right time for the individual</td>
<td>OBIs PJDM development was a consequence of the developer’s PJDM around individualisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Appropriateness timing of freedom and independence given</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of follow up for exploratory PJDM development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The quality and quantity of CA approaches decreased over time</td>
</tr>
<tr>
<td></td>
<td>Challenges of PJDM development situated in the workplace</td>
<td>Client needs were prioritised over development needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development conflicts with OBIs’ desire/OBT’s need to do a good job</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Developing PJDM through a CA added to the OBIs’ workload and cognitive demands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sound PJDM required to provide safety</td>
</tr>
<tr>
<td>Developmental Culture</td>
<td>Development as an organisational value</td>
<td>The learning environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development was underpinned by quality of rapport between developer and OBI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OBIs value PJDM development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A mismatch between values and actions</td>
</tr>
<tr>
<td></td>
<td>A community approach to CA</td>
<td>PJDM development was multi-directional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PDJM development was done with the OBI, not to the OBI</td>
</tr>
</tbody>
</table>
Figure 8.3. Map to Show which Cognitive Apprenticeship Approaches were Evident in Each Theme
Figure 8.4. Thematic Map (Braun and Clarke, 2020) Demonstrating the Interconnected Nature of the Themes and Sub-Themes within the Overarching Theme ‘Developmental Needs of the Instructor in Conflict with the Organisational Needs’
Figure 8.5. Thematic Map (Braun and Clarke, 2020) Demonstrating the Interconnected Nature of the Themes and Sub-Themes within the Overarching Theme ‘Developmental Culture’
8.4.3. Phase 1b: Qualitative Discussion

8.4.3.1. Developmental Needs of the Outward Bound Instructor in Conflict with the Organisational Needs of the Outward Bound Trust. This overarching theme encompassed the themes ‘choosing the right approach at the right time for the individual’, and ‘challenges of a situated development in a commercial workplace’. The unique position of OBTs commercial needs, and the developmental needs of OBIs within the workplace were often in conflict, limiting individualisation, quality and ultimately the success of the CA approaches used.

8.4.3.1.1. Right Approach, Right Time. All OBIs offered examples of CA approaches being used in practice, however, the execution of these was mixed. Modelling, including the articulation of ‘expert’ thought processes, appeared to be used predominantly with OBIs in their first few months at OBT. OBI9 described, ‘I was given many opportunities to observe other senior instructors’ sessions and group instructors. However, after [the induction] this has dropped’. The longer serving OBIs (over 3 years), felt that their interactions and development with Learning and Adventure Managers in the field were minimal. OBI5 said ‘there is not enough opportunity to watch others lead... I have not had an opportunity to have a Learning and Adventure Manager out with me [in the past year]’. The opinions of newer OBIs’ (under 2 years), however, were that they felt they had more time with Learning and Adventure Managers in the field. OBI35 summarised, ‘I think if you’ve been an instructor for a while, LAMs [Learning and Adventure Managers] spend more time doing pass-outs for new staff rather than developing older staff’. The requirement to complete a set of ‘pass-outs’ appeared a contributing factor, Learning and Adventure Managers spending significantly more time with OBIs who were in their first year at OBT as a result. The scaffolding, in this sense, was robust initially and faded to the point of pass-out. However, once OBT pass-out requirements had been met, support appeared to be removed
entirely, a misapplication of scaffolding. Although OBT had the capability to approach these pass-outs in a way that assesses similar skills or environments together (a ‘national’ rather than ‘venue specific’ pass-out), the participants in this study were predominantly passed out for ‘venue-specific’ activities. Perhaps an approach which prioritised ‘national’ pass-outs as standard would be more appropriate. This approach, however, may be lengthier for OBIs to achieve, delaying the point at which OBIs could operate independently, and, therefore potentially increasing the tension between developmental and OBT’s needs. Nevertheless, it may permit Learning and Adventure Managers more time to develop the longer serving OBIs, and could promote a PJDM development scaffolded over a longer period of time.

As a result of the limited time, the CA approaches which demand less active time and input from Learning and Adventure Managers, were encouraged. This approach gave OBIs independence and freedom over their own development, however, there appeared to be insufficient support alongside this challenge. OBI1 highlighted the encouragement to explore and experiment but said, ‘these experiments are never checked or questioned’, noting the lack of scaffolding in this exploration. There was little support in reflecting on, and learning from exploration, missing the value to be gained from these CA approaches. Essentially, an ad-hoc development. Despite their desire to develop, for some OBIs this approach was too big of a challenge to engage with fully,

I was given the space to take ownership of my own exploration and CPD, however there could be more meetings with line managers. Sometimes I feel a bit out of the loop… I don't think that the, kind of, self-led works for me. Mostly because we're so busy here, there's so much going on for me and I feel like I'm still learning lots. (OBI20)
It should be recognised however, that working in the zone of proximal development necessitates increased challenge and reduced support, and by its very nature, feels uncomfortable. Still, an appropriate level of support is required. OBI10 recognised the importance of engaging in the discomfort but also acknowledged their need for external input,

I find that if I’m given the ability to explore then it will take me a long time to come out of my comfort zone to try new things, so I’m definitely someone who, reluctantly, needs that push. From what I have experienced I feel the Learning and Adventure Managers are really good at pushing you out of your comfort zone but also being there to offer the support if needed, so that you can be brought back into your comfort zone.

Both OBI10 and OBI20 were from the same centre, however, they were reflecting on their experience from different points. OBI10 joined in 2018 and OBI20 joined in 2020, both with 1 year experience prior. Perhaps the distance from the initial experience, and their development since, allowed OBI10 to understand the discomfort they felt. However, the varied views also contribute to the notion of inappropriately scaffolded independence.

Conversely, some OBIs described feeling restricted rather than unsupported, unable to access the critical experiences which would develop their PJDM. OBI28 said, ‘while the pass-out system provides a scaffold to allow people to operate inside and at the edge of their comfort zones, sometimes it can feel like a barrier to being allowed to run activities that are well within your skillset and comfort zone’. While the ‘pass-out’ process scaffolds, it appears it is not sufficiently nuanced to meet the individual needs of OBIs. The OBIs developed to a point of need for OBT, but not further. The choice of CA approach by the developer needed to be better individualised, potentially alongside an accurate self-awareness within the OBIs.
 Crucially, a CA development of PJDM relied on implementing an appropriate degree of scaffolded support at the right time for that individual, driven by the context of the situation. OBI development appears as conditional as the OBI instructional practices. The ability to get this right, therefore, must rely heavily on the developers’ PJDM and skills as a developer. An important differentiation from the OBIs’ PJDM, which has been the focus of previous Chapters.

8.4.3.1.2. Client Needs Prioritised. OBIs engaged in their development and work with clients simultaneously, as is the nature of situated learning opportunities. The OBIs felt ‘pressure’ (OBI52) to consistently deliver safe and high quality courses to the best of their ability, alongside their development. OBI7 explained, ‘there is not enough time, and you still want to make sure the group have a good week’. Participating in development, alongside actual delivery to groups, required the OBI to have sufficient cognitive capacity to manage both the safety and development of the group, and their own learning and reflection. A particularly important consideration as elements of CA such as exploration, articulation and reflection (in-action) are cognitively demanding. Thus, some OBIs felt unable to engage fully, prioritising their work over their development. The inability to access the zone of proximal development for PJDM development, again highlights the need for further refinement in the intentional application of CA. This was apparent across OBIs in the survey, however, was more often noted by newer OBIs. OBI41 described,

As a new instructor I feel a lot of time is going into adjusting and focusing on the basics and just getting by. I find it hard to add time for extra exploration into learning models and research, in between managing a group and pass-outs.

As such, ‘trial and error’ approaches may be initiated but not followed through, the OBI returning to a known solution if their first attempt at exploration was unsuccessful. OBI13
recognised exploration produces ‘opportunity for failure, which clearly creates limitations in its use with technical skill sets. It requires a level of courage to be ok with something not working’ (OBI13). Particularly, this was a case of safety. For instance, OBI18 described,

I presented my safety kit to the Learning and Adventure Manager… We had a good conversation on why, or why not I should have packed them. Despite my decision being understood I still went off and got the extra bits of kit we talked about … it seemed better to not explore with safety kit.

This excerpt highlights OBI18’s lack of confidence in their PJDM, and, consequent difficulty in creating enough cognitive capacity for PJDM to ‘do the job’ alongside engaging in exploration. Early-career OBIs in Chapter 5 were preoccupied with safety. Perhaps this focus, in fact, originated from OBT more broadly as an aspect of the shared mental model (Cannon-Bowers et al., 1993), leading to imbalanced risk-benefit decisions (as highlighted in Chapter 7). Interestingly, in contrast, some OBIs were also hesitant to explore their PJDM in pedagogy, believing that this too was high consequence. This again highlights the notion of imbalance in the risk-benefit decision, the resulting risk being that learning does not occur. A demonstration of the differing focus on situational awareness and situational demands between early-career and mid-career OBIs, noted in Chapter 7. Perhaps a greater focus on learning and pedagogy, alongside safety, may allow for the development of a more balanced risk-benefit DM process. Such an approach would clearly be possible in a well applied CA.

8.4.3.2. Developmental Culture. This overarching theme consisted of the themes ‘development as an organisational value’, and ‘a community approach to CA’. OBT’s developmental culture supported OBIs in their PJDM development through the collective desire to improve, evidenced in OBIs’ self-initiated development. However, this culture was
also reflected in OBT’s approach to PJDM development, often relying on assumed and
unintentional habit, therefore was limited in its effectiveness.

**8.4.3.2.1. Development as an Organisational Value.** Development (often
referred to as ‘coaching’ within OBT – an element of shared language) was described as ‘the
culture of this organisation’ (OBI8), a core part of the ethos. Overwhelmingly, OBIs
described this culture, the learning environment, positively. OBI2 said ‘most people are open
to being coached... I think that everyone's receptive to it, you know’. The organisational value
placed on development appears to have shaped OBIs’ progression and instilled similar
Hahnian values in them. OBI10 described their development over time, ‘I feel I’ve grown into
a very reflective person and even though I still make loads of mistakes, I’m super keen to
keep learning from these and improving my practice’, highlighting their aligned values.

Creating an emotionally safe learning environment, where OBIs felt able to challenge
and be challenged, was vital to PJDM development, particularly through approaches such as
reflection, articulation, and exploration. OBIs recognised that these approaches required a
level of vulnerability, hence the need for a feeling of emotional safety. OBI32 described,
‘both parties in the conversation need to be on a level, without one party overpowering the
other in terms of force of personality, perceived experience or authority etc’. While there
might be a difference in power (perceived or actual) between individuals, misusing this may
undermine the positive learning environment. OBI2 noted, ‘if you don’t trust that person,
don’t respect them, that's really hard’ (OBI2). These OBIs felt the success of their
development was often a result of the rapport with, and respect for, the developer (e.g.,
Learning and Adventure Manager or other senior OBIs). A key element which enabled
rapport to be developed was authenticity, as OBI39 explained, ‘I want it to be authentic and
feel like it is a genuine interest in my development, not a tick in the job specification’. 
The community of practice maintained and upheld the developmental ethos. OBIs acknowledged that improving their PJDM was a pivotal aspect of their overall development. Questioning, the ability to check and challenge decisions (articulation), and reflection, were considered by OBIs as particularly effective methods to develop their DM: ‘the most useful element to it is definitely the questions afterwards’ (OBI20). Several OBIs highlighted the use of articulation as a normalised and encouraged part of their PJDM development, referencing ‘The 5 questions’ (OBI9) (see ‘Big 5’, a reflective development tool which was developed within OBT; D. Collins and Collins, 2020). However, the use of the Big 5 did not appear universal, one OBI even proposed instigating ‘a range of almost “standardised” questions that were asked regularly’ (OBI42) to improve development. Therefore, a need to increase both understanding and implementation of articulation appears necessary.

Reflection was considered a core part of OBIs practice, as OBI16 noted, ‘I'd like to think that I'm a fairly reflective practitioner’. However, as OBI16 went on to explain, reflection was an implied expectation, ‘rarely am I challenged by anyone to be a bit more reflective’. The implicit nature of the Hahnian developmental ethos appeared to fuel a lack of explicit and intentional reflection, but also development more widely. As such, time and resources were not prioritised to support OBIs’ development. A deviation from the coherent epistemological network highlighted in previous Chapters. Consequently, OBT may wish to focus on explicit and intentional PJDM development to better align their values, intentions, and actions: a case of ‘practicing what you preach’, which, when looking beyond the surface, did not always appear to be the case.

A single OBI (who was highly qualified but had been at OBT less than a year) shared an opposing opinion to all other OBIs in their view of the development available to them. OBI21 described a desire for the staff responsible for developing OBIs to ‘justify their actions with either higher levels of practice or study’. While further training for OBT’s staff
who develop OBIs is a valid proposition, this OBI’s responses came across as judgemental, evidencing that they had little rapport with their Learning and Adventure Managers. This relationship was likely a combination of the Learning and Adventure Manager taking the wrong approaches for this OBI’s needs, and the OBI resisting integration into the community of practice. CA approaches were often applied without consideration of the intention for impact (Martindale & Collins, 2005), and thus potentially were not sufficiently refined for the more experienced OBIs’ (such as OBI21) development. Unsurprising, given that CA is not a developmental approach used deliberately by OBT, those in development roles had not undertaken training in this. Additionally, this OBI appeared not to have been integrated into the community of practice, and thus did not share the values or approach (shared mental model). This OBI was not the sole highly qualified OBI working at OBT at the time of the study, however, they were the only OBI of this level in the sample. While the OBI’s view did not correspond to other OBIs in the study, it demonstrates the impact that the staff responsible for OBIs’ development can have. The relationship and rapport, the skill in balancing the needs of the organisation and the needs of the OBI, and integration into the community of practice are vital to OBIs’ successful PJDM development.

**8.4.3.2.2. Community Cognitive Apprenticeship Approach.** In a collective approach to development, and a result of the Hahnian values within the community of practice, OBIs of all levels offered feedback, modelling, and coaching to one another. OBI3 described, ‘feedback like this has been more other instructor based’. Utilising the skills of established OBIs to support the PJDM development of OBIs newly entering the community of practice appeared to be something OBT was doing successfully. This peer-to-peer development was welcomed:

I was able to work with another Senior Instructor … they coached me in the pros and cons of bellying techniques over belay devices… at the end of the session,
they gave good constructive feedback on my session and then shared what they would have done differently. I really liked this style of coaching where they were empowering me through the learning process. (OBI52)

This community CA approach aligned with OBT’s developmental culture, giving OBI a sense of development being done with them, rather than to them. OBI42 described:

I had no experience of rowing sessions before starting at Outward Bound… I shadowed a couple of rowing sessions, including one run by [a Learning and Adventure Manager] where afterwards we had a sit-down chat about the session, and I got the opportunity to ask any questions about how they had run things. A few weeks later [the Learning and Adventure Manager] encouraged me to invite them along for another rowing session, which they offered to let me run and then provide feedback for me, before I did a pass-out. The next opportunity I had after that to row I had a successful pass-out.

An example of scaffolded development which highlights a shift in ownership of development from Learning and Adventure Manager to OBI, leading to a pass-out which assessed the OBIs PJDM in that environment (OBTs requirement from the development process). As highlighted earlier, however, this was not a universal experience.

The community of practice, particularly the cultural desire for continued development, somewhat compensated for the unintentional and inconsistent application of CA approaches. The effectiveness of PJDM development therefore would be extended by establishing a more intentional approach to development, alongside further training for the development staff in applying the CA approaches conditionally.
8.5. Phase 2

8.5.1. Method

To support my pragmatic approach, particularly, the desire for research to produce practical outcomes, the findings from Phase 1 were presented in a participatory focus group (Krueger & Casey, 2000). The group consisted of OBT staff who are responsible for the development of OBIs: Learning and Adventure Managers, Head of Learning and Adventure, and Head of Centre. This focus group allowed for collaboration, reflexive elaboration and additional data that supported and enhanced the credibility of the findings (Tracy, 2010). In addition, the focus group was exposed to an ‘alpha’ version of a potential CA based development tool which was designed based on Phase 1 findings. This was a visual representation which could be used by OBT as a tool for developers to use with OBIs (Figure 8.6), the intention being to gain feedback, and discuss. The focus group supported the formation of a co-constructed shared mental model of PJDM development, with those who would implement it. Therefore, accounting for the social complexities in building and maintaining a successful and coherent shared mental model (Ashford et al., 2023).

8.5.1.1. Participants. Participants were a representative group of OBI staff who have roles in OBI development (N=4) consisting of two Learning and Adventure Managers, one Head of Learning and Adventure, and one Head of Centre. Though a small group, this sample was representative of the staff across OBT who are responsible for the implementation of OBI development, and thus a part of the team who may apply these findings.

8.5.1.2. Procedure. The unstructured focus group lasted 75 minutes. The key findings on the use of modelling, coaching, scaffolding, articulation, reflection, and exploration, alongside an alpha version of a model arising from the findings, were used as a guide (Lofland et al., 2006). The following findings were presented: reflection was often
surface level and not focused on DM; the positive and negative impacts of the developmental culture; the challenges around development versus needs of the commercial workplace; a need to focus more on experienced OBIs’ development; the role of the community of practice in supporting development; independence and exploration were not scaffolded appropriately; the current OBT view of ‘coaching’ as limiting; the need to understand OBIs in order to individualise; and ultimately, the need for further development for the staff who develop OBIs in order to maximise the CA.

Participants were encouraged to discuss and share their thoughts and reflections on the findings and the implications for their practice. Based on the focus group a second version of the model was devised, with further versions refined via internal member reflections with the participants individually (Cavallerio et al., 2020; Tracy, 2010). These member reflections supported the creation of practically valuable outcomes, in line with my pragmatic philosophy. The intention was to ensure that OBT, and in particular, the individuals who may apply the recommendations as a result of these findings, were included in the process.
Figure 8.6. An Early ‘Alpha’ Version of a Potential Tool Representing the Findings of Phase 1, Shared with a Focus Group of Outward Bound Staff Responsible for Instructor Development.
8.5.1.3. **Analysis.** The focus group was audio recorded, and an abridged transcript was created (Krueger & Casey, 2000) and analysed thematically (Braun & Clarke, 2022b).

**8.5.2. Phase 2 Results and Discussion**

One overarching theme was identified from the focus group: A desire to enhance OBIs’ PJDM development. Consisting of two themes: acknowledgement of the current status of PJDM development, and the value of a purposeful and intentional approach to PJDM development.

8.5.2.1. **Acknowledgement of the Current Status of Professional Judgement and Decision Making Development.** The focus group agreed that the findings presented corresponded with their understanding of OBIs’ experiences of development. While some of the findings could have been met with defensiveness, instead, the focus group were open to hearing even the difficult feedback. A further confirmation of the developmental ethos within OBT. Participants were able to identify examples from their experience which matched those shared by OBIs in Phase 1. For example, following the presentation of findings around inappropriate scaffolding of independence and freedom, the focus group responded:

L&AM1: I think I’d agree with that. Folks get a lot of support up until ‘flying solo’, and then they get some feedback which gives them some direction. And then it’s up to them to want pass-outs, to find those opportunities. There are very few cases where we say, ‘right let's do this pass-out this week’, which would be more scaffolded than the freedom they have now.

HoC1: yeah, ‘off you go’

L&AM2: I think the greener [less experienced] staff struggle to initiate that too, to take ownership of it.
The focus group then discussed opportunities and potential solutions to better support this shift in roles and responsibilities, potentially scaffolding the transition over a longer period of time. The group discussed the CA approach as a means of development that avoids putting a hierarchy on approaches (e.g., exploration as superior to modelling). There was, however, a focus on the impact of Covid-19; L&AM1 said ‘My observation is that instructors who have joined since Covid, because maybe they’ve had a gap or they're new to instructing, their cognitive load is way higher’.

The Covid-19 pandemic appeared to have created an increased workload for those responsible for developing OBIs, to get the new OBIs to a point of independent delivery. With outdoor centres closed, many outdoor instructors pursued alternative careers (Barkham, 2020, 2021) generating a skill gap upon re-opening. Additionally, during this time, novice outdoor instructors who may have been able to pursue national governing body qualifications, would have found it near impossible to gain authentic client-facing experience. These experiences, alongside a CA, are crucial in developing the ability to manage both the environmental and the pedagogic needs simultaneously (Chapters 5, 6, and 7). Barry and Collins (2021) suggest novice outdoor instructors need to undergo a ‘double paradigm shift’ moving into an outdoor instructor role: first a shift from a follower being led through the environment, to a skilful, autonomous participant making personal decisions in adventurous environments. Second, a shift from autonomous participant to leader making decisions for others. Both are required to create suitable cognitive capacity when operating as an instructor in the OBIs’ working environment. Perhaps, some OBIs had not completed this shift, as a result of their skewed or limited experience, consequently adding to the developers’ workload.

Understandably, these extrinsic factors were tempting to focus on, and likely resonated particularly with the focus groups’ experience. An appealing ‘scape goat’, the absence of the
challenges associated with Covid initially appeared to the focus group as a simple ‘fix’: ‘the
good thing now is that we’re through the uplift, and so we’re working with who we’re
working with and they’re just gonna get better’ (HoL&A1). However, while a social factor in
OBI development, there were many more elements within OBT’s control which would
support OBIs’ PJDM development. The need to strengthen the skilful and intentional
application of a CA approach was highlighted to the focus group, who consequently
understood, accepted, and were positive about the need for further development.

