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Key characteristics of optimal developmental experiences in a group of expert Sea Kayak Guides

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ABSTRACT

The characteristics of optimal developmental experiences are examined in a group of international Sea Kayaking Guides. This paper considers how these experiences contributed to the development of decision-making. A mixed approach was utilised that included a survey followed by a series of semi-structured interviews that are thematically analysed. An optimal developmental experience is identified as one with authenticity, diversity, transferability, and reflective value. The Guides developed their judgment and decision-making processes as an aspect of their 'seamanship' via experiences they described as 'epics'. The paper concludes that training for Guides must involve individualised, optimal developmental experiences.

KEYWORDS

Adventure; leadership; guiding; education; decision-making

Introduction

Participation in adventure recreation activities is growing globally (O'Keefe, 2019). Sea kayaking has increased in popularity over the last 15 years and with it, the demand for Sea Kayak Guides (Aadland, Noer, & Vikene, 2016). The Guide's ability, as with any outdoor professional, is dependent on nuanced judgment and decision-making (Priest & Gass, 2005). Historically, a high value is placed on experience to develop these decision-making skills by the Guides and the credential-awarding bodies. Guides qualify through a range of international governing bodies; these bodies assume that contextual experience facilitates the comprehension of critical information (Endsley, 2006) by the Guide to inform the decision-making process. These experiences are reported as being ad-hoc and, consequently, the learning is inconsistent (Collins, Carson, Amos, & Collins, 2017). It seems that neophyte Guides fail to optimise their experiences and, consequently, struggle at assessment (Collins & Collins, 2016). Understanding the nature of these experiences is critical if Trainers are to design effective development plans for Guides and thus facilitate the development of good judgement and decision-making skills.

To date, there has been no investigation into optimal developmental experiences for Sea Kayak Guides. This paper aims to identify the perceived characteristics of optimal developmental experiences in a group of expert Sea Kayak Guides so that these experiences may be incorporated into training and development for Guides. Consequently, the paper seeks to identify the following: What are the unique aspects of the optimal developmental experiences that are specific to the development of Sea Kayak Guides?

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Background literature

Sea kayak guiding in the marine environment is complex and dependent on refined judgment and decision-making skills (Aadland, Vikene, Varley, & Moe, 2017; Brown, 2006; Priest & Gass, 2005). Decision-making for the Sea Kayak Guide takes place in a hyper-dynamic environment under time pressure with frequently sub-optimal information (L. Collins & Collins, 2012). The Guide's key responsibility is to ensure safety while facilitating suitable experiences for their group. Studies of sea kayaking incidents identify failures in the decision-making process as a critical challenge (Aadland et al., 2017; Bailey, 2010; Cunningham, 2014). These errors in judgment are a consequence of poor situational awareness (SA) (Collins, Giblin, Stoszkowski, & Inkster, 2020); therefore, developing situational awareness would appear to be the overarching aim of training experiences in this context.

Situational awareness

Situational awareness is the ability to understand the dynamic situational demands of an environment and make accurate predictions regarding future status (Collins et al., 2020; Endsley, 2006). Situational awareness can be restricted by limited attention and the capacity of working memory. According to Endsley (1999, p. 97), situational awareness comprises 'the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future.' Endsley elaborates on the elements of situational awareness, 1) perception is the ability to recognise something of importance; 2) comprehension denotes the understanding of 'why' this is important; and 3) projection is the ability to predict the future status of those involved (Endsley, 2006). Importantly, situational awareness is synonymous with expertise (Crane, 1992) and, in particular, is synonymous with adaptive expertise, which is a characteristic of outdoor professionals identified by Mees, Sinfield, Collins, and Collins (2020).

Bennis and Thomas (2002) state that during the process of developing adaptive expertise, individuals undergo a series of transformational encounters, described as 'both an opportunity and a test (and) . . . a defining moment that unleashes abilities, forces crucial choices and sharpens focus (p. 54).' It is apparent, then, that these optimal experiences are critical to developing adaptive expertise

Understanding optimal developmental experiences, adaptive expertise and decision-making

Optimal developmental experiences need to exhibit authenticity, diversity and a real risk to be contextually accurate (Eastabrook & Collins, 2020), in addition to providing an opportunity for reflection beyond the immediate context (Ericsson, 2002, 2006; Mees et al., 2020).

Authenticity of experience

Eastabrook and Collins (2020) assert that a feeling of authenticity is created during an experience through the interaction of three elements: Adventure, challenge and context. For the experience to feel adventurous, the individual must be positioned at the centre of the activity and be encouraged to make real, consequential decisions. To be challenging, the experience should be both cognitively and physically demanding and include a degree of learning (Eastabrook & Collins, 2020). Authenticity is created via deliberate practice in a contextually accurate environment (Ericsson, 2002).

Diversity of experience

An adaptive performance is attained through extensive, deliberate and varied practice (Runesson, 2006). Often, the greater the variation in practice, the more robust the development (Tozer, Fazey, & Fazey, 2007). Existing literature suggests that ensuring variation in practice often results in a high

degree of success when encountering novel tasks in a complex environment for the first time (D. Fazey & Fazey, 1989). The aforementioned hyper-dynamic environment inherently creates variation, ensures contextual accuracy and provides diversity in practice (Mees et al., 2020; Sinfield, Allen, & Collins, 2019). All of these elements are fundamental to the development of adaptive expertise, which is a characteristic of outdoor professionals (Mees et al., 2020). Maintaining the optimal degree of variation is a key challenge for the Guide or Coach in an adventurous setting (Collins & Collins, 2016).