8.5.2.2. The Value of a Purposeful and Intentional Approach to
Professional Judgement and Decision Making Development. There was an eagerness
amongst the focus group to increase the level of PJDM development that OBT were able to
facilitate. HoL&A1 said, ‘so I’ve got loads of things on my list here now, a framework for
critical reflection, deep reflection, guided questioning, peer weeks and supporting that, etc.
Can we start doing that now?!’. This attitude reflects the same Hahnian approach to
improvement in those responsible for developing OBIs, as was evident in OBIs. The
enthusiasm for enhancing OBIs’ PJDM development, taking onboard these findings as
feedback, and acting on them to establish evidence informed development was significant.
The need for further development opportunities for those who are responsible for
developing OBIs was received positively. The focus group recognised that there is always
capacity for growth, again reflecting the ethos. HoC1 said,

I’ve just made a note about your point about training and development for coaches
[staff responsible for development]. Not necessarily the [current view of
coaching], but specifically around some of this cognitive apprenticeship, and I’m
thinking about how we might use that, and some tools, and to be able to explore
it.
Finally, the concept of a tool which depicted and guided a future developmental approach aligned with a CA (Figures 8.6 and 8.7), was welcomed with enthusiasm:

Researcher: what are your thoughts on something like this? Is that something you could see as useful or--

HoL&A1: 100%!
HoC1: yes, absolutely!

The focus group were very interested in the diagram, some even requesting to take the alpha version away to further digest. There was an appetite for a more explicit and intentional approach to PJDM development; something which clarified and guided development, and could be used at multiple levels within OBT. Consequently, the final version of this tool was created in consultation with OBT through individual member reflections. The version depicted in Figure 8.7, (full size copy in Appendix B) was the result of several cycles of discussion and feedback with participants. Changes in the complexity, detail, layout, purpose, and audience were refined through this process. This resulted in a double sided A4 ‘poster’.

The front page of the document includes some ‘principles’ for development, a simplified Venn diagram, and brief introduction to CA, while the back page includes further detail and examples. The intention is for this to be used by Learning and Adventure Managers, Heads of Learning and Adventure and, Heads of Centre with OBI alongside existing OBT documentation to guide an intentional development of PJDM.
We understand the importance of developing PJDM, and actively work towards this within our community of practice.

We value development, in particular reflection. However, it’s important that we support and actively engage in this, not taking it as assumed.

Development requires effort and cognitive capacity on the part of the instructor. We will support instructors to achieve this, but recognise it is not always easy.

Balancing instructor development alongside meeting the needs of the client can be challenging. However, we will prioritise time and resources for PJDM development wherever possible. For example, protecting ‘peer’ time.

We will always do our best to choose the right approach at the right time for the individual. Building rapport and understanding each other’s wants and needs is at the heart of this individualisation.

OBT’s approach to development uses a Cognitive Apprenticeship. There are 6 key approaches which we can use to develop our Professional Judgement and Decision Making. These should be used intentionally to challenge and support development. There is no specific order and aspects overlap, which is shown by the circular Venn diagram.

The boxes around the diagram show five principles which we work to in developing ourselves and supporting the development of others.

Overview of a CA approach to make accessible to a variety of audiences within OBT.

Venn Diagram to demonstrate the interconnected and overlapping nature of the approach.

**Figure 8.7. The Final Version of a Tool to support the development of Professional Judgement and Decision Making for Outward Bound Instructors (page 1)**
Developing PJDM by Cognitive Apprenticeship

Cognitive Apprenticeship sits alongside the Instructor Development Journey, as an approach to PJDM development.

Cognitive Apprenticeship uses the Zone of Proximal Development (Stretch Zone), with support from a Decision Making 'expert' to develop thinking in-situ (Dennien, 2004). The development of Professional Judgement and Decision Making, therefore, is reliant on the 'expert' recognising and understanding their PJDM (metacognition) and the key aspects of PJDM development in others.

It is about developing the underpinning cognitive skills essential to decision making. These are not always observable and are often tacit knowledge (things you don’t know you know). Cognitive Apprenticeship aims to make tacit knowledge observable and is reliant on active participation in the community of practice.

<table>
<thead>
<tr>
<th>Description</th>
<th>OBT example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modelling</td>
<td>Demonstrating the delivery of a review. The expert pauses to share the reasoning behind their decision making throughout.</td>
</tr>
<tr>
<td>Facilitation</td>
<td>Observing and providing feedback on an Instructor's decision making around route choice on a mountain scramble.</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>The expert joins an Instructor on a canoe session in conditions which are at the edge of the Instructor's ability, providing additional safety support (reducing the cognitive load) and acting as a sounding board to discuss decisions before acting.</td>
</tr>
<tr>
<td>Articulation</td>
<td>Using the 'Big 5 Questions' to ask an Instructor about their decision making and choice of strategy to navigate their group safely through a moving water rapid.</td>
</tr>
<tr>
<td>Reflection</td>
<td>Reviewing a 'critical experience' with an expert, the Instructor compares their decision making to that of another Instructor in a similar situation.</td>
</tr>
<tr>
<td>Exploration</td>
<td>Instructor self-identifies a goal to increase the quality of their delivery on expedition. They decide to find and test a variety of strategies to allow them to hand over autonomy to their group whilst on expedition, in varied weather conditions.</td>
</tr>
</tbody>
</table>

Figure 8.7. The Final Version of a Tool to support the development of Professional Judgement and Decision Making for Outward Bound Instructors (page 2)
8.6. **General Discussion.**

Both Phase 1 and 2 findings supported that CA approaches were used for OBIs' PJDM development, however, not fully, not in relation to others, and often without intention. OBIs, however, were keen to develop their PJDM, supporting findings in previous Chapters. These OBIs also confidently acknowledged that PJDM was an essential element of their wider development. Between Chapter 4 and the present Chapter, this shift in understanding of PJDM was pivotal, emphasising the potential for further practical impact within OBT as a result of these findings.

8.6.1. **Aligning Organisational Values and Practice in Professional Judgement and Decision Making Development**

8.6.1.1. **Development in a Hyperdynamic Workplace.** While historic criticisms of situated development (e.g., the need for prior experience) may be minimised by CA approaches (Barry & Collins, 2021), there were additional difficulties presented by development through a CA in the ‘commercial’ context of the OBT workplace. According to A. Collins (2005) CA removes the constraints of workplace demands, and instead, development is informed by the pedagogical needs. However, this approach to development is more challenging when engaging in development within the workplace. Chapter 5 found much of the early-career OBIs’ cognitive capacity was occupied by delivering quality, safe courses, meeting the commercial workplace needs of OBT. Similarly, many of these OBIs found it difficult to allocate cognitive space to engage their own development alongside their work. Primarily, this was evident in the more cognitive aspects of the CA approach, such as reflecting and articulating in-action, and a reluctance to explore.

Chapter 6 highlighted that pre-planned options reduced the OBIs’ cognitive load. Logically, if this load was already high, OBIs would be unlikely to engage fully in an exploration of alternative options in-action. Coaching from someone with the bandwidth
(working memory capacity) to manage any unexpected outcomes in the field, may, therefore
enable a deeper exploration of PJDM. The use of structured time, independent of client
needs, or the use of opportunities within the ‘induction’ time to set up future development
may support OBT in this challenge.

8.6.1.2. Prioritising Professional Judgement and Decision Making

Development. Successfully implementing a CA approach to development has typically been
challenged by time constraints in many domains (Stalmeijer et al., 2009). In OBT’s case,
there was an element of organisational need driving the allocation of time and resources for
OBIs’ development. One aspect of the organisational drive was a large number of OBIs new
to the organisation, a result of the Covid-19 pandemic. The skill level of these new OBIs
required additional input which contributed to the workload of the development staff, taking
their focus and time away from the more established members of staff.

However, the pandemic was not the sole cause of the unbalanced developmental
focus. There was also an element of the developers’ skill in working with more experienced
OBIs, and, potentially the number of pass-outs required. As such, a focus on developing
skilful application of CA approaches for existing OBIs, and an appropriately scaffolded level
of exploration for newer OBIs, would be worthwhile. Furthermore, an intentional approach to
enacting the organisational values is needed, prioritising PJDM development. Although this
prioritisation may not add to the client experience in the moment, it would ultimately develop
adaptable OBIs, enhancing OBIs’ facilitation of learning and adventures for all young people
in the future; time spent ‘sharpening the saw’ before cutting down the tree (Covey, 2004).

8.6.2. A Shared Mental Model of Professional Judgement and Decision Making

Development

8.6.2.1. A Community Approach to Cognitive Apprenticeship. Algarra et
al. (2020) identify the community of practice as an important element in scaffolding
development. While supportive, OBT’s culture assumed a high level of reflective practice and articulation in their OBIs. These elements, however, appeared often to be surface level and without distinct purpose, namely towards improved PJDM. By taking a more intentional approach which encourages, challenges, and discusses reflective practice at a deeper and more critical level, OBT may be able to increase the impact of OBIs’ reflection and articulation. Additional training for those responsible for the development of OBIs, and for OBIs themselves appears necessary. A strengthened use of the Big 5 (D. Collins & Collins, 2020), a tool which was developed with OBT and is already in use, would support this focus. Additionally, recording initial reflections to revisit later may be of value (Nash et al., 2022), potentially making use of mobile devices to quickly capture either written or vocal notes (Lai & Yen, 2018).

The community of practice was bought-in to the positive developmental culture, a shared mental model, with OBIs and Learning and Adventure Managers appearing to actively influence and promote its growth (Ashford et al., 2023). The community of practice viewed development as a collaborative process on the premise that the OBI will always want to improve. Much of the development therefore, appeared to be ad-hoc, and further, was based on the interpersonal skills of the developers and the OBIs being developed (Eastabrook et al., 2022).

Algarra et al. (2020) propose multi-directional development, an innovative collaborative CA where the community of practice forms the base of the scaffolding. The existing members of the community of practice support the new members in developing shared language, views, and behaviour. Such an approach would appear to elevate all of the community of practice; all members developing alongside each other as a result of reciprocal, cyclic interaction. This collaborative CA centres around sharing a common language, supportive staff, critical friends, experts, and shared mental model. As such, OBT would
benefit from constructing a coherent shared mental model of staff development, aligned with
a CA and their Hahnian philosophy. To achieve this, an intentional and skilful
implementation is necessary. Central to this implementation, is the prioritisation of OBIs
PJDM development, and, further training for those responsible for OBI development in the
intentional use of CA approaches. In particular, a focus on the appropriate application of
scaffolding for the individual OBIs’ needs. The CA approach to OBI PJDM development was
conceptualised as a dynamic, intentional and deliberate practice (illustrated by the Venn
diagram; Figure 8.7), with a focus on collaborative and continual PJDM development.

8.6.2.2. Outward Bound Instructor Developers’ Professional Judgement

and Decision Making. Pimmer et al. (2012) suggest that rather than beginning with
modelling, CA could start with exploration. However, it appears that, in the OBT context at
least, a CA approach does not take a linear sequence at all. Instead, developers may move
between these approaches, dependent on the context. This process mirrors and extends OBIs’
PJDM (Chapter 6), the suitability of each approach being dependent on the situation, and the
individual. The use of CA is conditional, which is also true of skilful coaching (D. Collins et
al., 2022). The development of PJDM through CA is therefore dependent on the developers’
situational comprehension, ability, and self-efficacy (Bandura, 1977) to enact a variety of
options (CA approaches), and choice of approach to develop independent performance: the
developers’ PJDM (Eastabrook et al., 2022). Developers may favour approaches they are
more comfortable, or familiar with, and avoid others, without this conscious awareness. The
inconsistent use of CA approaches by developers potentially resulting from being uninformed
of the full spectrum of approaches within a CA, and, as an avoidance of potential stress from
having a low self-efficacy in utilising approaches which are less familiar (Bandura, 1977;
Lazarus & Folkman, 1984). Those developing OBIs towards AEx must, therefore, be
adaptive experts with CA themselves: operationalising their intention and transferring their
understanding to each OBI and situation. It is for the ‘expert’ to utilise the most appropriate method for the individual at the time: it depends!

OBT’s current approach to development is framed by Whitmore’s (2017) view of business coaching versus mentoring, where learner-led approaches such as reflection, exploration and articulation by the OBI are favoured over approaches such as modelling, scaffolding and coaching. This differentiation, however, is misleading in a CA approach, and assumes that the other aspects of CA (modelling, scaffolding, coaching) are applied skilfully. A fixed view such as this may also reduce the number of options the developer feels are available to them (Chapter 6), potentially, leading to an inappropriate choice of approach.

Consequently, for those responsible for the development of OBIs, further development aligned with a CA is essential. Developing the developers effectively, therefore, requires further research. However, the findings so far suggest this training would benefit from a focus on CA, alongside the components of OBI PJDM (Chapters 4, 5, 6, and 7). That is, understanding and developing situational comprehension, creating appropriate options, development of metacognition, and deep critical reflection to support this. The adoption of a CA approach should be an achievable proposition, given the implicit use of many of its elements already (Merritt et al., 2018). However, this adoption would be supported by a shift in mindset towards the development of PJDM that is more coherent with the value OBT places on development. It is only when this development is both valued, and prioritised, that PJDM development and a CA approach will be maximised.

8.7. Chapter Summary

The findings highlighted that the six elements, modelling, coaching, scaffolding, articulation, reflection and exploration, of CA are used across OBI development. However, CA is not currently a deliberate approach to development within OBT, and thus, unsurprisingly, its use was unintentional and insufficiently integrated. Modelling by Learning and Adventure
Managers was not frequent but was more often used between peers. Coaching was used frequently, including by peers, however, both modelling and coaching decreased as OBIs increased in experience and ability. Scaffolding was successful to a point, the point of pass-out. However, independence was prioritised too soon and without the appropriate level of support for some, particularly OBIs earlier in their career. Reflection was commonplace within OBT, yet, because of its implicit nature tended not to be deep, critical, or focused. Similarly, while articulation was utilised, it too appeared surface-level at times, and increased cognitive load in-action. The community of practice played a large role in PJDM development. This community approach to CA was supported by the developmental culture and Hahnian values within OBT. The gaps in the uses of the six CA approaches were partially mitigated by the strength of the community of practice.

The potential for success in a CA approach appeared to rely on the PJDM of those guiding the development process; the developer’s choice of approach, based on their skill with those tools and their comprehension of the development situation. A synergistic rather than linear process. Going forwards, prioritisation of development alongside commercial workplace needs for both OBIs and for those developing OBIs, while challenging, is essential if OBT are to improve their facilitation of PJDM development. A deliberate use of CA would support the development of adaptable and cognitively agile OBIs. OBIs who would ultimately be of greater value to OBT, a longer term development than is currently conceived.

In turn, those responsible for development must then become more skilled with the approaches to continue to develop the consequently more experienced and qualified staff. The staff responsible for OBIs’ development were eager to take on this challenge, and, to engage in further training to support it. A potential tool for OBI PJDM development was therefore designed in conjunction with OBT to provide direction for a future CA approach.
9. Discussion, Implications for Practice, Recommendations, Limitations, Further Research and Conclusions

This thesis has aimed to understand how OBIs make judgements and decisions, and to identify how these judgement and decision making processes may be best developed by OBT. The findings of Chapters 4, 5, 6, 7 and 8 have offered insight into the characteristics of OBIs’ expertise, the components of their PJDM at different stages of their development, the significant aspects of OBIs’ PJDM development, and the current developmental practices of OBT. This final Chapter summarises and outlines the findings from Chapters 4, 5, 6, 7, and 8, and their contribution to knowledge for OBT, the wider adventure education sector, and existing research literature. The Chapter then considers implications for practice for both OBT and the sector, makes recommendations, discusses the strengths and limitations of the work, and outlines the potential for further research before offering concluding thoughts.

9.1. Discussion and Implications for Practice

9.1.1. Summary of Findings

Considered broadly, this thesis has emphasised the professional responsibility that outdoor instructors hold in making decisions which both keep people safe, and facilitate learning in the hyperdynamic environment. It has highlighted the need for a professional and intentional approach to PJDM development; that outdoor instructors’ PJDM can, and should, be developed intentionally. Existing research into PJDM development for outdoor instructors has been lacking in direction and specifics, often simplistically citing the need for ‘experience’, or elaborating theory from alternate contexts such as, miliary, nursing, teaching, and traditional sports coaching to the adventure education, and specifically, OBI context. These findings therefore contribute a more detailed knowledge of OBIs’ PJDM, extending
existing research, and affirming aspects of research within other domains which may be
transferred.

9.1.1.1. **Chapter 4.** This Chapter demonstrated that OBT, and the sector more
widely, required adaptive experts – OBIs who could make effective judgements and decisions
in the field. These findings validated Tozer et al.’s (2007) proposition that AEx is an essential
aspect of outdoor instructors’ practice. AEx and the associated flexibility required high level
metacognition, and reflective ability both in, and on-action, yet a level of adaptability was
found in OBIs of all levels, highlighting that AEx is not reserved solely for experts. This
contributes knowledge to the sparse existing research into non-expert DM in the adventure
education domain (cf. Galloway, 2002; Martin et al., 2009). The degree of adaptability for
OBIs, however, was constrained by OBT’s organisational demands. The findings showed that
AEx may be conceived of as a spectrum; an expanding corridor of adaptability increasing
throughout development, as opposed to AEx building on routine expertise. A novel finding in
this setting, and an important contribution to the existing body of work in AEx, reaffirming
Jensen et al.’s (2022) conclusions, and extending this to the adventure education context.
These findings have made an original contribution to knowledge, and have been reported in a
peer reviewed article, cited 52 times to date (Mees et al., 2020)

9.1.1.2. **Chapter 5.** Early-career OBIs’ cognitive focus was predominantly on
the situational awareness, associated with a preoccupation with safety. This focus on safety,
combined with the need to manage the related situational demands, created high cognitive
load. The OBIs invested a great deal of cognitive effort into session planning due to the OBT
requirement, and a desire to manage their cognitive load in-action. Consequently, they felt
‘attached’ to their planned session, resulting in reduced adaptability. Early-career OBIs’
PJDM development was primarily through their current and previous community of practice,
requiring the ability to learn from their fellow, more experienced colleagues. These findings
were reported in a peer reviewed article with 14 citations to date (Mees et al., 2021), demonstrating their original contribution to scientific knowledge.

9.1.1.3. Chapter 6. Mid-career OBIs were more technically skilled, and more adept in their judgements and decisions regarding safety matters. These skills enabled the OBI to shift focus towards the pedagogical needs of the group; the situational demands created by the environment and group. An epistemological network was observable between the OBIs’ beliefs and their practice (supporting previous work by L. Collins et al., 2014 and Grecic & Collins, 2013), but also between OBT’s Hahnian educational philosophies (organisational beliefs) and OBI’s practice (extending existing work by Barry et al., 2023; Christian et al., 2017; Grecic & Collins, 2013). This finding suggested a more complex epistemological network which linked the OBI to OBT.

9.1.1.4. Chapter 7. This Chapter compared and discussed the findings in early and mid-career OBIs’ PJDM. The Chapter highlighted that OBIs’ PJDM was reliant on 3 attributes; (1) a high level of situational comprehension – a combination of situational awareness and situational demands, (2) having a variety of pre-filtered options, and (3) was highly dependent on the situation (the conditions) in which the PJDM and its development took place. OBIs’ PJDM was developed through an increase in these attributes via OBT’s community of practice, in an approach akin to a CA.

As the OBIs moved from early to mid-career, their levels of situational comprehension increased, shifting in emphasis from situational awareness towards situational demands. This shift was associated with the OBIs’ increasingly sophisticated epistemology, and a reduction in the cognitive demands associated with PJDM concerning safety. These factors resulted in an increased desire, and available cognitive resource, to address pedagogic and developmental needs of the group. The situational awareness and situational demands were combined as a situational comprehension, to which Endsley’s (1997) levels of
situational awareness (perceive, comprehend, project) also appeared to apply. These findings offer new information and comprehension for OBT regarding OBIs’ professional practice. The particular significance of this to the research literature being the extension of situational awareness, to a situational comprehension in a parallel three levels (Endsley, 2012). This situational comprehension comprises the situational awareness, a deeper understanding of the complex situational demands, and their interaction. The implication for future researchers investigating within OBT, is to be aware of, and consider that the demands of the situation created by the organisation, the task, and the environment itself are factors which must be managed within the OBIs working memory, and therefore impact their practice.

The findings around OBIs having a variety of pre-filtered options contribute to the existing literature on contextual priors (Gredin et al., 2018). The findings support prior research by Bianco et al. (2022) by extending the observations of contextual priors in aspects of DM which include the comprehension of both social and physical factors. As the OBIs developed, they were able to better filter, prioritise and be critical of information, in turn improving their ability to minimise cognitive load, increase resource available at a metacognitive level, and consequently enhance their PJDM. Notably, and in contrast to other studies, (see Nash et al., 2022), the OBIs studied in this thesis were both reflective, and were aware of their reflective practice. This attribute may be unique to OBIs, highlighting high levels of metacognition and linking with their underpinning Hahnian philosophy. This conscious reflection on action, and the coherence between organisational and personal philosophy (epistemological network) may be an aspect which researchers investigating within adventure education, and specifically OBT, wish to take into consideration in design and analysis of future research (see also Barry et al., 2023). This PJDM demanded high levels of reflection in-action, however OBIs tended to reflect on-action. This was partly due to a limited cognitive resource, and partly the shared mental model of reflection within OBIs’
community of practice. The suggestion, therefore, is that OBIs’ reflective and metacognitive skills require further development (also highlighted in Chapter 8).

OBIs’ practical PJDM was best developed contextually, situated in real-world practice: learning through the ‘wild’ and hyperdynamic workplace described in Chapters 1 and 2. Quality critical experiences within the zone of proximal development needed high fidelity, that is, validity (real life, real consequence), purpose, to be situated, and include intentional reflection in and on-action. Notably, OBIs identified that national governing body training did not support their development towards being the adaptive experts required by OBT and the sector. Instead, effective high quality reflection on suitable critical experiences, metacognition, a supportive community of practice, and shared mental models, supported OBIs’ PJDM development. These findings expand existing connections made theoretically between DM theory and outdoor instructors, for example by Galloway (2002) and Culp (2016), demonstrating DM development approaches in practice. OBIs’ personal experience in the hyperdynamic outdoor environment appeared to initially establish some of the essential components of PJDM (e.g., situational awareness, planning, reflection), and were enhanced through interaction within their community of practice. The findings highlighted the importance of a situated development (Lave & Wenger, 1991), as a means of developing conditional knowledge (Nash & Collins, 2006) and shared mental models (Cannon-Bowers et al., 1993). The findings supported this approach with OBIs of all levels, while acknowledging the need for a level of prior knowledge (e.g., the development of a small number of component parts), concurring with some criticisms of situated learning for neophyte outdoor instructors (Aadland et al., 2017).

OBT’s community of practice held, transferred, and constructed knowledge (institutional and personal). However, there was opportunity to enhance formal and informal aspects of PJDM development, through a more intentional use of the community of practice,
also noted in Chapter 8. The development approaches applied by OBT, identified by OBIs, had many aspects in common with a CA, in particular, examples of coaching, scaffolding, reflection and articulation. These findings, and those noted in Chapter 6, were reported in a peer reviewed paper (Mees & Collins, 2022), highlighting their original contribution to knowledge, and have been cited 12 times to date.

9.1.1.5. Chapter 8. This Chapter found that an unintentional CA approach is currently applied by OBT in the development of their OBIs, however with mixed success. The six approaches (modelling, coaching, scaffolding, articulation, reflection and exploration; A. Collins, 2005) were utilised, however, inconsistently. Modelling and coaching were used less frequently and less skilfully as OBIs developed; scaffolding was successful initially, however exploration was prioritised by OBT early on, and ineffectively scaffolded; reflection and articulation were common, but predominantly low-level. The use of these approaches required an intentional consideration and application by OBT and OBIs. OBT’s community of practice, however, supported PJDM development, compensating, in part, for the poor application of the CA approaches. These findings highlight that those intending to put theory into practice and utilise a CA approach, should consider that the developer is likely to preferentially utilise the method(s) within the approach with which they are most comfortable and confident. Therefore, this approach may be something which requires further development within the developer to maximise its potential.

Whilst CA has recently been deemed a means to adult development in the workplace (e.g., Ahmad et al., 2018; Stalmeijer et al., 2009; Swaim, 2017), it has only been suggested as an approach to development for professionals in the adventure education domain thus far (Barry & Collins, 2021). The findings in this thesis deepen our current understanding about how OBIs’ PJDM may be developed, expanding the use of a CA to the OBI context. A potential path to develop early and mid-career OBIs towards AEx is offered, with examples
of the success of this approach in action, and of where it may be enhanced. This offers a
specific example within OBT, which can be considered a contribution to the broader
literature in outdoor instructor development.

The epistemological network between OBT’s philosophies and OBIs’ practice did not
extend to OBT’s development of their OBIs. It was this lack of philosophical drive in
development that undermined the potential for an intentional development of OBIs’ PJDM,
and thus the effective use of approaches in the CA. The developmental Hahnian philosophy,
central to OBT’s values, therefore, requires operationalising by OBT in their approach to
staff development. A tension was evident between OBT’s commercial needs—the provision of
adventure education—and the OBIs’ development within the workplace. While there will
remain a conflict between these two goals (highlighting the potential challenges in
implementing findings in real-world practice), the tension was perpetuated by OBT’s
incoherent epistemological network.

9.1.2. Practical Implications of the Findings

Reflecting my pragmatic research philosophy, the implications of the findings in practice
were of paramount importance, and the goal of this research from the outset. I therefore
discuss the implications from an OBT and wider sector perspective, before highlighting
specific recommendations for practice.

OIs across the sector were found to operate on a spectrum of AEx, PJDM being an
essential aspect of this. Evidently, OBT does currently develop adaptive experts, or at least,
those who continue as OBIs are successful due to their development of AEx. However, AEx
development was not intentional, and therefore did not achieve its potential. Additionally,
national governing body qualifications, particularly entry level qualifications, did not appear
to support the development of AEx. As such, a need to facilitate a development which
supports OBIs, and outdoor instructors across the sector, to increase their AEx is essential.
This may be supported by creating new, and capitalising on existing, opportunities for quality critical experiences. Additionally, a development of AEx may be achieved through an evaluation of existing OBT training, identifying where routine and where AEx are encouraged, and modifying this training to encourage AEx development.

This development route, however, will take considerably longer than the development of routine expertise. Routine expertise, therefore, may appear an appealing approach when there is pressure to rapidly develop OBIs to the point of independence. OBT’s epistemology will clearly influence the success of this. An epistemology that values fast development to the point of need, or that desires OBIs who follow procedures, would encourage routine expertise. Whereas, an epistemology that values continued development would support this slower, but more adaptive development. OBT may achieve this by encouraging senior management groups to appreciate the value in this approach, beginning at the centre of the organisation. With the above implications considered, I recommend that:

- The adventure sector considers an intentional facilitation of the development of AEx, from the outset of development.
- OBT intentionally support a consistent development of AEx in their OBIs.

Early career OBIs were preoccupied with safety and their situational awareness; deeply considering many options resulting in a high cognitive load, and limiting adaptability. OBIs must therefore develop strategies to manage their cognitive load. Additionally, OBT must support the development of these strategies, being mindful of the potential to add to this load unnecessarily, and the impact on PJDM such as, decision fatigue (Pignatiello et al., 2020) or a paradox of choice (B. Schwartz, 2005). Although OBIs did not explicitly identify these as issues associated with their high cognitive loads, they were evident in early-career OBIs desire to stick closely to their original plans. As such, my recommendation is, that:
- OBT scaffold the development of OBIs with awareness for their cognitive load, supporting OBIs to manage this where possible.

Mid-career OBIs’ focus on the situational demands highlighted that OBIs do, in fact, require some fundamental routine technical and safety skills. These component parts support skilful safety management, on which pedagogy can build. The implication being that, in contrast to Chapter 4, some component parts, or functional units, must be developed as discrete skills, before high levels of AEx can be achieved in-action – a more nuanced view of development. However, these component parts and functional units, should be developed with the end application of AEx in mind. Crucially, keeping these discrete component parts small, rather than creating large, complex systems of routine would support this goal. The inconsistency in PJDM development across OBT found in Chapter 8 suggests that, at present, these component parts vary across OBT, creating variation in the adaptability and flexibility of OBIs’ PJDM. OBT therefore requires a more nuanced comprehension of OBIs’ PJDM development, and, a consistent view of the intended impact as a result. As such, I recommend that:

- OBT identify, with consistency across the organisation, the essential component parts which require a routine approach, and explicitly develop these, with an adaptive application in mind.

For example, to achieve this, Heads of Centres across OBT could jointly assess their current training provision (e.g., annual gorge walking training), to decide on which specific aspects require a routine approach (e.g., standard operating procedures, such as the process for attaching a carabiner to a climbing harness from a distance). These should be kept to a minimum and trained as a specific aspect within a broader adaptive approach (e.g., as one tool which an OBI may use, dependent on the needs of the group and environment).
Considering the progressive development in the ‘adaptive corridor’ it would be reasonable to expect a proportional AEEx for early-career OBIs. Early-career OBIs should develop an awareness of the need work towards an increasingly adaptive approach, learning cognitive and physical skills with the knowledge that these should become transferable, even if they are unable to transfer these rapidly in action at their current level. They should, therefore, be developing conditional knowledge, an understanding that initial routines will likely need to be adapted as they develop to work in increasingly dynamic environments. A focus on developing underpinning skills (e.g., metacognition, reflective practice, situational awareness), which support adaptability in the OBI environment, would support this approach. Some of these expectations may also be appropriate for novice outdoor instructors’ development, however this would require further investigation (cf. Barry & Collins, 2021).

The shift in focus from situational awareness to situational demands, associated with improved metacognition, an increasingly sophisticated epistemology, and ability to filter information, was a sign of OBIs’ increasing PJDM development. This allowed OBIs to identify and pre-select a range of options to choose from, appropriate to the context. This high level situational comprehension requires an intentional development. L. Collins and Collins (2022) offer an approach to developing situational awareness which encourages the decision maker to increase the richness and depth of their level one (perception) descriptions towards sharing characteristics of experts’ descriptions as a basis for further development. An approach which could potentially be extended to develop high level situational comprehension. Therefore, an underpinning skill in OBIs’ PJDM is the ability to perceive, comprehend, and predict the elements in situational awareness and situational demands, and their interaction, filtering this information for the most salient aspects. I recommend that:

- OBT consider means of intentionally facilitating the development of high levels of situational comprehension for OBIs.
Coinciding with the start of this research, OBT embraced a decision to actively develop metacognition by using the ‘Big 5’ questions to structure OBIs’ on-action reflection (D. Collins & Collins, 2020). An improved metacognition was evident through the findings in this thesis, however, was not consistent across all of OBT; not all OBIs, were aware of the ‘Big 5’ approach. Although OBIs saw the value in reflection and metacognition, in practice these were often performed at a low level – a result of the implicit requirement for reflection within OBT. The inconsistency consequently highlights OBT’s need for continued development of metacognition. Encouraging deeper reflection also requires further work, which may be achieved initially though developing the use of the ‘Big 5’ as an existing tool. I therefore recommend that:

- OBT continue to develop metacognition across the organisation, including the development and consistent use of the ‘Big 5’.

The OBIs required authentic high fidelity, personal and professional experience as a basis for their development. PJDM developed when these experiences were within the individual’s optimal level of challenge, similar to the zone of proximal development. This meta-knowledge will allow OBT and the OBIs to create, and prioritise, opportunities to engage in these critical experiences. The challenge, however, is that the OBI may not have the situational comprehension, or PJDM, to operate safely at this level without explicit scaffolded support. Early and mid-career OBIs, require differing levels of support to maintain safety for the individuals and the group under their care. A careful balance between consequence and the technical skill, DM ability, and cognitive resource of the OBI is necessary. OBT can feasibly scaffold OBIs’ professional experience offering additional support, or limiting the environments that OBIs operate in until they have achieved a pass-out. Scaffolding personal experiences, however, offers a greater challenge, though not an impossible one. For example, OBT may support by providing easy access to equipment,
creating opportunities to discuss and encourage adventurous plans with more experienced members of the community of practice, or, supporting OBIs to experience conditions within their zone of proximal development with logistics (such as a drop-out or pick-up to enable the OBI to undertake a journey). OBT may even consider offering some flexibility with programmed hours (where possible around commercial workplace commitments) when conditions are ideal for personal adventures (such as Patagonia’s approach, allowing employees to get out when the ‘surf’s up’ and complete their work later; Chouinard, 2016).

While some of these suggestions already occur within OBT, intentionally supporting broad and deep experiences (and reflection on these) for all OBIs is vital.

Developing PJDM through critical experiences was supported and enhanced by the OBIs’ community of practice. In particular, professional experiences were enhanced through observation (modelling), reflection, articulation, and coaching by more experienced OBIs. However, simply being employed by OBT does not grant immediate entry to the community of practice, some introduction is required. For OBIs new to the community of practice, therefore, some form of training in working alongside more experienced OBIs would be of value (Nonaka et al., 2000). Recommendations therefore are, that:

- OBT scaffold critical experiences for OBIs in a professional context, and endeavour to intentionally support personal experience in the zone of proximal development.
- OBT actively support entry into the community of practice through OBIs’ induction period, and, the development of existing OBIs in their role as part of the community of practice.

A CA approach proved to be one method which was successful in developing PJDM, and given outdoor instructors’ characteristic, though anecdotal, preference for active learning, a CA seems a logical stance. These findings support the notion of a CA as an approach to coach development in other domains (e.g., Downes & Collins, 2023).
OBT’s existing PJDM development, however, was inconsistent and unintentional.

This was likely a result of the ad-hoc adoption of CA development approaches, and an associated unintentional approach to training the OBT staff who develop OBIs (e.g., Learning and Adventure Managers, Heads of Learning and Adventure, Heads of Centre). These developers had some training and experience in developing OBIs, nevertheless, the intentional and appropriate use of these CA approaches at the right time, in the right place, with the right person – the developers’ PJDM – was lacking. The current inconsistent use of CA approaches appeared to be a combined result of this lack of knowledge and an epistemology which did not prioritise development (Chapter 8). As such, further training seems essential.

The evidence suggests that for those responsible for development of OBIs, there is a need for growth in three areas. (1) Deep and nuanced comprehension of the underpinning components of OBI PJDM (Chapters 4, 5, 6, and 7). (2) An AEx approach, for example, avoiding process, procedure and routine where appropriate, embracing reflection and articulation of the conditionality of skill and knowledge in context. (3) Comprehensive understanding of CA approaches and their skilful use in conjunction with the previous two aspects. I therefore recommend that:

- OBT pursue further training for the developers of OBIs (e.g., Learning and Adventure Managers, Heads of Learning and Adventure, Heads of Centre) in the underpinning aspects of PJDM, AEx, and a CA approach.

- The construction of a shared mental model of PJDM development is prioritised. Based on a CA approach, aligned across the whole of OBT, and coherent with OBT’s Hahnian philosophy.

Given the existing use of some CA approaches, constructing a shared mental model based on a CA, and adopting this consistently across OBT should be entirely feasible (Merritt
et al., 2018). However, this adoption would require a shift in mindset. OBT’s explicit educational philosophies did not appear to apply to OBT’s development of OBIs – a misalignment in the epistemological network. Interestingly, while OBT has a risk-management committee, currently there is no pedagogical equivalent, illustrating the point. One strategy to support a more aligned epistemology internally, may be the instigation of an equivalent ‘learning and development committee’; a group responsible for ensuring development is prioritised across OBT (for those responsible for developing OBIs, for OBIs, and for the young people who visit OBT).

This level of organisational change is rarely straightforward however, and often meets some resistance, generally from employees ‘on the ground’ (Rehman et al., 2021). Commensurate with OBT’s long history, there are also some established members of staff, who, despite the positive response from Learning and Adventure Managers, Heads of Learning and Adventure, and Heads of Centre in Chapter 8, could find it challenging to make this mindset shift. Although the shift should be realistic given it is working towards an increased alignment of values and action, it again, emphasises the reality and potential challenge of implementing this research in practice. OBT, and its staff, will need to approach this challenge open-mindedly, accepting that the status quo can, and should, be improved upon. It is only when this development is valued and prioritised that PJDM development, and a CA approach, will be maximised, aligning with the Hahnian approaches. I therefore recommend that:

- OBT instigate a professional group at a senior management level who explicitly consider the quality of learning and development in line with OBT’s philosophy, supporting an aligned approach across OBT (akin to the existing ‘risk-management committee’).
OBT prioritise intentional development of OBIs’ PJDM, guided by their Hahnian educational philosophy.

While there are valuable existing training suggestions for developing AEx (Hutton et al., 2017) and DM in action (e.g., Hydra Simulation Suites found in universities and training centres; Hydra Foundation, 2024) these scenario based approaches can be time consuming and therefore costly, particularly given OBT’s charity status. OBIs are allocated a small number of days each year for specific training, however this is already assigned to meet OBT requirements. OBIs’ development, therefore, predominantly happens ‘in the field’, with Learning and Adventure Managers working alongside while the OBIs fulfil their day-to-day role. Adding additional training time for all OBIs to run scenario based training would likely be unachievable for OBT. Therefore, exploring options to harness the essence of these propositions, through a CA integrated into the OBIs normal working schedule seems more practical. Additionally, considering modifications to existing training to be more aligned with an AEx approach would be valuable. Training the developers, however, is essential, allowing them to develop OBIs more effectively through their work.

As an example of how these recommendations may be implemented, I offer a vignette. The recommendations highlight a need for addition training and development for the OBI developer, in order to support the development of OBIs, and, the organisational culture. The vignette firstly describes a ‘typical’ OBI developer, followed by an example of a process which could be individualised to each OBI developer.
A typical OBI developer...

Jenna is a Learning and Adventure Manager working at OBT’s Ullswater Centre, based in the lake district. She has worked for OBT for 11 years, initially as an OBI, then Senior OBI, and 3 years ago was promoted into a Learning and Adventure Manager role. Jenna has held her initial national governing body qualifications (Summer Mountain leader, Paddlesport Instructor, Rock Climbing Instructor) for around 12 years, and has since gained two higher level national governing body qualifications: Winter Mountain Leader award, and Advanced Canoe Leader Award. She is currently working towards the Mountaineering and Climbing Instructor Award.

Jenna is a manager for 10 OBIs and responsible for management processes (e.g., holiday requests, sickness, action plans and associated pay-scale progression), and holds areas of responsibility which she leads within her centre, for example, inducting new OBIs. Alongside the other three Learning and adventure managers, one Head of Learning and Adventure, and one Head of Centre, Jenna’s role is to support the development of all OBIs working at OBT’s Ullswater Centre. This is achieved through working alongside OBIs in the field, while they are delivering courses for their groups of young people (fulfilling the commercial aspects of their role). Jenna also delivers annual training days to OBIs, typically each OBI participates in a day in each of the following areas: Gorge walking, paddle sports, rock climbing.

Jenna has some existing experience in teaching and training OBIs which she gained through her work as a Senior OBI. She was given an induction into her role by the Head of Learning and Adventure at her centre. Jenna has predominantly developed OBIs by transferring her knowledge of developing young people in the outdoors. She is most comfortable developing technical skills and therefore focuses her time in this area. Jenna has completed a Level 5 Certificate in Coaching and Mentoring with the Institute of Learning and Management. This certificate was based on Whitmore’s (2017) view of coaching and mentoring for organisational performance within a business context (discussed in Chapter 8) and has been transferred to OBTs context by those who have undertaken the certification.

Jenna is confident in modelling but tends to avoid it as it doesn’t align with her view of ‘good’ teaching from her previous training (coaching and mentoring certificate). Jenna is confident in coaching newer OBIs, however, uses this approach significantly less often when working with more experienced OBIs. Jenna’s own reflective practice is good, but she rarely discusses reflective practice with the OBIs she works with, or challenges them to reflect deeply and critically on their DM. Developing Jenna’s articulation would support her use of coaching, reflection, modelling and exploration, in particular with more experienced OBIs who require a more skilful application of these approaches to match their experience and skill level.
How the development could proceed…

In order to support Jenna and other Learning and Adventure Managers in their use of a CA approach to develop their OBIs PJDM, the following scaffolded approach is implemented:

1) *A facilitated day of training by a subject matter ‘expert’*. The first half of the training involves technical input on the key components of OBIs’ PJDM (e.g., situational comprehension, metacognitive development, a sophisticated epistemology - and the role of the epistemological network, conditional knowledge, quality reflective practice, developing and pre-filtering options for in the field decision making). This begins Jenna’s training in understanding of the components she will be trying to develop in the OBIs. Participants on the training reflect on OBIs practice, and on their own experiences, and share examples with the group, supporting the development of a shared mental model. The second half of the day focuses on the process of development, introducing the CA approach and teaching methods (modelling, coaching, scaffolding, articulation, reflection, and exploration). It follows a similar process of input, discussion, reflection, and sharing. At the end of the training, participants identify a specific area of growth, individual to them, to explore further, based on their reflection on their own practice throughout the day. Jenna’s goal is to develop her own articulation, and to support more experienced OBIs to develop their articulation.

2) *Supported self-directed development*. Alongside other Learning and adventure managers at Ullswater Jenna will work on her personal actions. Jenna will observe (specifically focussing on their articulation) a Head of Learning and Adventure while they use CA methods to develop an aspect of PJDM with an OBI (modelling). Jenna will offer them feedback on her observations (coaching). They discuss (articulation) throughout the day, making explicit links to the content of the training. The pair will reflect on the session together, they may choose to use ‘big 5’ questions as an initial guide.

At a later date (organised around the needs of the centre) they will switch, and Jenna will explore ways of working with an OBI to develop an aspect of their PJDM, scaffolding their development at both macro (6 months) and micro (session) levels. The Head of Learning and Adventure challenges Jenna to operate in her zone of proximal development (scaffolding), offers feedback throughout the day (coaching), and encourages articulation of rich descriptions of the situation (articulation) (L. Collins & Collins, 2022).
3) **Continued self-directed development within the role.** Jenna will continue to explore ways to develop OBIs’ PJDM towards AEx using a CA approach, individualised to each OBI. Jenna and her colleagues are encouraged to share their experience of their own developments with each other, ask questions (articulate and reflect) and gain feedback and support (coaching and scaffolding). Every 2-3 months, this sharing is done across centres, via a video call, to support the development of a shared mental model across OBT as a whole. At these sessions Jenna reviews her progress with initial targets set, and establishes new areas to explore.

4) **Peer-supported development.** Jenna pairs up with another Learning and Adventure Manager working with an OBI for a second day of modelling and coaching each other. They follow a similar process to the previous targeted development day (stage 2), comparing their practice to each other’s. Feedback focusses on their use of the appropriate method at the right time for the individual to allow the OBI to work within their zone of proximal development, and scaffolding of the OBIs cognitive load.

5) **A facilitated day of training by a subject matter ‘expert’.** Around 6 months later Jenna attends a second training day the ‘expert’. This session reviews progress made and offers additional support individual to each learning and adventure manager. The input in this training session focusses on the developmental culture within OBT, intending to begin the development of shared mental model across OBT. The expert offers technical input on community of practice, the importance of personal and professional experience, and viewing development from an AEx perspective. Jenna and her colleagues reflect on their community of practice and their integration of new OBIs into it. They explore how they may encourage and scaffold personal experience, and build opportunity and time for development for OBIs alongside their role.

Finally, Jenna and the other Learning and Adventure Managers reflect on the content, and desired outcomes, of OBIs’ current training provision. To support a shared approach across the organisation, they are asked to reach a consensus about which aspects of the syllabi can take an AEx approach, and which specifics must initially take a routine expertise approach.

6) **Cyclical continued development.** Stages 3 and 4 are repeated. Overseen and supported by the Head of Learning and Adventure, Jenna and other Learning and Adventure Managers to continue their development in skilfully applying a CA approach and developing OBIs towards AEx. The intention would be for the new aspects of OBI developers’ practice to become embedded as they develop. These discussions, reflections, articulation, and curiosity about the way in which others work to become a natural aspect of the community of practice and support a continued development.

1

2

The vignette offers an example of a scaffolded development for Learning and

3

Adventure Managers in their ability to develop OBIs’ PJDM, guided by a CA approach and

4

OBTs’ Hahnian philosophy. It utilises modelling and coaching (in paired development)
scaffolding (through the introduction of different aspects by the ‘expert’ periodically),
reflection and articulation (both in their pairs, between Learning and Adventure Managers in
their own centres, across centres in periodic video call based discussions, and in the training
sessions), and exploration (in personal practice and discussion within their new community of
practice of developers). This example utilises developers’ work time, with periodic focussed
input to allow them to build on their existing experience and opportunities for development.
It creates a community of practice for developers, embedding the Hahnian philosophy into
OBT at the OBI developer level, and encouraging a shared mental model of development
across the organisation. This approach, however, relies on the Heads of Learning and
Adventure to support the development of Learning and Adventure Managers – highlighting
the need to also support, and develop, the Heads of Learning and Adventure and Heads of
Centre.

9.2. Strengths and Limitations

Of course, this thesis is not without limitations. It is important to acknowledge these,
alongside the strengths, to allow for an informed view of the findings. A pragmatic approach
highlights the creation of practical implications (Morgan, 2014), and promotes the use of the
most appropriate method to meet research aims. Consequently, a combination of methods
were deployed across the four empirical studies, which helped to address the limitations of
using a single method or philosophic stance. Characteristically, qualitative research has some
limitations (e.g., small sample, lack of transferability; Creswell, 2017). However, pursuing a
reflective thematic analysis (Braun & Clarke, 2022b) of the qualitative data, allowed for a
deep exploration of participants’ experiences (J. Smith, 2011) and a rich and complex
account of the data, alongside the use of broader samples in Phase 1 of Chapters 4 and 8.
9.2.1. Data Collection

Data were collected across OBT centres based in Wales, England, and Scotland, providing a broad geographical base. However, (excluding Chapter 4, Phase 1) this was within a single organisation, limiting the practical outcomes for wider outdoor instructor development, although increasing the validity for implications within OBT. Investigating within a single organisation allowed for a cohesive view of development, by removing some of the many variables (e.g., operational environment, organisational aims and philosophy, intended outcomes, length and purpose of educational course, staff training) that exist across adventure education, and even within the personal development sector (Sinfield et al., 2019). OBIs in all Chapters had similar professional development, operating within OBT, thus enabling more direct comparison between groups.

Notably, the Covid-19 pandemic had a significant impact on data collection, and on commercial pressures on OBT. As a result of the government restrictions on adventure education, the number of OBIs working in a ‘normal’ capacity at OBT during the time of data collection (Chapter 6) totalled 18. Not only did this reduce the total population from which to sample, but it also appeared to disproportionately affect female OBIs, with only two of the 18 OBIs being women (one of which was myself!). Consequently, despite conscious efforts to collect data from representative samples in each study, in Chapter 6 all nine participants were male. The lack of female voice within this Chapter is an important recognition, especially given the differences in developmental experiences between men and women (e.g., confidence, leadership; O’Brien and Allin, 2022). The pandemic also resulted in an increased pressure on OBT. OBT faced a need to re-establish a skilful workforce following the voluntary departure of many OBIs during the furlough period, increasing the pressure on resource and therefore potentially exacerbating some of OBT’s development challenges (highlighted in Chapter 8).
9.2.2. Insider Research

A further aspect of note is my position as an employee of OBT. As such I am a part of the
community of practice, an ‘insider’ researcher (Mcniff, 2017). There were both strengths and
limitations to this role (Fleming, 2018). As an employee of OBT I was known to many of the
participants prior to data collection, an advantage in easy rapport building, allowing me to
gain deeper insight during interviews more rapidly. I also found that participants who knew
me were more willing to give up their time to participate in the research. Additionally, as an
insider, I had a shared mental model and shared tacit knowledge with participants. This
allowed me to readily access and understand complex topics, however, there was also a risk
of assumption, and unconscious bias in this, of which I had to remain vigilant. At times I
found it challenging to recognise and explicitly describe tacit knowledge and exchanges.

Equally, the inverse was apparent, in translating the academic nature of the work to practice.
The support of my supervisors and peers in checking and challenging my analysis was
therefore invaluable, supporting my reflective practice and pragmatic aims (see also,
discussion of trustworthiness in Section 3.7, and reflections on the research journey in
Section 9.4).

At the outset of my research, I was a peer to the participants in the studies. My role
was as an OBI, with broadly comparable experience and ability to participants in those
studies (Chapters 4 and 5). In line with the progression of my research, my role within OBT
also evolved. I moved into peer-leadership roles (Chapters 5 and 6), and ultimately into a
leadership and management role as a Learning and Adventure Manager (Chapter 8). I was
careful to ensure that participants felt no pressure to participate or to provide responses that
reflected on others, or themselves, favourably (social desirability bias; Grimm, 2010). I made
this explicit in both the preceding documentation and in-person, prior to commencing the
research. This was an important focus throughout all research studies, but of even greater
importance given the change in relationship, and potential shift in power. Despite these
efforts, I cannot be certain of the impact my role had on participants, and therefore also on
the data.

9.2.3. Participants’ Experience
Data predominantly consisted of participants’ views and reflections on their past experience,
and as such there may be aspects of recall bias, or memory decay when recalling past events.
I endeavoured to mitigate this by making notes while observing, and by conducting the
interviews as close to the time of the session as possible, generally during the same day.
Furthermore, as participants were self-selecting, they were potentially more positively
disposed to the research aims, which may have influenced the data. The status of ongoing
professional and metacognitive development within OBT however, would suggest that OBIs
were sufficiently critical consumers to make this less likely to be the sole explanation for the
effects observed.
A further aspect of the participants which is worthy of discussion, is their experience
and skill level. While some prior research has claimed strength in its study of ‘elite’ or
‘expert’ performers, I chose to study those who are not yet expert. There may be some
limitations associated with the level of experience from which these non-experts draw their
responses. However, I believe this advantage is offset by the opportunity to gain insight into
the practice and development of early and mid-career OBIs; those who seem to be most in
need of evidence informed development. And yet, as noted in Chapter 2, it is these
individuals who appear to receive the least attention.

9.2.4. Pragmatic Findings
OBT’s engagement and implementation of recommendations over the period of study
demonstrates their investment and commitment to improvement. For example, specific
training for OBIs in mentor roles, a ‘coach-the-coach’ syllabus, was recently conceived and
delivered to senior OBIs who would be working alongside new OBIs during their induction – a result of the findings in Chapters 6 and 7. This training prioritised an intentional approach to development and supported the notion of a collaborative and community approach to a CA, highlighted in Chapter 8. Aspects of PJDM were added to annual training for OBIs, and new shared language (such as, adaptive expertise, situational awareness, cognitive load, metacognition, and PJDM) was embraced by the community of practice. Furthermore, a tool to support and guide a CA approach to OBIs’ PJDM development was co-constructed with OBT (Fig. 8.6). These steps forward, however, were not universal across OBT, highlighting the need for a consistent approach across the organisation. Nevertheless, the outcomes of this thesis have clearly begun to impact the domain for which they were intended, evidenced this organisational evolution in parallel with the research process.

9.3. Future Research

As noted in Chapter 2, the adventure education domain is still a relatively new area of inquiry. As such, there is considerable scope for further research, specifically within OBT, outdoor instructor PJDM, and more broadly across professional training and development in adventure education. With this thesis offering an initial exploration into developing OBIs’ PJDM, continuing to build on and expand this body of knowledge is crucial. I therefore suggest some areas of interest for future research.

9.3.1. Cognitive Apprenticeship

Development of the staff who are responsible for OBIs’ development (e.g., Learning and Adventure Managers) is key to improving OBTs development of their OBIs. So far, however, it is unknown if the same aspects which apply to OBIs’ PJDM development, are also applicable in developing the PJDM of those developers. As such, it seems that an immediate direction for future research is a consideration of ‘developing the developer’; identifying and
evaluating an approach to facilitate that development and subsequently, the PJDM development of OBIs, using a CA.

In addition, increased consideration of how each of the individual components of OBIs’ PJDM may be developed would be of value, using approaches that align with a CA. The development of situational awareness (see L. Collins & Collins, 2022), OBIs’ management of the situational demands, and their interaction; the development and evaluation of metacognition; OBIs’ management and utilisation of cognitive resource and; the development of deeper and more critical reflection, in and on-action, for OBIs would all be worthy of further consideration.

9.3.2. Epistemological Network

An epistemological chain which links outdoor instructors’ philosophy and actions is well established (Christian et al., 2017; L. Collins et al., 2014), however, the extension of this to include the organisational philosophy, an epistemological network, was a novel finding. Though not as explicitly as OBT, much of the adventure education domain aligns itself with a Hahnian ‘learning through adventure’ philosophy (Veevers & Allison, 2011), Hahn being viewed by many as the ‘grandfather’ of adventure education (Allison, 2019). As OBT’s philosophy was a significant element of the OBIs’ development, there would be value in understanding if this is also true of other adventure education organisations. Such research may support the extension of the evidence in this thesis, and potentially support other organisations to align their philosophy with their intention for impact.

9.3.3. Adaptive Expertise

Hutton et al. (2017) proposed several tools for the development of AEx, namely, flexibility-focused feedback, concept–case coupling (combining context and cognition), tough case time compression (low frequency, high challenge scenarios), case scaling proficiency (working in the zone of proximal development), complexity preservation, and active reflection. These
tactics align closely with a CA approach in aspects of scaffolding, use of the community of practice, articulation and reflection. These approaches therefore, may be of use in operationalising a CA which guides the development of AE\textbf{x} in OBIs. For example, ‘case scaling proficiency’ and ‘tough case’ scenarios could support scaffolding of training towards the zone of proximal development for more experienced instructors. ‘Concept-case coupling’, ‘complexity preservation’, and mutual articulation in ‘active reflection’ by both the expert and the learner may support an increase in situational awareness (L. Collins & Collins, 2022) and likely also situational demands, to develop situational comprehension.

Additionally, in emergency medicine Branzetti et al. (2022) offer a useful guide to creating training programs which develop AE\textbf{x} through four key principles: (1) emphasising conceptual understanding, (2) allowing for struggle and discovery in learning, (3) incorporating meaningful task variation, and (4) developing self-regulated learning skills. These four principles also align closely with the six CA approaches, and thus may offer detail for the application of CA in PJDM development.

While these authors’ approaches appear valuable in developing the components of OBIs’ PJDM through a CA, they require further investigation to establish their efficacy in the OBI context. Furthermore, obtaining diverse experience and practice outside the workplace was crucial in PJDM development, however, further investigation surrounding the impact and translation of these experiences to the workplace would be of value.

9.3.4. National Governing Body Qualifications

Entry level national governing body qualifications in particular are competency, rather than expertise based assessments (D. Collins et al., 2014). Although some aspects of outdoor instructor practice are competency based, (e.g., tying a figure-of-eight knot or performing stern-rudder), many other elements, such as PJDM, are aspects of AE\textbf{x} and would therefore be better trained and assessed with a mixed competency-expertise focus. Syllabi which teach
for AEx from the start, rather than training routine expertise as a building block (Jensen et al., 2022) would look significantly different, forming more adaptable and flexible outdoor instructors who do not need to unlearn routines and procedures. Both Chapters 5 and 6 highlighted the incongruence of national governing body training and assessment and OBIs’ professional careers (Sinfield et al., 2019). In order to support the development of outdoor instructors who are appropriately skilled to execute their role, further inquiry into how national governing bodies may better train and assess for PJDM, and consequently support the development of AEx is necessary. In the interim, adventure education organisations may wish to consider additional or alternative means of outdoor instructor assessment.

9.3.5. Professional Practice

Notably, within OBT, the subject of autonomy is prominent. Can professional OBIs be autonomous in their DM and adhere to the constraints of the workplace and its associated processes? There is clearly a balance to be struck between the need for a set of safety rules and risk assessments, and the need to develop adaptive experts who make professional judgements and decisions autonomously. Thus, consideration should be given to what autonomy looks like for OBT. Moreover, the question of professionalisation of adventure education appears to be worthy of consideration. As an emergent area of study, the notion and education of ‘professional’ adventure education remains lacking in evidence. Continued research would support the notion of a professional approach to outdoor instruction and, ultimately, develop increasingly skilful outdoor instructors. The historical shortage of evidence should not be an invitation for adventure education to maintain the status quo of an ad-hoc approach to development.

Finally, despite the specific context of OBIs’ PJDM this thesis has investigated, the findings highlight the importance of effective development of PJDM in dynamic workplaces. As such, there may be insight to be gained into PJDM development in other contexts. For
example, the wider adventure sports domain, mainstream sports coaching contexts, or entirely
different professions, such as policing. PJDM development in these alternative contexts,
however, clearly require further investigation.

9.4 Reflections on my Development as a Researcher

As a reflective practitioner, and at the close of this, a thesis about development, I offer some
of my own reflections on my developmental journey as a researcher.

While being employed full time by OBT throughout this thesis supported my
pragmatic philosophy, doing two ‘jobs’ at the same time hasn’t always felt very pragmatic!
As a pracademic, I feel at times I missed out on (and didn’t actively pursue) being a part of a
wider academic community of practice. This perhaps contributed to aspects of ‘imposter
syndrome’ I sometimes felt, and resultingy, my initial reluctance to champion my findings
confidently within OBT – a conflict with my pragmatic philosophy. Further aspects of this
initial hesitancy were also, I believe, related to my own introverted nature, and, though
unaware of it at the time, other aspects of my identity, such as, age (as one of the youngest
OBIs in my centre) and gender (in a male dominated sector). There was also an element of
anxiety around how the findings would be received by OBT, by my managers, and my peers.
However, like the OBIs in this thesis, I took opportunities to work in my zone of proximal
development, presenting and sharing my findings, both within OBT and externally. As a
result, I gained confidence, my role within OBT evolved, and I became more skilled and
confident in advocating the value of my research.

Throughout the thesis I have acknowledged a feeling of tension between ‘researcher’
and ‘OBT employee’, which likely added to the insecurities noted above. This unique
position has afforded me many advantages. For example, insight into the OBT culture and
structure, central to organisational change, has allowed me to anticipate how to effectively
share my findings. However, at times this affiliation caused me to want to self-censor in my
writing. Subsequently, I needed to actively hold in mind, and sometimes be reminded, that
the ‘audience’ for the writing in the format of this thesis, was not OBT. In addition, I had to
be explicit in sharing OBT knowledge which to me, was tacit, as noted earlier. Undoubtedly,
I have not always achieved a perfect balance, which I am sure will have affected the impact
of the findings at times.

A further challenge I faced as an OBT employee and researcher, was in data
collection. While observing OBIs in a context in which ordinarily I would be working, I
found the desire to work, to be a useful ‘second’ to the OBI, testing. However, remaining
uninvolved in the OBIs’ DM was essential to the successful collection of data. I balanced this
struggle over time by acknowledging my ‘researcher’ role as equally valuable to the OBI
role. Ensuring the boundaries of our interactions were clear to the participants further helped
to remove my perception of any judgement on me.

Despite my attempt to separate the researcher and OBI roles however, I still held a
duty of care to both the research participants (OBIs), and by extension, the young people in
their care (Eastabrook & Collins, 2021a). As an additional competent individual (and in the
participants’ view, a senior OBI) I was often in the most useful position to assist in difficult
situations. Consequently, there were multiple occasions where I was unable to continue with
data collection (observation) due to becoming involved in the session in a first aid, or rescue
capacity. While frustrating (it was difficult to creating time to collect data alongside a full-
time job, amplified by the need for this time to align with participants’ availability) I came to
accept that this is an unavoidable feature of the role of a pracademic in this context. Agreeing
expectations with more clarity, my own development in confidence and skill both as an OBI
and a researcher, and likely the fact I was increasingly observing more skilled OBIs, assisted
in minimising disruptions to data collection in later studies.
As a peer, and an ‘insider researcher’, my frame for collecting and analysing data clearly impacted the findings. As I developed broader and deeper theoretical knowledge, my analysis developed alongside. My initial analyses in earlier studies therefore were less nuanced; I was only able to see what I knew of at the time. I was, of course, supported in this by my supervisors, a collaborative check and challenge approach which was and still is, invaluable. Like all good learners, I have made errors, embraced the discomfort, reflected on mistakes and successes, and developed as a result; an approach I intend to continue.

9.5 Conclusion

PJDM’s significance in outdoor instruction, and the lack of prior research into its development in outdoor instructors, necessitated a thesis which aimed first, to understand how OBIs make judgements and decisions, and second, to identify how these judgement and decision making processes may be best developed by OBT. The objectives supporting this aim were met with the following findings:

1) To determine if outdoor instructors, including OBIs, are adaptive experts

AEx was identified as a characteristic of outdoor instructor expertise. Both highly experienced ‘expert’ outdoor instructors and less experienced ‘competent’ OBIs operated within a spectrum of AEx, a novel finding.

2) To identify and analyse the features of adaptive expertise in a sample of OBIs

Adaptability expanded as OBIs developed, and appeared to be developed from the outset, rather than being built upon routine expertise. This finding supported and transferred Jensen et al.’s (2022) proposition to the adventure education context. PJDM was identified as a crucial element of AEx in OBIs.

3) To identify and analyse the key components of DM in early-career and mid-career OBIs
Early career OBIs’ PJDM was focussed on maintaining the highest levels of safety, an awareness of the situational demands, and managing the span of control. These factors resulted in a high cognitive load, compelling early-career OBIs to stick closely to their original plans. Mid-career OBIs’ PJDM revolved around having a range of pre-identified appropriate options, informed by their situational comprehension, and highly conditional to the context. These findings conveyed new knowledge for OBT about their OBIs, and the influences on their PJDM in practice. A clear epistemological network between OBIs’ PJDM practice, OBIs’ beliefs, and OBT’s Hahnian philosophies, was also identified; the link between organisational philosophy and employee practice being a new finding.

4) To explore how early-career and mid-career OBIs have developed their judgement and DM

The development of early and mid-career OBIs’ PJDM was based on an embodiment of OBT’s Hahnian philosophies, and deliberate practice and reflection on rich, deep, and broad critical experiences. This finding confirmed existing literature on developing expertise (e.g., D. Collins et al., 2014; Kahneman & Klein, 2009; Martindale & Collins, 2013), in the context of OBT. Notably, however, the national governing body qualifications did not support the development of adaptable DM in these OBIs, contributing to similar concerns raised by other authors (D. Collins et al., 2014; Sinfield et al., 2019).

5) To compare key components and development of early-career and mid-career OBIs’ judgement and DM, and propose an approach to best develop judgement and DM in OBIs.

Key differences in the PJDM of early and mid-career OBIs were evident primarily in cognitive focus between situational awareness and situational demands; the more experienced mid-career OBIs were able to focus on the pedagogical needs, while the early-career OBIs’ cognitive capacity was occupied by maintaining situational awareness and stringent safety measures. The mid-career OBIs held a more nuanced and higher level of situational...
comprehension than early-career OBIs. Similarities across OBIs’ PJDM development resembled many aspects of a CA. This was a new finding for OBT and supports other research on a CA approach to development (e.g., Barry & Collins, 2021; Downes & Collins, 2023). These findings contributed to OBT’s knowledge of their OBIs’ PJDM and its development, and highlighted the need for further study into a CA approach as a means of this development.

6) To evaluate OBT’s current approach to instructor induction and judgement and decision making development, and its alignment with a CA framework.

A study into OBT’s current OBI development demonstrated the six approaches within a CA were used, though inconsistently and unintentionally, and therefore with limited effect. OBT’s Hahnian philosophies and the community of practice, however, compensated for some of the shortfalls in the current approach, and thus, supported OBIs’ PJDM development. These findings represent new knowledge for OBT, offering a specific approach to support the development of OBIs’ PJDM.

7) To make recommendations regarding how OBT’s current approach to judgement and DM development can be best developed and enhanced.

Recommendations for OBT’s facilitation of better DM development included; intentionally prioritising PJDM development; further training for OBT and OBIs in the skilful use of a collaborative CA approach; and a prioritisations of the Hahnian philosophy in OBI development. This resulted in the collective development of a practical tool to support the formation of this shared mental model across OBT.

Specifically, I recommended that:

• The adventure sector considers an intentional facilitation of the development of AEx, from the outset of development.

• OBT intentionally support a consistent development of AEx in their OBIs.
OBT scaffold the development of OBIs with awareness for their cognitive load, supporting OBIs to manage this where possible.

OBT identify, with consistency across the organisation, the essential component parts which require a routine approach, and explicitly develop these, with an adaptive application in mind.

OBT consider means of intentionally facilitating the development of high levels of situational comprehension for OBIs.

OBT continue to develop metacognition across the organisation, including the development and consistent use of the ‘Big 5’.

OBT scaffold critical experiences for OBIs in a professional context, and endeavour to intentionally support personal experience in the zone of proximal development.

OBT actively support entry into the community of practice through OBIs’ induction period, and, the development of existing OBIs in their role as part of the community of practice.

OBT pursue further training for the developers of OBIs (e.g., Learning and Adventure Managers, Heads of Learning and Adventure, Heads of Centre) in the underpinning aspects of PJDM, AEx, and a CA approach.

The construction of a shared mental model of PJDM development is prioritised. Based on a CA approach, aligned across the whole of OBT, and coherent with OBTs Hahnian philosophy.

OBT instigate a professional group at a senior management level who explicitly consider the quality of learning and development in line with OBT’s philosophy, supporting an aligned approach across OBT (akin to the existing ‘risk-management committee’).
OBT prioritise intentional development of OBIs’ PJDM, guided by their Hahnian educational philosophy.

For OBIs, PJDM development situated in the complex, conditional, and hyperdynamic environment, is vital. Those who are responsible for this development must successfully choose the right pedagogic approach, at the right time, in the right place, for the individual. A choice, which relies on a comprehensive understanding of the components of OBIs’ PJDM.

Increasingly skilful developers, therefore, will support the development of increasingly skilful OBIs, and thus enhance the education and development offered to the young people who visit OBT’s centres; the ultimate goal, learning through adventure in the wild.
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Appendices

Appendix A – Cognitive apprenticeship Survey (Chapter 8)

Information sheet

Instructor Development: Cognitive Apprenticeship at the Outward Bound Trust

You have received an information sheet by email to your Outward Bound email address.
Please read this, and if you have any questions, get in contact prior to starting this study.

This survey should take approximately 60 minutes to complete.
PARTICIPANT CONSENT FORM

Instructor Development: Cognitive Apprenticeship at the Outward Bound Trust
Researcher’s name and contact details: Alice Mees, alice.mees@ed.ac.uk

I confirm that I have read and understood the Participant Information Sheet (V3 dated 01.09.22) for the above study

☐ Yes
☐ No
I have been given the opportunity to consider the information provided, ask questions and have had these questions answered to my satisfaction

☐ Yes
☐ No

I understand that my participation is voluntary and that I can ask to withdraw at any time without giving a reason.

☐ Yes
☐ No

I ____________________.

I understand that my anonymised data will be stored for a minimum of 5 years and may be used in future ethically approved research

☐ Yes
☐ No

I agree to take part in the above study

☐ Yes
☐ No
Demographics

What is your age?

- Under 20 years
- 20 - 25 years
- 26 - 30 years
- 31 - 35 years
- 36 - 40 years
- 41- 45 years
- 46 - 50 years
- 50 - 55 years
- Over 55 years

What gender do you identify as?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

In what year did you gain your initial Outdoor qualification(s)?
In what year was your Outward Bound Induction?

2018  2019

2020  2021

2022
Which Outward Bound Centre do you usually work at?

- Aberdovey / Ogwen
- Eskdale
- Loch Eil
- Ullswater / Howtown

**Likert Scale**

Please rate the following statements from *Never* to *Always* when working with a Learning and Adventure Manager (L&AM) over the past **12 months**:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Occasionally</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L&amp;AMs demonstrated how to do things which were new to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. L&amp;AMs created opportunities to observe them, or another instructor when appropriate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. L&amp;AMs served as a role model as to the kind of instructor I would like to become</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. L&amp;AMs gave useful feedback during or after observation of my practice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. L&amp;AMs adjusted their level of coaching and support to my level of experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. L&amp;AMs offered me sufficient opportunities to deliver sessions independently</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>Occasionally</td>
<td>Sometimes</td>
<td>Often</td>
<td>Always</td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>--------------</td>
<td>-----------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>7. L&amp;AMs asked me to provide a rationale for my actions and decisions</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>8. L&amp;AMs asked me questions aimed at increasing my understanding and awareness</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>9. L&amp;AMs encouraged me to explore my strengths and weaknesses</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>10. L&amp;AMs encouraged me to formulate goals for my development</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>11. L&amp;AMs encouraged me to pursue the goals set for my development</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>12. L&amp;AMs created a safe learning environment</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>13. L&amp;AMs were genuinely interested in my development as an instructor</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>14. L&amp;AMs showed that they respected me</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

The next set of questions asks about your experiences of different methods of professional development you might have experienced during the past 12 months at OBT; Modelling, Coaching, Scaffolding, Reflection, Articulation, and Exploration.
You will read a short **definition** and an **example**, followed by 4 questions for each method. The questions will ask you about your experiences during the past 12 months.

Please read the questions carefully and give as much detail as possible in your responses. You can **respond by voice** using the 'Record' button. You can listen back to each response using the '>' button and re-record your answer if you wish. When you are happy with each response, press 'Submit'.

Alternatively, you can **respond by typing** into the box below the record button. Please respond to all questions. If you are unable to respond to a question please explain this in your response.

This section will take around 30-45 minutes.

---

**Modelling**

Modelling is an active demonstration and explanation of a task/ skill/ procedure/ decision process, which helps the learner to build a mental picture of what they need to do to accomplish it. For example:

"I was given demonstrations of different skills, and opportunities were created for me to observe others. During or after the demonstration the individual explained their thought processes and decision making out loud."

1. Please **describe generally** your experiences of *modelling* at Outward Bound over the past 12 months. Think about **when, where and how** you experienced *modelling*.
   > You could compare to the example above if you’d like...

2. **Describe a specific experience** at Outward Bound which demonstrates *modelling* in action.
   > What **impact** did this have on your **development** as an instructor?

3. What are the **challenges** you face with *modelling* as part of your development at Outward Bound?
4. **How could the process of modelling be improved** at Outward Bound?

**Scaffolding**

Scaffolding is the supports provided to help the learner carry out the task/skills/decision process. Successful scaffolding allows the learner to work at the edge of their ability, or do more than they could alone. Support can be gradually faded out until the learner is on their own. For example:

"The L&AM was aware of my previous experience and offered me enough opportunity to work independently. I was encouraged to work in my ‘stretch zone’ rather than my ‘comfort zone’. I was supported with activities which were at the top end of my skillset and that support was gradually reduced so that I could become more independent."
1. Please **describe generally** your experiences of *scaffolding* over the past 12 months. Think about **when**, **where** and **how** you experienced or engaged in *scaffolding*.
   > You could compare to the example above if you’d like...

2. **Describe a specific experience** at Outward Bound during the past 12 months which demonstrates *scaffolding*.
   > What **impact** did this have on your **development** as an instructor?

3. In your experience, what are the **challenges** with *scaffolding* as part of your development at Outward Bound?
4. **How** do you think the process of **scaffolding** could be **improved** at Outward Bound?

---

**Coaching**

Coaching in this context means observing and providing specific feedback on performance, and supporting where needed to help the learner work within their 'stretch zone'. It refers to all the different ways which a coach facilitates learning. This might include elements of **modelling** (demonstration) and **scaffolding** (supports). For example:

> "The L&AM (or Coach) observed my practice, and gave me feedback during or after, which gave me a better idea of which aspects I could improve and how. I was offered challenges, assistance, and support appropriate to what I needed at the time."

---

1. Please **describe generally** your experiences of **coaching** during the past 12 months. In particular, **when**, **where** and **how** you experienced this **coaching**.
2. **Describe a specific experience** at Outward Bound which demonstrates *coaching* and the **impact** this had on your **development** as an instructor?

3. What are the **challenges** you face with the process of *coaching* as a part of your development at Outward Bound?

4. **How** could the process of *coaching* (in relation to the description above) be **improved** at Outward Bound?
Articulation

Articulation refers to any method of getting the learner to verbalise their knowledge, reasoning, or problem solving out loud. This might be through questioning, a running commentary, or another process. For example:

"I was asked to explain my knowledge and decisions. This helped me become aware of gaps in my knowledge and skills. Questioning was used with me regularly which got me to think aloud and increase my understanding of my own thinking processes."

1. Please describe generally your experiences of articulation over the past 12 months. Think about when, where and how you experienced or engaged in articulation.
   > You could compare to the example above if you'd like...

2. Describe a specific experience at Outward Bound which demonstrated your own articulation.
   > What impact did this have on your development as an instructor?
3. What are the **challenges you face** with the process of *articulation* at Outward Bound?

4. **How could the process of articulation be improved** at Outward Bound?

---

**Reflection**

Reflection in this context means reviewing your own performance in comparison to someone else, or in comparison to your own mental model of performance. For example:

"I was encouraged to become aware of my strengths and weaknesses and to consider what I could do to improve. I was encouraged to compare my practice to someone more or less skilled, or to my own past performance. I was encouraged to look back with the intention of understanding to improve my performance."
1. Please describe generally your experiences of reflection as part of your development in the past 12 months. Think about when, where, how, or by who reflection has been instigated.

2. Describe a specific experience at Outward Bound which demonstrated your own reflection.
   > What impact did this have on your development as an instructor?

3. What are the challenges you face with reflection as part of your development at Outward Bound?
4. **How** could the process of *reflection* for your development be **Improved** at Outward Bound?

Exploration

Exploration is a way to create space for, and guide the learner to problem solve on their own, find and set their own goals, and adapt and combine prior skills to solve them. For example:

"I was encouraged to explore my own practice and set my own goals for development. I was challenged to pursue these goals and to keep learning new things."

1. Please **describe generally** your experiences of *exploration* compared to the above example, over the past 12 months. Think about **when**, **where** and **how** you experienced or engaged in *exploration*. 
2. Describe a specific event at Outward Bound which demonstrates exploration.
   > What impact did this have on your development as an instructor?

3. What are the challenges you face with exploration as a tool for your development at Outward Bound?

4. How could the process of exploration be improved at Outward Bound?
Tell us about your experience of the 'pass out' process below...

1. What level of adventure do you feel you are encouraged to pursue in your own personal time?
   
   Choose from 1 to 5 where 1 is Tame and 5 is Extreme

   ○  1 Tame
   ○  2
   ○  3
   ○  4
   ○  2 Extreme

2. When working with groups at Outward Bound, what level of adventure do you feel you are encouraged to pursue?

   Choose from 1 to 5 where 1 is Tame and 5 is Extreme

   ○  1 - Tame
   ○  2
   ○  3
   ○  4
   ○  5 - Extreme

Adaptive Experts

As outdoor professionals, your expertise is adaptable and flexible to enable you to manage many demands in challenging environments. We are interested in how the 'pass out' process at Outward Bound supports this.
1. What skills, behaviours and attributes do you feel the pass-out process evaluates?

2. a) Do you feel that the pass-out process assesses your ability as an autonomous professional?
   - Always
   - Mostly
   - Sometimes
   - Never

2. b) Please explain your answer...

3. Do you have mostly 'national' pass-outs, or mostly 'venue specific' pass outs?
   - Venue specific only
   - Mostly venue specific, some national
   - Mostly national, some venue specific
   - National only
Almost there...!

Your details are optional (you can leave these blank). However, if you wish to share your details it will help us avoid any duplicate responses.

Your responses will remain completely anonymous, and will never be linked to your name.

Please click 'Next Page' to submit your response and complete the survey.

Powered by Qualtrics
Appendix B – OBT Cognitive apprenticeship tool (Chapter 8)

OBT’s approach to development uses a Cognitive Apprenticeship. There are 6 key approaches which we can use to develop our Professional Judgement and Decision Making. These should be used intentionally to challenge and support development. There is no specific order and aspects overlap, which is shown by the circular Venn diagram.

The boxes around the diagram show five principles which we work to in developing ourselves and supporting the development of others.
Developing PJDM by Cognitive Apprenticeship

Cognitive Apprenticeship sits alongside the Instructor Development Journey, as an approach to PJDM development.

CA uses the Zone of Proximal Development (Stretch Zone), with support from a Decision Making ‘expert’ to develop thinking in-situ (Dennen, 2004). The development of Professional Judgement and Decision, therefore, is reliant on the ‘expert’ recognising and understanding their PIDM (metacognition) and the key aspects of PJDM development in others.

It is about developing the underpinning skills cognitive skills essential to Decision Making. These are not always observable and are often tacit knowledge (things you don’t know you know). A CA aims to make the tacit knowledge observable, and is reliant on active participation in the community of practice.

<table>
<thead>
<tr>
<th>Description</th>
<th>OBT example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modelling</strong></td>
<td>A demonstration of skills, usually by an expert, to enable the learner to develop a mental model of the skill. Often including verbalising the cognitive processes. Demonstrating the delivery of a review. Pausing to share their reasoning behind their Decision Making throughout.</td>
</tr>
<tr>
<td><strong>Coaching</strong></td>
<td>Observing the learner and offering challenges, support, and feedback.</td>
</tr>
<tr>
<td><strong>Scaffolding</strong></td>
<td>Putting supports in place to enable the learner to carry out the task in their Zone of Proximal Development. Scaffolding must be highly personalised, and if done poorly can have a negative impact on the learner emotionally (Bean &amp; Stevens, 2002). A L&amp;M joining an instructor on a canoe session in conditions which are at the edge of their ability, providing additional safety support (reducing the cognitive load) and acting as a sounding board to discuss decisions before acting.</td>
</tr>
<tr>
<td><strong>Articulation</strong></td>
<td>The learner separates, verbalises and demonstrates their understanding of the component knowledge, reasoning and thinking processes in a domain. Using the ‘Big 5 Questions’ to ask an instructor about their Decision Making and choice of strategy to navigate their group safely through a moving water rapid.</td>
</tr>
<tr>
<td><strong>Reflection</strong></td>
<td>Learners compare their own thought processes and problem solving with that of others, in particular, that of an expert. Reviewing a ‘critical experience’ with a L&amp;M, the instructor compares their Decision Making to that of another instructor in a similar situation.</td>
</tr>
<tr>
<td><strong>Exploration</strong></td>
<td>Giving learners time and space to problem solve on their own, akin to a problem-based learning approach, fading supports, and self-setting of goals. Instructor self-identifies a goal to increase the quality of their delivery on expedition. They decide to find and test a variety of strategies to allow them to hand over autonomy to their group whilst on expedition, in varied weather conditions.</td>
</tr>
</tbody>
</table>
Appendix C – Participant information sheets

Participant Information Sheet

Adaptive expertise

Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is not clear or if you would like more information please ask a member of the research team using the details provided at the end of this information sheet.

Thank you for reading this.

Who will conduct the research?

This research will be conducted by Alice Mees, a D(Prof) student in the Institute of Coaching and performance at the University of Central Lancashire, PR12HE.

The research will be supervised by Dr Loel Collins, a Senior Lecturer in the Institute of Coaching and Performance at the University of Central Lancashire, PR12HE.

Your involvement will help develop our understanding of the judgement and decision making of experts in the outdoors. Your contribution will enable us to design coach, leader and teacher education programs that are informed by evidence. The primary researcher, Dr Loel Collins, is a highly qualified and experienced adventure sports educator.

What is the aim of the research?

This research project is investigating professional judgement and decision making in expert adventure sport activity. Particularly the forward planning and adaptive aspect of decision making.

Why have I been chosen?

You have been selected as a possible participant based on your qualification and experience.

What would I be asked to do if I took part?

If you agree to participate, you will be asked to participate in an interview, following an outdoor session. The interview will ask you to consider your actions and decisions within a specific session. Your practice, specifically your professional judgement and decision making, is the focus of the study and you will not be asked to undertake anything that alters your session or your clients experience.
What happens to the data collected?

The data [field notes] will be destroyed at the conclusion of the project. Any raw data (transcripts of interviews) on which the results of the project depend will be retained in secure storage for five years, after which it will be destroyed. Video footage may be used as a prompt in the post session interview and will be deleted immediately after the interview.

How is confidentiality maintained?

Your anonymity will be preserved through the use of a pseudonym; for example coach X and the data will remain confidential.

What happens if I do not want to take part or if I change my mind?

Will I be paid for participating in the research?

Your involvement in this project is voluntary and you are free to withdraw at any point.

What is the commitment and duration of the research?

2 post session interview’s (15-60 mins). These will take place between April and July 2018.

Where will the research be conducted?

The session and interviews will take place at a time and place convenient to you.

Will the outcomes of the research be published?

The results of the project may be published in journal papers, books and related magazines.

Who has reviewed the study?

To ensure that the project is being conducted in a professional and ethical manner, the project has been approved by the University of Central Lancashire BHASS Ethics Committee.

Contact for further information

If you have any questions regarding your involvement in this research please ask contact Loel Collins on.

Who can you contact if you have a complaint about the project?

If you have any complaints about the study you may contact the University Officer for Ethics (OfficerforEthics@uclan.ac.uk).
Participant Information Sheet

Exploring judgement and decision making in a group of outdoor instructors
Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is not clear or if you would like more information please ask a member of the research team using the details provided at the end of this information sheet.

Thank you for reading this.

Who will conduct the research?

This research will be conducted by Alice Mees, a D(Prof) student in the Institute of Coaching and performance at the University of Central Lancashire, PR12HE ( ). The research will be supervised by Dr Loel Collins, a Senior Lecturer in the Institute of Coaching and Performance at the University of Central Lancashire, PR12HE ( ).

Your involvement will help develop our understanding of the judgement and decision making of outdoor instructors. Your contribution will enable us to work towards designing outdoor instructor education programs that are informed by evidence of practice. The researcher, Alice Mees, is a qualified and experienced outdoor instructor.

What is the aim of the research?

This research project is investigating professional judgement and decision making in outdoor instructors.

Why have I been chosen?

You have been selected as a possible participant based on your qualification and experience.

What would I be asked to do if I took part?

If you agree you will be interviewed following a session you have led as an instructor. The interview will ask you to consider your actions and decisions within a specific session. Your practice, specifically your professional judgement and decision making, is the focus of the study and you will not be asked to undertake anything that alters your session or your clients experience.

What happens to the data collected?

The data [field notes] will be destroyed at the conclusion of the project. Any raw data (transcripts of interviews) on which the results of the project depend will be anonymised and retained in secure storage for five years, after which it will be destroyed.
How is confidentiality maintained?

The data will be anonymised at the point of transcription. Your anonymity will be preserved through the use of a pseudonym; for example instructor X and the data will remain confidential.

Will I be paid for participating in the research?

Your involvement in this project is voluntary and you are free to withdraw at any point up until one week after the interview has taken place. At this point the audio recording of the interview will be transcribed and anonymised, and therefore it will not be possible to extract your data from the data set.

What is the commitment and duration of the research?

1 post session interview (45-60 mins).

Where will the research be conducted?

The session and interviews will take place at a time and place convenient to you.

Will the outcomes of the research be published?

The results of the project may be published in journal papers, books and related magazines.

Who has reviewed the study?

To ensure that the project is being conducted in a professional and ethical manner, the project has been approved by the University of Central Lancashire BHASS Ethics Committee.

Contact for further information
If you have any questions regarding your involvement in this research please ask contact Alice Mees on .

Who can you contact if you have a complaint about the project?
If you have any complaints about the study you may contact the University Officer for Ethics (OfficerforEthics@uclan.ac.uk).
PARTICIPANT INFORMATION SHEET

Instructor development: Cognitive Apprenticeship at the Outward Bound Trust

You are being invited to take part in research on Instructor development in judgement and decision making. Alice Mees (PhD student) at the University of Edinburgh, and Learning and Adventure Manager, is leading this research. Before you decide whether to take part it is important you understand why the research is being conducted and what it will involve to enable you to make an informed decision about your participation. Please take time to read the following information carefully.

WHAT IS THE PURPOSE OF THE STUDY?
The purpose of the study is to investigate the Outward Bound Trust’s development of professional judgement and decision making in its instructors.

WHY HAVE I BEEN INVITED TO TAKE PART?
You are invited to participate in this study because you currently work as an Instructor or Senior Instructor within the Outward Bound Trust.

DO I HAVE TO TAKE PART?
No – it is entirely up to you. If you do decide to take part, you are still free to withdraw until submitting your response. After this point, it will not be possible to withdraw your information. Your participation is anonymous. Deciding not to take part or withdrawing from the study will not affect your employment.

Please note that your data may be used in the production of formal research outputs (e.g. journal articles, conference papers, theses and reports) however your data will be anonymised and not attributable to you.

WHAT WILL HAPPEN IF I DECIDE TO TAKE PART?
If you do decide to take part, please keep this Information Sheet. You will be asked to complete an online Informed Consent Form at the beginning of the online survey to show that you understand your rights in relation to the research and that you are happy to participate.

In the survey, you will be asked a number of questions regarding your experience of the Outward Bound Trust’s instructor induction process, and your continued professional development within the Outward Bound Trust. You will be able to complete the survey at a time that is convenient to you. The survey should take around 1 hour to complete. There will also be an opportunity for you to respond to the survey in person via a recorded interview if you prefer.
The interview will be no more than an hour in duration and will repeat the survey questions. The interviews may be face to face or via a phone or video call.

The deadline for all surveys and interviews is 1st July 2022

**WHAT ARE THE POSSIBLE BENEFITS OF TAKING PART?**
By sharing your experiences with us, you will be helping the Outward Bound Trust and the University to better understand how to support the development of instructors in the future.

**ARE THERE ANY RISKS OR DISADVANTAGES ASSOCIATED WITH TAKING PART?**
There are no significant risks associated with participation.

**RISKS OF PARTICIPATION (COVID-19)**
For those who wish to respond to the survey in person, please note we have taken specific steps to minimise the risk of exposure to the Coronavirus during the study by adhering to the Scottish Government guidance (https://www.gov.scot/coronavirus-covid-19/). Further, you will only interact with researchers who are well and have had no known contact with COVID-19 positive individuals for the past 14 days.
If you feel unwell or have been in contact with a COVID-19 positive individual in the past 14 days, then please contact the researcher (Alice Mees, ), and we will postpone or cancel the research interaction.

**WILL MY TAKING PART BE KEPT CONFIDENTIAL?**
All the information we collect during the course of the research will be kept confidential and there are strict laws which safeguard your privacy at every stage.

**HOW WILL WE USE INFORMATION ABOUT YOU?**
We will use your information for this research project.

This information will include the centre at which you work, your qualifications, and the number of years’ experience. This information will form a part of the research. We will not ask for your name. Your data will be referred to by a unique participant number, keeping your participation confidential and anonymous.

We will keep your information safe and secure.

If you consent to be audio recorded, all recordings will be destroyed once they have been transcribed. All electronic data will be stored on a password-protected computer file and all paper records will be stored in a locked filing cabinet. Your consent information will be kept separately from your responses.

We will write our reports in a way that no-one can work out whose responses relate to whom.

**WHAT ARE YOUR CHOICES ABOUT HOW YOUR INFORMATION IS USED?**
We need to manage your records in specific ways for the research to be reliable. This means that we won’t be able to let you see or change the data we hold about you.
WHERE CAN YOU FIND OUT MORE ABOUT HOW YOUR INFORMATION IS USED?
- You can find out more about how we use your information at https://www.ed.ac.uk/records-management/privacy-notice-research
- You can ask the lead researcher (Alice Mees, )
- You can contact the research supervisory team (Dave Collins, Loel Collins, )

WHAT WILL HAPPEN WITH THE RESULTS OF THIS STUDY?
The results of this study may be summarised in published articles, reports and presentations. You will not be identifiable from any published results. Quotes or key findings will always be anonymous in any output. With your consent, your anonymised information may also be kept for future research. A summary of the findings from the study will be made available to participants who indicate they would like to receive this.

WHO IS ORGANISING AND FUNDING THE RESEARCH?
This study has been organised by Alice Mees (PhD student, Learning and Adventure Manager) and is supported by the University of Edinburgh.

WHO HAS REVIEWED THE STUDY?
The study proposal has been reviewed by The University of Edinburgh, Moray House School of Education and Sport Ethics Committee.

WHO CAN I CONTACT?
If you have any further questions about the study, please contact the lead researcher, Alice Mees ( ).

If you would like to discuss this research with someone else please contact Dr Alan McPherson, who is part of the wider research team.

If you wish to make a complaint about the study, please contact the researcher (Alice Mees, ) or the supervisory team (Dave Collins, Loel Collins, ).
Appendix D – Participants consent forms

Consent Form

Adaptive expertise

Dr Loel Collins and Alice Mees

Please **initial** the boxes only if you agree

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<tr>
<td>1. I have read and understood the information sheet.</td>
<td></td>
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<tr>
<td>2. I have had the opportunity to ask questions about the study and these have been answered to my satisfaction.</td>
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<tr>
<td>3. I understand that my participation is voluntary and that I am free to withdraw at any time, until the end of the interview without giving any reason.</td>
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<td>4. If I agree to the session with me being observed prior to interview. (Please leave blank if you do not want to participate in part 2).</td>
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<tr>
<td>5. I agree to the use of the Adaptive Expertise Inventory being utilised in this study.</td>
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<tr>
<td>5. I agree to anonymous quotes and data being used in any publication or presentations produced from this study.</td>
<td></td>
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<tr>
<td>6. I agree to take part in the above study.</td>
<td></td>
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</table>

Participants name:  
Participant’s signature:  

Date
**Consent Form**

**Judgement and Decision Making in a group of Outdoor Instructors**

Alice Mees (DProf Student). Supervised by Dr David Grecic.

Please *initial* the boxes only if you agree

<table>
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<th>1. I have read and understood the information sheet.</th>
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<tr>
<td>2. I have had the opportunity to ask questions about the study and these have been answered to my satisfaction.</td>
</tr>
<tr>
<td>3. I understand that my participation is voluntary and that I am free to withdraw at any time up until one week from the end of the interview, at which point the data will be anonymised) without giving any reason.</td>
</tr>
<tr>
<td>4. I agree to the interview being voice recorded and transcribed</td>
</tr>
<tr>
<td>5. I agree to anonymous quotes and data being used in any publication or presentations produced from this study.</td>
</tr>
<tr>
<td>6. I agree to take part in the above study.</td>
</tr>
</tbody>
</table>

**Participants name:**

**Participant’s signature:**

**Date:**
PARTICIPANT CONSENT FORM

Study Title: Instructor development: Cognitive Apprenticeship at the Outward Bound Trust

Researcher: Alice Mees,

Participant ID: ______________

Please tick box

1. I confirm that I have read and understood the Participant Information Sheet (Version 2 dated 30.06.2022) for the above study

2. I have been given the opportunity to consider the information provided, ask questions and have had these questions answered to my satisfaction

3. I understand that my participation is voluntary and that I can withdraw at any time prior to transcription, from which point they will be anonymised and impossible to remove from the data set.

4. I understand that my anonymised data will be stored for a minimum of 5 years and may be used in future ethically approved research

5. I am aware that participating in this study in-person at the current time may carry risks in relation to potential exposure to coronavirus, and I understand the steps that have been taken in relation to minimise the risks of exposure and transmission

6. I agree to the focus group being audio recorded and being transcribed.

7. I agree to take part in the above study

Name of person giving consent  Date  Signature

Name of person taking consent  Date  Signature

1x original – into Site File; 1x copy – to Participant
18 April 2018

Loel Collins/Alice Mees
School of Sport and Wellbeing
University of Central Lancashire

Dear Loel and Alice

Re: BAHSS Ethics Committee Application
Unique Reference Number: BAHSS 549 Study 1

The BAHSS ethics committee has granted approval of your proposal application ‘A Study of Judgement and Decision Making in Competent Outdoor Instructors’. Approval is granted up to the end of project date.

It is your responsibility to ensure that

- the project is carried out in line with the information provided in the forms you have submitted
- you regularly re-consider the ethical issues that may be raised in generating and analysing your data
- any proposed amendments/changes to the project are raised with, and approved, by Committee
- you notify roffice@uclan.ac.uk if the end date changes or the project does not start
- serious adverse events that occur from the project are reported to Committee
- a closure report is submitted to complete the ethics governance procedures (Existing paperwork can be used for this purposes e.g. funder’s end of grant report; abstract for student award or NRES final report. If none of these are available use e-Ethics Closure Report Proforma).

Yours sincerely
Rick Peterson
Deputy Vice-Chair

BAHSS Ethics Committee

* for research degree students this will be the final lapse date

NB - Ethical approval is contingent on any health and safety checklists having been completed, and necessary approvals as a result of gained.
03 December 2020

David Grecic / Alice Mees  
School of Sport and Health Sciences  
University of Central Lancashire

Dear David / Alice

Re: BAHSS Ethics Review Panel Application

Unique Reference Number: BAHSS 549 Study 2 amendment 30Nov20

Yours sincerely

Daniel Bürkle  
Deputy Vice-Chair  
BAHSS Ethics Review Panel
Ref: AMEE26042022

Alice MEES
Moray House School of Education and Sport

Date: 30th May 2022

Dear Alice,

Title: A Study of Cognitive Apprenticeship Approach to Outdoor Instructor Professional Judgement and Decision Making Development

The School of Education and Sport Ethics Sub-Committee has now considered your request for ethical approval for the studies detailed in the above application.

This is to confirm that the Sub-Committee is happy to approve your application and that the research meets the School Ethics Approval criterion for this particular project. A standard condition of this ethical approval is that should any amendment, or deviation from the original protocol outlined in your application need to be made to carry out or continue your research, please notify the Ethics Sub-Committee at MHSES-Ethics@ed.ac.uk.
The Committee also needs to be notified if there are any unexpected results or events once the research is underway that raise questions about the safety of the research.

Should you receive any formal complaints relating to the study you should notify the MHSE Ethics Committee immediately by email to MHSES-Ethics@ed.ac.uk

Yours sincerely,

On behalf of:
Dr Fiona O’Hanlon
Director of Ethics

The University of Edinburgh is a charitable body, registered in Scotland, with registration number SC005336
Appendix F – Outward Bound Trust Social Impact Report

OUR SOCIAL IMPACT 2024

Supporting young people: now and into their futures
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FOREWORD

Get good grades, but no matter how hard you try, it may not be enough.
Continuously post about your life, but beware every mistake is recorded forever.
Spend hours in front of the mirror, but don’t be too high maintenance.
Take care of yourself, but don’t be selfish.
Stay constantly connected to everyone and everything, but also keep it together.
Stay informed, but don’t have an opinion. Never harp on about issues that
matter to you.
Be perfect. Succeed. At all costs.

These are the everyday pressures I experienced as a young person. The “cost” was losing pieces of me along the way.
Thinking too much made my throat contract so I could barely breathe, so I chose to not think. Instead of diving into a world of social media, binge-watching YouTube and streaming films for hours, I turned to music and nature to find peace.

Until one day, in my final year of school, I met Steve from Outward Bound. He was calm, with a quiet demeanour — something I resonated with as a painfully shy person.
He told me about Outward Bound and how I could think about being a part of a more competitive university — that’s where my journey began.

As a city girl, it was more than I bargained for. We were jumping into a cold lake as soon as we arrived. The physical challenge reflected how I felt, plunging into new social situations, meeting new people, and making friends.
Away from the distractions of city life and being very focused on tasks like rock climbing helped us bond together as a group in ways I’d never experienced before. But it still felt self-centered for not being involved, forever.
or bold enough. I was anxious to use my voice and found having conversations tough, while self-criticism ran rampant in my head.

In my Outward Bound course, after the residential came our community project, this was where I truly found my place. I discovered self-esteem and a sense of belonging by realizing my quiet, attentive skills translated perfectly into research, planning, and keeping my astounded team on track.

I finally felt part of the team, working with people I barely knew a few months ago. I was also so proud of our project; successfully impacting over 100 primary and secondary students with self-growth workshops.

When it all came to an end, I was asked to deliver the opening speech for the ceremony. A terrifying thought for anyone, let alone an introvert like myself. But it helped me come into my own and I did well, really well.

For someone with a highly introspective personality, I found it empowering to make a speech about my experience as a young person. I couldn’t have been prouder of my 17-year-old self speaking to hundreds of people.

Outward Bound helped me understand my place in the world and gave me compassion for myself and others. I went from doing the best I could with the coping mechanisms I had, to a much broader toolkit. From binge-watching and doom-scrolling to going hiking, going to the gym, seeing my friends, and going indoor and outdoor rock climbing.

From being told the world is our oyster, to believing it really is.

The thing is though, that pressure to be perfect has never gone away, but that even critical voice in my head is now much smaller. And as the lakeside air fills my lungs, I feel like I can finally breathe again.

Legit,

EXECUTIVE SUMMARY

For over 80 years, Outward Bound has been led by the belief that regardless of their starting point, every young person should be able to thrive in all aspects of their lives: socially, throughout their education to employment and into adulthood.

By creating moments through adventures in the outdoors at Outward Bound, young people develop social, emotional skills that lay the foundations for positive behaviours and attitudes, enabling them to flourish at every stage, regardless of their background or economic circumstance.
The world in which young people are growing up today.

For a young person, finding their place in today’s fast-moving, uncertain world is daunting. Their mental health, contentment, happiness, and sense of belonging continue to be negatively compounded. Challenges of the digital world in which they live, the continuing national and global issues such as the cost of living crisis, together with concerning environmental and humanitarian situations, present a unique set of social, financial and health challenges to our young people not experienced by previous generations.

Many young people continue to feel anxious, overwhelmed, fearful and anxious in many aspects of their lives, resulting in their disengagement socially, impacting their education and in the long-term, leading to poorer employment prospects and wellbeing.

These feelings are experienced to a larger extent by young people from lower income families, from ethnic minority backgrounds or those with special educational needs or disabilities. They face several additional barriers - educationally, in terms of physical and mental health and in terms of the opportunities available to them that enable them to experience success and feel fulfilled.

OUR CORE VALUES

Our work is guided by our five core values.
We believe...

1. That we all have undiscovered potential.

2. In the power and intensity of learning through adventure.

3. In the balance between risk, reward and responsibility.

4. In compassion and respect for each other, and for our environment.

5. That all staff and participants should always feel valued and encouraged to be themselves.

Outward Bound understanding and supporting young people.

We seek to put young people at the heart of what we do and are guided by our core values. By listening to and working closely with schools, youth groups and employers, we tailor experiences that are appropriate to the contexts and needs of young people, ensuring they have opportunities to believe they are capable of more than they thought possible. Our courses in inspiring, wild, natural environments provide young people from all backgrounds with physical and emotional challenges which develop understanding, curiosity, and compassion for themselves, others, and the world around them.

This is only possible thanks to the generosity of our donors who provide charitable funding for the majority of young people. This support enables opportunities for individuals who otherwise wouldn’t have access to a transformational Outward Bound course.

We see our young people as a future generation who are compassionate, responsible and proactive, and who are able to stand up for themselves and those around them. In order to achieve this:

- We support young people in becoming sure and proud of themselves as individuals – individuals who are confident, independent and who believe in themselves and are able to cope with the changes and setbacks of life.

- We support young people in feeling secure and understood in their relationships with others and to feel accepted within their communities and connected to the places around them.

OUR CENTRE LOCATIONS

Our six centres are situated in some of the most inspiring, wild locations of the UK - the highlands of Scotland, the Lake District and Wales. The variety of environments on our doorstep gives us the flexibility to tailor immersive experiences according to young people’s needs and abilities.

**ENGLAND**
1. Ullswater
2. Haworth
3. Eskdale

**WALES**
4. Ogwen
5. Aberdovey

**SCOTLAND**
6. Loch Eilt

[Map of centre locations with images of each location]
THE OUTWARD BOUND EXPERIENCE

An Outward Bound course provides adventure and deliberate learning in the natural environment. We use the term authentic adventure to describe the activities and experiences we offer to young people. For many, an Outward Bound course will bring a significant "first" - the first night away from home, the first opportunity to go rock climbing and gorge scrambling, or the first chance to see themselves as leaders.

Away from their everyday surroundings, screens and social pressures, young people are encouraged to step outside their comfort zones. For some, that might be the residential aspect - living alongside peers, making decisions and being independent. For others, it might be out in the wild, natural environments where they face uncertainty and overcome physical and emotional challenges. Research confirms the benefits that outdoor adventures can have on feelings of happiness, self-efficacy and wellbeing. Every element of their experience is designed to give each individual the opportunity to discover the true extent of their capabilities.

AT OUTWARD BOUND, YOUNG PEOPLE CAN EXPECT:
- 24-hour pastoral care in all centres.
- Flexible and inclusive adventures - designed to suit the needs of the group, individual and conditions.
- To feel welcomed and understood.
- To be engaged in a range of adventurous activities and to build on their strengths.

Young people on our 2023 summer courses reported how they felt when at Outward Bound:

![Figure 1](image)

- I had fun and enjoyed myself. N=61.
- I felt good about myself and what I am capable of. N=61.
- I felt a sense of freedom. N=64.
- I felt safe and secure. N=65.
- I felt connected and accepted by others. N=62.
MEASURING OUR IMPACT

We carry out evaluations to understand a young person’s experience at Outward Bound and the impact their course has had both in the short and long term. We measure the skills, attitudes and behaviours developed on our courses using a variety of surveys and interviews.

Our evaluations show that young people leave Outward Bound with increased resilience, confidence and improved communication and interpersonal skills. These are shown to have a lasting, positive impact on their general wellbeing in the weeks, months and years after participating on an Outward Bound course. The stage at which impact is felt or ‘realised’ varies for each individual, for some it might be immediately during their course, or when they are back in their home or school environment and for others it might not be until later in life. Our evaluations are designed to capture and understand the impact at the different stages along that time continuum.

Our ‘Theory of Change’ underpins the key principles behind what we do at Outward Bound and the steps that lead to the outcomes discussed in this report.

We evaluate what we do at three different levels:

• The Outward Bound Outcome Survey (OBOS) developed by Outward Bound International and the OBI Research Advisory Committee is a statistically validated and reliable measure used to evidence growth in five broad outcome areas: Resilience, Self-Confidence, Environmental Responsibility, Social Competence and Compassion. These outcomes align with and support the UAE Sustainable Development Goals. We use this tool to measure outcomes across all of our different courses at an organisational level.

• For our education, early careers and summer courses, we use validated scales so we can be confident that the questions we ask have been tested to measure a particular skill accurately. For other early careers courses, our ‘Understanding Young People’ and Equity, Diversity and Inclusion (EDI) work, we have developed bespoke surveys.

• Interviews are used to understand in more depth the impact a course experience has on an individual in the weeks and up to decades afterwards.

The material presented in this report has been collected between 2019 and 2023. The majority of participant data and quotes have been drawn from surveys carried out at the end of or at specific time periods since their course. Retrospective pre-course measures have been used where noted. Quotes from teachers and our early careers participants have been drawn from interviews carried out up to six months after their course.

IN ADDITION TO OUR ON-GOING EVALUATION, WE WORK WITH ACADEMICS

who research specific elements of our approach and practice. In the last few years we have supported research by:

• Dr Jo Hickman Dunn, who looked at the social and physical geographies of People, Place and Processes at Outward Bound and the role each plays in a young person’s experience.

• Dr Jack Reed, who looked at how young people’s Outward Bound experiences are affected by the presence or absence of mobile technologies and social media.

• Dr Alice Nee, who explored how Outward Bound instructors make decisions in the field, and how the development of this decision-making can be intentionally supported to deliver learning and adventure in the wild.

OUTWARD BOUND IN NUMBERS

2022/23

In 2022-2023, Outward Bound partnered and worked with

387 SCHOOLS AND YOUTH GROUPS
24,232 YOUNG PEOPLE in the UK
18,793 EDUCATION
4,113 EARLY CAREERS
1,326 SUMMER

WE PROVIDE COURSES FOR YOUNG PEOPLE TO DEVELOP THEIR SOCIAL AND EMOTIONAL SKILLS

Supporting them at key points of their education and as they transition from primary to secondary school, through further education, and onto the early stages of their careers.

PRIMARY
SECONDARY
FURTHER EDUCATION
EARLY CAREER

IN 2022-2023, WE CONTINUED TO PROVIDE CHARITABLE FUNDING

for many of our young people to ensure that their financial situation was not a barrier to them taking part.

Many come from deprived urban or rural areas, or whose situations or backgrounds put barriers to access opportunities, including but not limited to young carers, young people from ethnic minority backgrounds and young people from low income households. [Image]
YOUNG PEOPLE FINDING THEIR WAY IN THE WORLD TODAY

For every young person, the way in which they see, think about themselves and find their place in the world is shaped by their upbringing and the context in which they live. The expectations placed on an individual and the path they’re expected to lead in life can often be prescribed based on where, how and by whom they were raised.

At Outward Bound, we like to challenge that and believe that regardless of a young person’s background, with some support, each individual should be given the chance to thrive in whatever they choose to do.

Growing up today, finding their place in our fast-moving digital and often uncertain world can be daunting for a young person. In addition to the expectations placed on them by others, the constant exposure to news, images, choices, and distractions can feel noisy, and can leave many young people feeling lost, overwhelmed and anxious about the future. Rates of mental health, anxiety and feelings of loneliness amongst young people remain higher, with many continuing to report low levels of confidence and happiness. Their poor mental health and feelings of social isolation are negatively impacting their daily lives, their attendance and motivation at school, their social confidence and their ambitions, resulting in poor overall wellbeing.

“One of my bugbears in life is that people tell me the children from this area can’t do that because they’re from Norwalk... I’ll fight for my school and my kids because we have to get them to realise that the world is still there. It’s still big. It’s still open, and because of the pandemic we’ve got to stop limiting what children do.”

Joe Clarke, Senior Deputy Headteacher, Ashill Academy West Midlands.

SUPPORTING YOUNG PEOPLE INTO THEIR FUTURES

We understand that every young person’s context and the experiences they have before they come to Outward Bound shape how they think and feel about themselves, others and the world around them.

During an Outward Bound course, a young person is provided with experiences tailored to their needs which are designed to develop specific social and emotional skills.

Whether it be travelling away from home, making decisions and being independent for the first time, or working with their peers to sail across a lake, traverse mountains or stand down a face of safety, the young people can see first-hand what they are truly capable of.

After their course, they can feel more sure of themselves, more confident in their relationships and feel empowered to face future challenges head on.
Supporting Young People

To Be Confident, Independent, and Secure In Themselves
A young person who is sure of themselves and their capabilities, who feels able to face and overcome feelings of stress, overwhelm and anxiety, will be more likely to be able to navigate through the daily noise and pressures. They will feel empowered to choose their own path, become who they want to be, and achieve their potential.

SUPPORTING YOUNG PEOPLE TO BE CONFIDENT, INDEPENDENT, AND SECURE IN THEMSELVES

For young people, especially those who have had a tough start in life, the opportunity to develop fundamental social and emotional skills positively influences their outlook on life, and means they are more likely to be able to face and overcome uncertainty and fear during the hardest of times.

Social and emotional skills are learned and developed through experiences that challenge, provide contrast and which give an opportunity to experience a sense of achievement.

Finances, culture, health and social factors can prevent young people who are not in education, employment or training (NEETs) from accessing support needs or who are from an ethnic minority background from accessing opportunities. They often find themselves in a cycle of low educational and employment outcomes and low levels of confidence and happiness, and ultimately, poor wellbeing.

*At the age of 16, the average net hourly rate for someone qualified to work in a degree apprentice as much as someone qualified to work in a degree as highlighted by the Institute for Social Research.
The wild, natural environments at Outward Bound provide a contrast to a young person’s home. This captures their attention, inspires a curiosity, a sense of adventure and provides them with tangible learning experiences.

Whilst on their course, young people think for themselves, take on responsibility and make decisions. Being trusted to lead their team, look after kit or paddle their own canoe provides young people with a feeling of control which is important for developing independence, responsibility and agency. These experiences help shape how a young person, regardless of their age or background, begins to think about themselves and their capabilities; it nurtures a different mindset, outlook and sense of what is possible for them.

Our evaluations carried out at an organisational level using Outward Bound International’s Outcome Surveys indicate that young people improve their self-confidence after taking part in one of our courses.

**Figure 12:***

At the end of their course, young people reported improved scores for self-confidence compared to their retrospective pre-course score. n=1337

---

**Transition from primary school to secondary school**

For a young person about to transition from primary to secondary school, to new places, with new people and heightened expectations placed upon them by others, the move can feel unsettling and often stressful with many unknowns.

Travelling away from home, being responsible for their belongings and making decisions are among many of the first-time experiences a young person will have at Outward Bound. It builds an individual’s sense of independence and confidence. They return to school from Outward Bound with a new awareness of what they are capable of and feel more self-assured. They can think and make decisions by themselves, find it easier to express their feelings and feel more prepared and excited to try new things as they transition to the next stage in their education.

**Figure 13:***

At the end of their course, PRIMARY PUPILS...

- 86% had learned to look after themselves. n=2790
- 84% had achieved things they thought they couldn’t do. n=2796
- 81% had found they could do things on their own. n=2791

---

“Here in the North West, we lack social mobility, and what Outward Bound helps to do is widen aspirations. What it does more explicitly is provide the opportunity to see things and experiences that pupils didn’t know existed, whether that’s seeing a specific career path through an interaction with one of the instructors, or from the environment itself – they recognise places where they might want to go.

Secondary School Assistant Headteacher, North West.”

“I have learnt that I am more capable and resilient than I thought because I have done things I never thought I could do. I only did it a few days. I have climbed three mountains, been gorse walking and done so much more. I now have more confidence and will try new things. The acquisition contributed to this learning because I had never done anything like it before, but I had so much fun and tried so many things, it showed me I can do anything I put my mind to, and I am very proud of myself. Female student, 14, Harrower of Epping School, Essex.”

“Transition from primary school to secondary school

For a young person about to transition from primary to secondary school, to new places, with new people and heightened expectations placed upon them by others, the move can feel unsettling and often stressful with many unknowns.

Travelling away from home, being responsible for their belongings and making decisions are among many of the first-time experiences a young person will have at Outward Bound. It builds an individual’s sense of independence and confidence. They return to school from Outward Bound with a new awareness of what they are capable of and feel more self-assured. They can think and make decisions by themselves, find it easier to express their feelings and feel more prepared and excited to try new things as they transition to the next stage in their education.

At the end of their course, PRIMARY PUPILS...

- 86% had learned to look after themselves. n=2790
- 84% had achieved things they thought they couldn’t do. n=2796
- 81% had found they could do things on their own. n=2791

---

“When they’ve got to dress themselves, get the kit organised and make sure things go back, get checked off. Those things, (think), are quite a difficult thing for them to do. Because they’ve got independence, everything is done for them at home for the large majority. So that is a thing to learn and they have no choice – if you have to do it yourself, you’ll get on with it.

Junior Headteacher, Headteacher, Daisyfield Primary School, Blackburn.”
Through secondary school and onto further education

As a young person progresses through their secondary education, each encounter and experience influences their sense of identity – who they are and what they can do and how they think others perceive them. Being exposed to situations at Outward Bound that encourage them to step outside their comfort zones and social circles challenges their sense of self and builds an awareness of their capabilities. They learn what it feels like to face a difficult situation, experience failure, pick themselves up, try again and succeed. This shifts their mindsets, and instead of fearing new situations, they become more motivated to set goals for themselves and develop a more positive approach to the unknown. Through tangible experiences, they learn what it means to be responsible and develop organisational and time-management skills. This prepares them for future decisions and their transition to further education and into their careers.

At the end of their course.
SECONDARY PUPILS...

<table>
<thead>
<tr>
<th>Retrospective pre- and post-course average scores for confidence.</th>
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<tbody>
<tr>
<td>Tends like me vs. Dislike me</td>
</tr>
<tr>
<td>I know I have the ability to do anything I want to do. (%)</td>
</tr>
<tr>
<td>When I apply myself to something I am confident. I will succeed. (%)</td>
</tr>
<tr>
<td>I believe I can do it. (%)</td>
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</tbody>
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<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
</table>

At the end of their course, young people reported feeling more motivated to:

- Set learning goals that will challenge them. 86%
- Try harder to overcome the things they find difficult at school. 81%

Stepping up from education and into the workplace

For a young person starting out in a career, the workplace can feel intimidating and unfamiliar. Under the demands of an employer, an individual may easily begin to doubt their capabilities, lack confidence or feel overwhelmed at the responsibility of challenging tasks or situations. At Outward Bound, we work with over 4,000 apprentices and graduates every year, helping them to develop the skills and behaviours to set them up for a fulfilling career. Participating in an Outward Bound apprenticeship or graduate programme helps bridge the gap between education and work. Through teamwork, problem solving and physical challenges, their self-confidence and sense of belief develops. Company values, culture and working behaviours are applied to real circumstances and young people return to the workplace with an increased understanding of what is expected of them and sense of value that they can bring to the company. Investing in the development and wellbeing of employees early on in their career has been shown to not only help prepare the individual for the workplace, but positively impacts workforce engagement and performance overall.

At the end of their course.
GRADUATES...

The programme helps encourage you to take on leadership roles where you may have normally shied away. I think this helps people who aren’t normally confident to take on these types of roles to gain experience and build an awareness of strengths and weaknesses, without it being in a situation with business consequences.

Male Participant, Airbus Graduate programme, 2011

Outward Bound made me feel quite important, Downe went on an offsite course to develop us as people. It was to get us to where we needed to be, it made you feel like you’re important, they’re involving you in everything. Managers before and afterwards, they checked in with you, to see how the course went, they take an interest in how you got on and how you found it. This just pushes me more to do my best and that they’re proud of me, so I should make them proud.

Jean Anderson, 31, Boeing, speaking in 2013, four years after her apprentice course.
CASE STUDY - ROLLS-ROYCE

Apprentices | Five-Day Course | Lake District

Rolls-Royce and Outward Bound have worked in partnership to develop workplace skills and behaviour in Rolls-Royce apprentices since 2004.

Results from an evaluation showed that apprentices who had been to Outward Bound were more likely to report an increase in their understanding and satisfaction with their skills at work, than those who had not been to Outward Bound. (n=722)

- 88% reported increased understanding of the value they can bring to a team. 79% of those who had not been to Outward Bound reported an increase.
- 85% reported increased satisfaction with their level of confidence at work. 72% of those who had not been to Outward Bound reported an increase.
- 85% reported increased understanding of how to communicate effectively. 79% of those who had not been to Outward Bound reported an increase.

"Outward Bound allowed me to collaborate with others and use problem solving skills to master the art of simplicity. I wasn't in control of what was happening all of the time and I had to adapt to new situations allowing me to be agile. I had to take a leadership position and be bold by speaking up and taking responsibility for my actions and those of the team."

Female participant, Rolls-Royce, commenting in 2013, three years after her Outward Bound apprenticeship course.

3
SUPPORTING YOUNG PEOPLE

IN FEELING SECURE WITHIN THEIR SOCIAL GROUPS AND NETWORKS
The extent to which a young person feels connected to, accepted and understood by those around them, be that in their social lives, at school or in the workplace, has a large impact on their mental health and overall general wellbeing.

Fear of being judged, labelled or feeling different can leave many young people fearing social situations and feeling anxious. With the concept of a young person's community constantly changing and expanding, the need for a young person to feel safe and confident in the multitude of networks in which they find themselves interacting with others, is vital.

SUPPORTING YOUNG PEOPLE
IN FEELING SECURE WITHIN THEIR SOCIAL GROUPS AND NETWORKS

Each Outward Bound course is underpinned by an understanding of the basic needs young people have in order for them to feel, safe, valued and understood by those around them. In 2022 we incorporated a fifth value, a belief that all staff and participants should always feel valued and encouraged to be themselves. We are committed to ensuring the outdoors is a space for everyone, and over the past five years, we have made considerable progress towards our Equality, Diversity and Inclusion (EDI) strategic goals.

As a charity, remaining relevant and living our values is paramount for our continued success. Our primary mission is positive impact for young people.

Our belief is in developing human potential. As we strive to become bigger, to continue doing impactful work with an ever-increasing number of young people in an ever more diverse world, the need to continue recruiting and retaining the best staff from the widest pool will become greater. We also want all of our staff to have a deep understanding of the wide variety of backgrounds our young people come from, so that they are enabled and empowered to recognise the opportunities for influencing inclusive culture through leadership, decision making and process planning.

I didn’t feel the difference between the adult that my instructor was and myself - he was like a friend.
Summer Adventures participant, 19, 2022.
Equity, Diversity and Inclusion milestones achieved at Outward Bound since 2022
- Led and delivered a range of events and initiatives to raise awareness of young people from diverse ethnic minority backgrounds in the outdoors.
- Delivered three Women’s Outdoor Leadership courses, providing training to prospective female outdoor leaders.
- Recruited and trained 25 EDI Champions across Outward Bound.
- Made changes to our HR policies and procedures to ensure they are inclusive of people from a range of different backgrounds.
- Delivered training to ensure we are able to understand and deliver the most impactful experiences possible for young people from all backgrounds.
- Collaborated with our partners in the Access Unlimited coalition to facilitate a series of sessions sharing best practice with EDI in the outdoor sector.

We believe that the outdoors should be accessible, and a place where everyone, regardless of background, identity or where they come from, can feel accepted and respected. We want to ensure that Outward Bound reflects this, and we strive to be somewhere where every young person can see themselves represented so that they feel seen and understood. We believe, by making changes to our mindsets, our actions and our approach, that our courses have the potential to be even more impactful for young people. This is a key focus for us moving forwards and is expressed in our six values — the belief that our staff and participants should always feel valued and encouraged to be themselves.

Katie O’Hara, Equity, Diversity & Inclusion Strategic Lead, Outward Bound.

At the start of 2020, influenced by our EDI strategy, we worked together with Developing Youth Practice on an ‘Understanding Young People’ initiative. This involved trust-wide training underpinned by Choice Theory developed by Dr. William Glasser. The theory uses five basic psychological needs (including love and belonging, self-worth and power) to explain an individual’s behaviours, emotions and thoughts.

Guided by an understanding of these basic needs and a young person’s context, we aim to provide a setting where each individual can feel valued, able to be themselves and ready to take part in experiences that have potential to positively impact their self-perception, mindsets and future ambitions.

The percentage of young people reporting they experienced feeling welcomed, positive relationships and felt understood “often” or “always” whilst at Outward Bound.

![Percentage of young people](image)

During an adventure in the outdoors, teamwork or skills such as communication, problem solving and leadership are put into practice. Each face-to-face interaction, be that on the water, in the mountains or during social time on the course, are key in developing rapport and a connection. Spending time with others, getting to know each other, sharing unique and often emotional experiences away from social labels that may exist in their home, school or work places allow a young person to deepen their relationships with those around them. Regardless of the stage they are at in their education and careers, it provides opportunities to develop an understanding of one another, respect and sense of support that they may not have felt before.

![Percentage of young people](image)

I used to feel embarrassed when I was wrong, but now because I’ve gotten closer with my team, I feel confident no matter what. My favourite moment on the course was when we made it to the top of the mountain and reached the summit together. I showed we are equal and care about each other strongly.

Abbott, S, Sherpa Trinity Academy, Bradford.
Over a ten year period, October 2012 to September 2020, we evaluated our early careers courses to understand how apprentices and graduates benefit from an Outward Bound programme. Results were analysed based on the participants’ ability to demonstrate key competencies. Working with others was one of several key stand out requirements highlighted by our clients and instructional teams.

Following the Outward Bound programme, apprentices and graduates reported increases in their ability to work with others. Average percentage of respondents [between 2012 and 2022] who agreed they were able to ‘fully’ or ‘mostly’ meet the ‘working with others’ learning objective.

Figure 11.

Outward Bound has helped me to be more confident with new people when working collaboratively in a group. This helped me to be more vocal when expressing an opinion. The main benefit from Outward Bound was understanding that different personalities of people mean adopting personally to achieve better results.

Michael, participant, in 2022, six years after his course.

Young people feeling understood, and understanding others

At Outward Bound, there is an emphasis on seeking to understand one another - to understand an individual’s story and, with it, their behaviour. This approach increases empathy on many levels. Young people leave Outward Bound feeling safer and more supported in their relationships and more connected with their peers and teachers. With a heightened sense of belonging and security, an individual feels more confident, willing to try new things and more comfortable expressing their emotions. Belonging is a key component to resilience and an individual’s ability to adapt to changing situations and overcome challenges.

Results from Outward Bound International’s Outcome Survey* indicate that young people improve their resilience, their social competence and their compassion for others after taking part in one of our courses.

At the end of their course, young people reported improved scores for resilience, their social competence and compassion for others compared to their retrospective pre-course score. % of participants reporting improved scores.

Figure 10.

Two days after Outward Bound I returned back to work and almost straight away I felt like I was asking not more personal questions, but getting a bit more involved with people. Asking ‘how was your weekend’ and ‘how are people getting on?’ I think Outward Bound helps initially with a big load of confidence and set me up for every time I moved departments. You can just be more relaxed around people, which I think definitely happens straight away.

Cesar, participant, 22, Gatwick Airport, speaking in 2022, four years after his Outward Bound Apprentice course.
I usually tend to cry or have panic attacks at things I find scary – I learnt I can be independent if I want to be.

Sarah, 13, St. Margaret Ward Catholic Academy, Staffordshire.

At the end of their course, young people indicate feeling more able to express their emotions and adapt to changing situations. Percentages indicate those who reported an improved score at the end of their course compared to their retrospective pre-course score.

Figure 5.

- Emotional Control: 78% (N=1355)
- Flexible Thinking: 79% (N=1356)

*Full results of pre/pos scores included in research appendix.

The main change in pupils’ attitudes is their ability to interact positively with adults. Breaking down barriers and building rapport in the adventurous environment humanises us and enables the students to seek support and positively engage with us.

Miller Powell, Trainee Teacher, St. Margaret Ward Catholic Academy, Staffordshire.

For young people with additional learning needs or for young people who, for other reasons such as caring responsibilities, may face barriers to integrating socially, an opportunity to strengthen bonds and create a common understanding and appreciation of one another’s needs can be particularly powerful. It helps them feel they are not alone and in turn, increase their willingness to step into new situations and try new things.

Young people reported feeling more supported by others after their course.

Figure 14.

- Young people reported an increase in the extent to which they feel supported by and able to rely on their friends at the end of their course: N=1355

I used to feel overwhelmed in terms of my anxiety in groups, thinking how they’d perceive me and how I was acting. Being around people I didn’t know and then helping and encouraging me means I can now see them as equals, so to speak. They’re like me, just with different strengths and weaknesses. I didn’t think I could do the course. I didn’t think I’d be able to get through it, but I did, and it has shown me that I can get through anything.

I’m a lot happier. I’m willing to go and do things and just get up and go out. I’m more capable. I can do things I wasn’t able to do before. I can cook more meals, go out to Tesco on my own. I think I can live on my own more now. I feel like I’m more capable of doing that and just being independent.

Sean, St. sewer Society participant, 2013.

*Full results of pre/pos scores included in research appendix.
None of the learners attending had ever attended an overnight school trip before or been away from home without a family member overnight. The relationships developed between the Outward Bound staff and our learners was incredible. Trust developed immediately from the initial school visit and from there, learners felt able to go and participate.

Since returning, our learners have formed bonds with each other. Despite being in different classes and year groups, firm friendships have developed. Friendships and social interactions can be challenging for our learners, and this opportunity has increased social skills, empathy, and communication abilities. It has been incredible to see the confidence developed in our learners.

Jane Murray, Principal Teacher and Specialist EBD Provision, Stirling Secondary Autism Provision at St Modan’s High School, Stirling.

CASE STUDY - STAFFORDSHIRE SCHOOLS

Many children growing up in Stoke-on-Trent in Staffordshire are likely to suffer the effects of poverty and neglect, more so than those living in other regions in the UK. Many who came to Outward Bound had special educational needs or experienced low educational attainment. A lack of self-esteem, confidence and resilience typically characterises the young people, resulting in low aspirations; a lack of opportunity is one of the biggest challenges they face.

"One young boy in my group was really apprehensive about everything, to the point, where we had to have joint conversations each night about the next day’s activities. He swore he would not go in the tunnels, go bungee jumping and did not want to do the overnight expedition. He managed to do all three. It’s difficult to gauge but he certainly seems to walk a little taller around school and is not as shy in a classroom setting."

Teacher, Staffordshire school.

The aim of the Outward Bound course was to provide an opportunity for young people from disadvantaged backgrounds in the West Midlands to experience activities in wild, natural environments which will develop their confidence, their engagement with learning and improve their confidence in working with and building relationships with others.

Each course was tailored to the needs and abilities of the students and involved activities such as mountain walking, rowing and canoeing, culminating in an overnight camp.

THREE MONTHS AFTER THEIR COURSE

Accompanying staff observed improvements in the young people’s sense of capability, in their resilience and in their willingness to have a go at things they perceive to be difficult. (p. 12).

THE YOUNG PEOPLE ARE MORE:

100%
Aware of what they are capable of achieving.

Likely to keep going when they encounter difficulties and setbacks.

Aware of their strengths.

THE YOUNG PEOPLE ARE MORE LIKELY TO:

93%
Attempt things that are difficult.

87%
Seek out new opportunities to challenge themselves.
CASE STUDY - YOUNG CARERS

Eight different young carers organisations from Scotland wanted to make sure that carers are recognised, valued and given the support they need to give care with confidence. They also wanted to provide an opportunity to focus on and consider their own health and wellbeing outside of caring.

The purpose of the trip was for the young people aged 10 – 16 to have fun, build connections with other carers, increase their confidence and have a well-deserved break from their home lives. They took part in activities including gorge walking, canoeing and rock climbing.

“I want to be a social worker, this course has helped me overcome fears and will help me get there.”
— Brian, 13, Dundee Carers Centre.

“The young people will benefit from this experience in a number of ways; more self-belief, being more aware of helping others, organisational skills and dealing with uncomfortable emotions.”
— Lana Verian, Support Worker, Crossroads Young Carers.

“The course has contributed to the young people’s lives back at home because they have had an essential break. They now have the confidence to say ‘yes’ to more and try new things.”
— Sarah Parker, Young Persons Practitioner, Action for Children.

Through sharing experiences with others who are in a similar position to themselves and being supported to overcome challenges, their key workers hope they leave the course with an increased sense of belonging, a heightened confidence in and awareness of their own capabilities. They also hope the young people will have increased willingness to take on other opportunities in the future.

AT THE END OF THEIR COURSE
The young carers reported improvements in their relationships with others.

90% Reported that they got to know other young carers better.

85% Reported got to know their key worker better.

Young people adapting and responding to changes in their world

Spending time, getting to know others who come from different backgrounds and life experiences to their own, especially for those who live in areas of low social mobility, is key for young people to feel comfortable in today’s ever-changing, diverse society. This exposure expands a young person’s awareness of others’ values, needs, and opinions and with it helps them feel less intimidated by difference and more able to adapt to the different social contexts in which they will inevitably find themselves.

As a young person progresses from the familiar setting of school, into the work environment, they will come into contact with people who hold different viewpoints and values to their own. The skills to be able to negotiate social situations, listen to, and challenge viewpoints in an appropriate, respectful way are key.

“I will try to speak up more when I disagree with the group, I have had feedback from them that when I do this, it’s useful and not taken the wrong way.”
— Graduate trainee, Skills Building Society, commenting on their course in 2021.

I learnt to just be yourself, be open and just chat to anyone, you are probably going to have common interests with at least a few people in your group. I think when I go to school form, there will be new people and I’ll feel relaxed about meeting and chatting to them.
— Miha, 19, speaking in 2021, two years after her Summer Adventure.
CASE STUDY - THE MARK SCOTT LEADERSHIP FOR LIFE AWARD

Bringing together young people from diverse backgrounds is one of the aims of our bespoke programme in Scotland – the Mark Scott Leadership for Life Award.

The Mark Scott Leadership for Life Award was developed by The Mark Scott Foundation and Outward Bound following the unproven sectarian murder of Mark Scott in 1995. The aim of the Award was to bring together young people who were often separated by their backgrounds, sectarianism, racism or terrorism. The Award, delivered over a six-month period, starts with a five-day Outward Bound residential course designed to develop young people’s personal skills and attributes, such as confidence, determination and the ability to work with others. Upon returning to school, they work in groups to identify, organise and deliver a project that benefits their local community. The Award provides a unique opportunity for young people to prepare for their next step onto higher education, training or employment and to make a positive contribution to society.

“Some young people can attend the Award with quite a narrow viewpoint of others. This seems to be formed due to a lack of time spent with others with a different experience of life to their own. Time and space, shared experiences such as going on an expedition together, reviewing and reflecting, project planning and agreeing on issues that impact them within their communities. This can help those with previously fixed opinions of others from different backgrounds, upbringings, histories, and opportunities.

The Award creates this time, space, reflection and shared experience that can help challenge preconceived notions of others and find common ground and respect for difference.”

Chris McAlpine, Project Coordinator, Leadership for Life Award Team, Outward Bound.

*45/70 is a sample of the 141 young people who participated in the Award in 2013/14.

4
SUPPORTING YOUNG PEOPLE INTO THEIR FUTURES

Figure 23.

Young people reported an increase in their overall social confidence at the end of the Award compared to at the start: Average scores for participants’ confidence in helping or asking for help from people from different backgrounds. N=37

<table>
<thead>
<tr>
<th></th>
<th>Start of Award</th>
<th>End of Award</th>
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<tr>
<td>From a richer or poorer background</td>
<td>3.0</td>
<td>4.8</td>
</tr>
<tr>
<td>From a different religious background</td>
<td>4.9</td>
<td>4.4</td>
</tr>
<tr>
<td>From a different racial or ethnic background</td>
<td>4.4</td>
<td>4.6</td>
</tr>
<tr>
<td>From a different school</td>
<td>3.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Identifies as LGBT</td>
<td>4.3</td>
<td>4.3</td>
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0 1 2 3 4 5 6 7 8
We see young people in the future as a generation who are proactive, aspirational and compassionate. Young people who feel empowered to realise their ambitions and have the confidence to lead, advocate for others, and stand up for what they believe in.

We know that adventurous activities in nature that build a sense of confidence, resilience and social skills can have a lasting impact on a young person’s wellbeing, their self-image, sense of place in society, on their connection to nature and their aspirations for the future.

**SUPPORTING YOUNG PEOPLE INTO THEIR FUTURES: LASTING IMPACT ON SOCIAL AND EMOTIONAL SKILLS**

The skills, behaviours and attitudes developed on a course remain with an individual long after they leave Outward Bound. Their experiences and learning stay with them as they progress through their education, into their careers and have a lasting impact on a young person’s sense of self, on their connections with people and their attitudes towards the natural world around them.

The stage at which outcomes are felt or realised vary considerably for each individual. For some, the learning from their course may not be realised until they are back in their home, school or work environment and are faced with situations where they are able to draw back on strategies or mindsets they used on their course. For some this may be a very conscious process, for others, as we have learnt from talking to our alumni, the impact of their Outward Bound experience may be more of a subconscious influencing of values, outlook or attitudes and it is not until later in life that individuals realise the impact it has had on themselves and their lives.
**Lasting impact in the classroom**

After they return back to school from their course, teachers report that they continue to see positive changes in young people's self-awareness, in their approach to challenge and change as well as in their relationships with their peers and teachers.

% of teachers reporting an increase in young people's self-awareness up to three months after their course. 
N=164.

- 92% are aware of their strengths.
- 87% are aware of the areas in which they need to develop.
- 94% are aware of what they are capable of achieving.

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**2-3 months after their Outward Bound course, school staff continue to observe positive changes in young people's interpersonal skills and relationships in the classroom.**

- They report young people are more considerate, supportive and encouraging towards their peers. 86% of school staff reporting they have observed that young people do the following more often. N=156.
- 86% The extent to which they show consideration for others' needs.
- 86% The frequency with which they encourage their peers.
- 87% The frequency with which they support their peers.

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Pupils had the opportunity to experience something out of their daily school routine. This has helped them to be more ready and possibly inspired to get back to school life.

- Cristina, Music Teacher, Holy Roger PS High School, commenting in 2023, one month after their course.
Accompanying school staff report on positive changes they have observed in young people's resilience up to three months after their course.

The extent to which they attempt things that they believe are difficult, N=160.

91%  

Their ability to keep going when they encounter difficulty and setbacks, N=159.

88%  

The lasting changes I have seen in learners is their willingness to try out new things and to really challenge themselves with stepping outside of their comfort zones.

Kerby Costello, Training Adviser, Futureworks, Manchester.

"I used to think that I just needed to pass, and I couldn't do better than that. But I think I could actually work harder to do even better than that. So, that's my aim for this year."

Eilidh, Summer Adventures participant, speaking in 2019, one month after her course.

CASE STUDY - TOBERMORY HIGH SCHOOL

Tobermory High School is a small, rural, state secondary school serving towns and villages on the Isle of Mull.

Despite coming from a close-knit island community, teachers had noticed a particular lack of cohesion and co-operation between pupils on their return back to school after periods of lockdown and so teamwork, communication and strengthening of relationships became the focus for their course.

"Since coming to Outward Bound, teachers have seen them getting on better, they're more helpful to each other and the silly banter is disappearing as well. People are chatting more who I haven't seen chatting previously, helping each other out and finding each other more approachable."

Jonathan Mack, Teacher, Tobermory High School, Isle of Mull.

The pupils completed activities such as raft building, canoeing and abseiling and towards the end of their course, they enjoyed a cookout and star-gazing.

6 months after their course, 74% of pupils reported an increased sense of belonging compared to before their course, N=192.

*All results of pupil/ball scores presented in research appendix.
Lasting impact in the workplace

Young people who came to Outward Bound on an apprentice or graduate course up to four years ago reflect on how the course prepared them for the world of work. The practical tasks which developed their communication and teamworking, built the foundations for a collaborative, cohesive workforce culture.

Outward Bound developing collaborative, productive teams at Rolls-Royce.

Rolls-Royce employees who came to Outward Bound as part of their apprenticeship up to four years ago recognise the impact their learning had on their teamwork and communication skills. The percentages reflect those in agreement that their learning at Outward Bound contributed to their performance at work. N=43.

Learning about COMMUNICATION SKILLS at Outward Bound has had a large/significant impact on their performance at work.

86%

Learning about TEAMWORKING at Outward Bound has had a large/significant impact on their performance at work.

89%

A lasting respect and appreciation for the natural world

The varied natural environments in which Outward Bound courses happen feature heavily in young people’s learning and memories from their course. The mental health and wellbeing benefits of young people spending time in nature have been widely reported, particularly for those from disadvantaged backgrounds. However, with adolescence being recognised as a time in an individual’s life where connection with nature suffers and with large inequalities in access to the outdoors still present for those from ethnic minority backgrounds and lower socio-economic groups, the need for supporting young people in valuing the outdoors and developing a sense of connection with nature remains significant.

Recent evaluations and research\textsuperscript{6,11,12} highlight the importance of the places in which our Outward Bound courses happen, one of the key components ‘Home’ PS1 in our pedagogical approach (people, place, process). At Outward Bound, young people are given the time and space to immerse themselves in nature fully. By experiencing sights, sounds and sensations that are new to them, they develop a heightened interest and engagement in their surroundings – things they may have previously only seen on a video or in a textbook truly come to life, and their awareness and understanding of the world around them increases.

At the end of their course, young people reported improved scores for environmental responsibility\textsuperscript{*} compared to at the start of their course. % of participants reporting improved scores. N=159.

80%

\textsuperscript{*}Note the wellbeing and mental health of young people reporting improved scores had a positive effect on their mental health.

\textsuperscript{**}Environmental Responsibility is defined as awareness of our need to care for and respect the natural world (Outward Bound International’s mid-term survey data).

There’s not that many people from ethnic minority backgrounds who do go into the countryside. There’s a barrier that our parents didn’t really go to the countryside and they’ve not got the equipment to go there or because they’ve not been taught. They’re not going to learn it so then they’re not going to take us and it’s just like a cycle that will keep going.

Male, mental health young men’s programme, participant from Lindsey Education Trust (Sheffield) – group interview 2022.
81% of accompanying school staff agreed that the young people are more aware of the impact of their actions and behaviour on the environment after their course. N=108

You don’t have to deal with the millions of people, the lights, the cars, the sounds, the smells, the deafening noises. You don’t have to deal with any of that. There’s sort of a therapeutic ambience in the air and it just puts you more at ease, a little bit more calm and that way you can sort through your thoughts a little bit easier.

Hannah, 15, speaking in 2022, six months after her Summer Adventure.

336
A lasting connection to places and nature

Today we have an active community of 5,000 Outward Bound Alumni who connect with each other, share memories and continue to support our work. The environment and nature remain central to their memories and many have developed a lifelong respect and appreciation for the natural world. They recognise that their emotional, physical and often spiritual connection to nature began for them while at Outward Bound.

“Being exposed to the landscape, the elements, all sorts of conditions that we were in for four weeks at Outward Bound, it makes you aware of the world we live in, the importance of it and the beauty of it and how we need to take care of it.”

Mary Levison, ’6, course in 1965 at Rhuwaear.

“They’re places of deep reflection and connection. It’s eternal stuff. It’s hard to describe what it is but there’s something, a power there that you can use as a resource, it’s renewable clean energy for when the world gets tough.”

Tim Partridge, ’88, course in 1988 at Abercomley.

A lasting impact into adulthood

An Outward Bound experience not only develops fundamental social and emotional skills in young people, but provides an opportunity from which life-long connections, values and appreciation of people and places grow, leaving an imprint for years and even decades after their course. When Outward Bound turned 80, we took the opportunity to invite some of our alumni to share their memories and experiences and to hear how their Outward Bound experience has changed in relevance and meaning as they have progressed through different stages of their lives.

“I had not been to Outward Bound and if I had missed 07, I would have potentially ended up in the care system myself. I think it is one of the reasons why I have always wanted to work with children from deprived areas and I have gone on to get my degree.”

Lauren Kallin, ’76, course in 2000 at Ulverston.

Outward Bound has shaped and influenced the trajectory of many of our alumni’s lives. The confidence they developed at Outward Bound has enabled them to take steps in their careers that perhaps they would never have taken or has allowed them to overcome challenging relationships and situations in their home lives. For some, their experience has enabled them to step out of a cycle of deprivation and thrive in a fulfilling career. Many agreed it has influenced their mindset, their values and outlook on life.

“I think that’s something which Outward Bound taught me, that we are all valuable people and we’ve all got something to offer.”

Mary Levison, ’6, course in 1965 at Rhuwaear.
5
OUTWARD BOUND IMPACTING AND INFLUENCING

INDIVIDUALS’ PATHWAYS THROUGH LIFE
A young person’s pathway through life can often be determined by their upbringing and the context in which they live. Significant efforts have been made to close the attainment and opportunities gap for young people in recent years. However, young people from areas of low social mobility, socio-economic deprivation, ethnic minority backgrounds, or those with additional learning needs, still face significantly more barriers to their learning, to gaining secure employment, and poorer health and wellbeing outcomes, than their more affluent peers.

Through our charitable funding, we ensure that finances are not a barrier to an individual accessing an Outward Bound course. We believe that, regardless of their background, and with support, every individual should be given the opportunity to develop skills and behaviours that enable them to make decisions and positively influence their own pathway and better their own wellbeing.

OUTWARD BOUND IMPACTING AND INFLUENCING INDIVIDUALS’ PATHWAYS THROUGH LIFE

The lasting changes to an individual’s sense of self, on their connections, and on their ability to deal with the unknown and change, are three key ways in which an Outward Bound course can be shown to support young people’s wellbeing. The changes in a young person’s values and mindsets can influence the pathway they take as they progress through their education, career and into adulthood, regardless of their starting point or background.

It has reminded me that there is more in my control than I perhaps realise. I have to put myself out there, make opportunities for myself to go out with friends and believe in myself. I have regained a lot more self-confidence again, which makes me feel much better in myself.

Tom, 16, Stances Adventure participant, 2011.
Impact on wellbeing

During 2023, we carried out research across different programmes using the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) [1]. Results indicate that young people’s wellbeing increased at the end of their course.

Figure 25

79% Young people reported an improvement in their wellbeing following their Outward Bound summer course. N=28

Before, I wouldn’t really want to ever do school trips or go away, but now I do because I’ve realised it’s fun. I didn’t really like being away but I feel fine going away now, just going to different places. Then you can do more things, there are more experiences that you can do. More things set out for you.

Robbie, 14, Margaret Academy, London.

Figure 26

AVERAGE WELLBEING SCORES INCREASED BY 3.3 POINTS
Following a Mark Scott Leadership for Life Award 5-day residential course. N=37.

*An average of 3.3 points for groups of 30+ responses is considered a meaningful change in wellbeing; therefore these results suggest some positive improvement.*

Outward Bound was a wake-up call about my physical health after neglecting it during my GCSEs and then A Levels. During my apprenticeship, I was more conscious about improving it, which has then improved my interpersonal confidence as a whole.

Radek, 16, Outward Bound Apprentice course with Eddie Royce.

The shifts in mindset, self-confidence and enthusiasm for challenges and adventure in nature go beyond the first few months of reflection post-Outward Bound. Memories of their experiences often stay with them well into adulthood, often resulting in positive changes in their lifestyle, values and overall wellbeing.

It feels brilliant, it’s like a relief, you’re coming away from your phone and you’re really just getting peace and quiet and to think to yourself I don’t think many people experience that. When I went to Outward Bound, I found a new version of myself which I would never think was possible because I used to think ‘well this is my way and this is it, but no, there are other ways, there’s other options, there’s compromises.’

Rory, 17, speaking one month after her Summer Adventure in 2020.

I absolutely fell in love with the outdoors and the Lake District – the wilderness and the sense of just being outdoors. I think it must have been how it had an impact on my self-esteem and my confidence. Just that feeling of “I can’t do something” for example kayaking. I can’t do it, I’m too scared to do it, but then actually going and doing it and overcoming it, it gives you the biggest sense of pride.

James, 16, course in 2019 at Blaise.
Supporting young people in finding their own way

An Outward Bound experience for some provides a pause, a chance to reset and refocus attitudes and motivations and positively influence what a young person believes is possible for them – their aspirations. Young people tell us how it has changed their attitudes, and respect for other people who are different to them or how their course experience has influenced career choices. Teachers tell us how Outward Bound has resulted in individuals who were on the verge of exclusion, re-engaging with school.

30 Months After Their
Mark Scott Leadership for Life Award.

82%

young people agreed that they
have an ability to have an
impact on the world, to trust
others and make a difference.

Compared to 42% who reported the
same before their Award.

The feedback one pupil got from Outward Bound and the challenges that he overcame made a real difference for him in school. He is now set on becoming an English teacher. That was not something he talked about before.

Nobody in his family will have gone to university ever – even in his extended family – and so for him to have a clear path of how he was going to go to university, how he would then become an English teacher I think was a direct result of going.

John Robertson, Head Teacher, Calderhead High School, North Lanarkshire.

In school and grades and things, I was never confident in myself at all, I'd go into exams thinking I'm going to fail, I'm going to do rubbish. When I was at school, I was told 'university will never be on the cards for you'. Outward Bound really opened my eyes to what I was actually capable of. I don't think I'd be in university if it wasn't for Outward Bound, watching that milestone for me. Before, if I got a bad grade, that would be me, I wouldn't put more effort into it, I would almost just shut down. Nowadays, I would put more effort into it, it almost spurs me on to do better. Now, I'd do extras to better it.

Eidin Cavanagh, 20, speaking in 2011, five years after her Summer Adventure course.

At Outward Bound you were mixed with other year groups so you heard about their experiences throughout their apprenticeship. For me that was a really good insight that makes you think 'yeah, this is exactly what I want to do, I'll really enjoy this'. I qualified recently as a new engineer, just last week I just finished my HNC, for me now, I just want to buckle down and learn the job well. There's quite a few in-house qualifications which I want to get on with as quickly as possible.

Cairn Wheat, 22, Galsworthy Airport, speaking in 2013, four years after his Outward Bound apprenticeship course.

On my summer adventure I was with 14 other people from all corners of the world, who didn't know me. They didn't have any pre-disposed notions of who I am, and I was able to be myself, with no pressure of school kids, playground bravado of macho men and that was really refreshing.

It gave me that confidence and reassurance of actually you're not just some angry kid, you're an alright guy. That gave me the confidence so that when I went to sixth form I was like 'I don't have to be this person that everyone thinks I am', on who everyone thought I was at school, I can just change.

Yourself Noone, speaking in 2013, six years after his Summer Adventure
"If I could re-live any part of my life, it would be those three weeks at Outward Bound. It changed me as a person, changed my life. I went from not having any confidence to do anything to by the end of it, feeling like I could conquer the world. It was that extreme."

Johanne Penman, St, speaking about her course in 1990 at Eskdale.

LOOKING FORWARD

While this report concludes what has undoubtedly been an unsettling and turbulent period, it is at the same time a celebration and testament to the passion and resilience of the entire Outward Bound community. Underpinning the testimonials, data and insights in this report, is the unwavering commitment of our staff, donors and partners in their support for young people providing them with experiences from which life-long skills, connections, values and mindsets grow.

While 2020 has seen Outward Bound return to pre-covid operations, there always remains more to be done. Increasingly, young people continue to grow up faced with decisions, challenges and pressures that few generations before them have had to face. With big issues such as climate change, divided communities and an increasingly fractured world, I believe that Outward Bound is needed now more urgently than ever.

Outward Bound's new six-year strategy outlines plans and intentions through to 2030. With young people continuing to be at the heart of what we do, the next six years see growth and collaboration as key vehicles for Outward Bound being a leading voice for the value of outdoor learning, and understanding and addressing the needs of young people.

Martin Davidson
Chief Executive
REFERENCES


RESEARCH APPENDIX

UNDERSTANDING YOUNG PEOPLE

A bespoke ten statement survey comprising five positively worded statements relating to feeling welcomed, understood and relationships with others and five statements relating to the five basic needs underpinned by Choice Theory developed by Dr. William Glasser®. Participants indicated how often they reported feeling the below whilst at Outward Bound.

The percentages reflect the young people who reported they experienced feeling the below ‘often’ or ‘always’ whilst on an Outward Bound Summer Adventure 2023. N=48.
PUPIL IMPACT SURVEY

A 10 - statement survey for primary school aged pupils. End of education (five-day) course average scores.

Figure 3. Page 19.

LIFE EFFECTIVENESS QUESTIONNAIRE

The life effectiveness questionnaire is a psychometric questionnaire used to measure the effectiveness of outdoor learning programmes. It measures the extent to which a person’s actions/behaviour/feelings are effective in managing and succeeding at life.

Their end-of-course score is compared with the retrospective pre-course score.

The percentages reporting increased scores on page 30 have been generated from these results.

Figure 4. Page 20.

Figure 5. Page 20.
PERSONAL DEVELOPMENT SCALE

The personal development scale is a questionnaire developed to evaluate a wide range of skills relating to working, communicating and interacting with others.

![Graph showing average scores for pre and post-course assessments.]

EARLY CAREERS COURSES 10 YEAR EVALUATION

Over a ten-year period, October 2012 to September 2022, we evaluated our courses to understand how Apprentices and Graduates benefit from an Outward Bound programme.

![Graph showing early careers courses outcomes.]

OUTWARD BOUND INTERNATIONAL’S OUTCOME SURVEY (OBOS)

The Outward Bound Outcome Survey (OBOS) developed by Outward Bound International and the OBR Research Advisory Committee is a statistically validated and reliable measure used to evidence growth in five broad outcome areas: resilience, self-confidence, environmental responsibility, social competence and compassion for others. The OBOS has been validated and found reliable by researchers from Penn State University.

Outcomes measured across education, early careers and summer courses during 2022/23. Participants indicate their agreement to a series of 21 statements; their end-of-course score is paired with their retrospective pre-course score.

Percentages represent those who reported an improvement in skill areas when pre/post scores were compared.

![Graph showing OBOS outcomes.]

SOCIAL IMPACT REPORT 2024
BELONGING QUESTIONNAIRE - ADAPTED FROM THE 'MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT (MSPSS)'

A scale designed to measure the extent of an individual's perception of support, in this case from friends.

The percentages reporting increased scores on pages 31 and 43 have been generated from these results.

![Graph showing pre and post scores for average scores for secondary school-aged pupils indicating the extent to which they felt supported by and able to rely on their friends. Their end-of-course score is compared with their retrospective pre-course score. Four statements are summed to give a total score out of 28. The scoring scale for the narrative statements is: 1 = very strongly disagree, 7 = very strongly agree.]

VISITING STAFF FEEDBACK

Visiting staff feedback is collected both at the end of the course and in a follow-up survey 2-3 months after the course. Figures 16-20 present the impact data from the follow-up survey and Figure 21 presents end-of-course data.

Survey data collected from visiting staff members 2-3 months after the education course. Percentages indicate how visiting staff responded to each statement.

![Graphs showing changes in scores for visiting staff feedback case study at the end of the course and at 2-3 months follow-up, with bars indicating increases or decreases in responses to statements such as: 'The pupils do this a lot better now', 'The pupils do this a lot less now', 'The pupils are more aware of what they are capable of achieving', 'The pupils are more aware of how they behave, what they believe, and how they feel'.]
Bespoke Education Course Surveys

Figure 20. Young Carers case study. Page 34.

End of young carers course outcomes: frequency of responses by young carers at the end of their 6-day bespoke course.

Figure 23. Mark Scott Leadership for Life Award case study. Page 50.

End of award: average scores for participants’ confidence in asking for help from people from different backgrounds at the start and end of the Award.

Figure 24. Mark Scott Leadership for Life Award: Lasting impact. Page 55.

End of course: 12-months post course.
WELLBEING

The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS™), a validated 14-point evaluation measure which asks for responses to a series of statements in order to generate a low, moderate or high wellbeing score. Each of the 14 statement responses in WEMWBS are scored from 1 to 5, from "none of the time" to "all of the time". A total score is calculated by summing the 14 individual statement scores. The minimum score is 14 and the maximum is 70.

Figure 26. Summer course wellbeing evaluation. Page 54.

A sample of participants who took part in Fearsoreg, Summit and Ridge summer adventure courses in 2022 were asked to complete the WEMWBS questionnaire at the start before attending Outward Bound, and once to two weeks after their course.

Average pre-wellbeing score

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Average post-wellbeing score

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Figure 27. The Mark Scott Leadership for Life wellbeing evaluation pilot study. Page 54.

Average pre-residential wellbeing score

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Average post-residential wellbeing score

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* All valid scores range from 14 to 38, a higher score indicates higher wellbeing, low wellbeing is a score of 14-40, moderate wellbeing is a score of 41-50, high wellbeing is a score of 51-58.
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THE OUTWARD BOUND TRUST
OUR SOCIAL IMPACT
2024
Supporting young people: now and into their futures

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Appendix G – Outdoor Education Adviser Panel

Adventure Activities

**Definition**

For the purposes of OEAP National Guidance, an adventure activity is defined as an activity which is exciting and challenging and which involves significant inherent risk of harm, without which the activity would lose much of its value, or which takes place in a remote or hazardous location.

Adventure activities require a higher level of risk management, and may require specific competence, in order to reduce the risks to an acceptable level. See OEAP National Guidance document 4.3c "Risk Management – an Overview". To ensure this, employers and establishments should consider whether their policies should include special requirements for adventure activities, such as an approval process for leaders and activities.

It requires judgement to decide whether a particular activity falls within the definition of an adventure activity. Many employers and insurance companies therefore provide lists of activities that they define as adventure activities. However, such lists are not exhaustive, so employers should provide leaders and establishments with access to advice, such as from an Outdoor Education Adviser – see OEAP National Guidance document 3.4d "Outdoor Education Adviser".
Rationale

Participating in adventure activities can be one of the highlights of a young person’s learning experiences. While any off-site activity will probably be exciting, adding an extra dimension of personal challenge through participation in adventure activities can make the experience particularly memorable, the learning that takes place often being life-long. Students are active participants, not passive consumers, and a wide range of learning styles can flourish.

Adventure activities can lead to a wide range of learning and development outcomes including:

• awareness of and management of risk to self and others, including risk assessment and decision-making;
• development of social skills;
• experience of personal responsibility;
• improved mental and physical health;
• learning to work collaboratively;
  • awareness of alternatives to traditional sports and games for healthy lifestyles;
• learning to trust and to earn trust;
• learning to give and receive support;
• resilience – developing the mental, emotional and behavioural ability to deal with difficult or challenging situations;
• enhanced emotional intelligence, including a greater awareness of the needs of self and others;
• development of entrepreneurship and enterprise;
• improved environmental appreciation, knowledge, awareness and understanding;
• motivation for learning.
Leading Adventure Activities

If establishment staff are to lead adventure activities, they must be properly assessed as competent to do so. See OEAP National Guidance documents 3.2d “Approval of Leaders” and 6h “FAQ – Adventure Activity Qualifications”.

Using an External Provider

If establishment staff are not to lead the adventure activities, there are several options available:

1. There are many freelance instructors who can arrange activities, and who can often provide all the equipment needed.

2. Some employers (such as local authorities) have their own outdoor provision. While their primary purpose may be serving the needs of a particular community, many will also provide services to outside groups.

3. There are many commercial, charitable and public-sector providers throughout the country. Some offer residential accommodation, and some provide for participants with special needs.

For advice on selecting and using a provider, see OEAP National Guidance documents 4.4g “Selecting External Providers and Facilities” and 4.4h “Using External Providers”.

Licensing

Some specific adventure activities for young people in England, Wales and Scotland are subject to the Adventure Activities Licensing Regulations 2004. Many providers of these activities, including educational establishments providing them for participants from another establishment, are required to hold a licence. See OEAP National Guidance document 3.2f “AALA Licensing” for more detail.

If a provider holds a Learning Outside the Classroom Quality Badge, this is evidence that it meets safety as well as educational quality standards, and that it holds an AALA Licence if it is legally required to do so.