Transferability of learning

Experiences create an extensive base of underpinning knowledge that can be applied across contexts or to novel situations (Barnett & Koslowski, 2002). The use of flexible and creative methods of transfer allows interpretation and application between contexts, domains and disciplines (Ericsson, 2002; Trudel, Gilbert, & Rodrigue, 2016). A breadth of previous experience spanning multiple domains is viewed as significant in the development of deep and transferable understanding (Brown, 1989). Cummins (1992) found that comparison of problem structures across multiple domains leads to this deeper base of understanding, resulting in the creation of robust and transferable solutions. Collins, Collins, and Carson (2016) identified that learning must transfer beyond the context in which it is taught or learnt to be effective: If experiences are rich, authentic and diverse, they can be reflected upon effectively, and, as such the learning can be more effectively applied in other situations and domains.

Reflective opportunity

The reflective process signifies a desire and a willingness to learn from experiences (Collins et al., 2020; Hatano & Oura, 2003; Mortlock, 1984). A deep and professional knowledge base is created through meaningful reflection on experience (Atkins & Murphy, 1994; Schön, 1983, 1987) and underpins good judgment (Martin, Cashel, Wagstaff, & Breunig, 2006). Schön (1983) indicates that reflection should take place both 'in' and 'on' action, while Abraham and Collins (2011) propose that decision-making is developed via a contextual reflective framework that includes an 'on action/in context process' by creating or taking explicit opportunities to reflect during an activity. Physical positioning in the environment strengthens the potential learning, links previous experiences and decisions to the current context, and aims to anticipate future status as a result of an integrated decision-making process.

To date, there has been no empirical investigation of the nature of these experiences in Sea Kayak Guides. This paper aims to identify the characteristics of optimal developmental experiences as perceived by a group of expert Sea Kayak Guides, so that these experiences may be better incorporated in the future training of Guides.

Method

A mixed method, abductive approach was employed to elicit both breadth and depth of the data. The approach employed an initial survey of international Sea Kayak Guides, which then informed in-depth semi-structured interviews with a small sample of the same participants in order to examine their optimal developmental experiences. This allowed examination of Sea Kayak Guides' experiences from differing paradigms.

Participants

A self-selecting sample of Sea Kayak Guides attending the International Sea Kayak Educators Symposium 2018 in Wilsons Promontory National Park, Victoria, Australia, were invited to complete an initial survey and agree to a possible interview. To ensure a sufficient level of domain expertise, experience and inherent quality in terms of participants' self-reflective ability (Nash, Martindale,

Collins, & Martindale, 2012), the Sea Kayak Guides self-selected on the following criteria: 1) Be willing to take part in the study 2) hold a senior level of certification as a Sea Kayak Guide within their respective governing body, and 3) have at least five years of experience since senior accreditation.

Procedure

The survey

An initial 17-question survey was designed based on the existing literature to examine the participants' experiences. Questions required a response on a 1–5 Likert scale from strongly disagree = 1 to strongly agree = 5. The survey was piloted on a representative purposive sample (N = 3). A cognitive interview was conducted (Memon, Meer, & Fraser, 2010) to refine the tool. Subsequently, a 19-question survey (eight questions related to demographics, three to authenticity, two to diversity, two to transferability, and four to reflective practice) utilising the Likert scale was finalised. (Table 1)

Analysis

A descriptive analysis was undertaken. The results were scrutinised based on the numerical value of the mean, range and standard deviation. These parametric tests are suitable given the sample size and distribution of the data (Norman, 2010).

Results

Of the 93 Guides approached, 63 respondents participated (5 female, 58 male; Mean age = 45.42 years, SD = 11.99), which represented a 67.74% response rate. Of the 63 respondents, 52 respondents (2 female, 50 male; Mage = 46.67 years, SD = 10.82) satisfied the eligibility criteria and completed the survey, giving a completion rate of 82.54%. The responses were subsequently split into three categories in accordance with the mean, range and SD.

Study part 2

For part 2 of the study, semi-structured interviews were carried out to explore the characteristics of the interviewees' experience, transferability, in- and on-action reflection, diversity in practice, and guiding clients.

The interview guide

An initial interview guide, informed by the survey and the literature, was designed and piloted (Memon et al., 2010). Subsequent amendments were made to five questions, in order to develop better rapport with the participant, improve clarity and ensure meaning (Table 2). The cognitive pilot process was repeated, and the interview guide was finalised. Semi-structured interviews were conducted with each Sea Kayak Guide in an agreed, quiet, and private location at a time convenient to them. The interviews lasted between 20 and 51 minutes (M = 37.79, SD = 11.34). The interviews were recorded using a digital dictaphone and securely stored electronically in mp3 file format prior to transcription by a commercial transcription service approved by the University. (Table 3)

Participants

A randomised sample of expert Sea Kayak Guides meeting the criteria outlined in the Method section above (n = 7) were invited to participate in an interview.

Analysis

Following the guidance provided by Braun and Clarke (2013), data was analysed thematically. Each transcript was read and corrected against the recording by the interviewing author. Once satisfied,

Table 1. Participant survey.

Participant Survey				
Gender	Male	Female	Other	Prefer not to say
				Prompts
Age				years
How long have you been actively Sea Kayaking?				years
On average, how many days do you Sea Kayak per month/year?				month/ year/s
On average, as a percentage, how much of your sea kayaking is personal and how much is professional?				Personal % Professional %
Where do you do most of your Sea Kayaking?				Location
Please state your highest Sea Kayaking Qualification				Qualification
When did you qualify to this level?				Date
Survey Rating Scale (please answer below question)				
Strongly Disagree	Tend to Disagree	Neither Agree nor Disagree	Tend to Agree	Strongly Agree
1	2	3	4	5
Q1. Decisions made in real environments are more meaningful.				
1	2	3	4	5
Q2. Optimal learning experiences are those in which decisions 'in action' have real outcomes.				
1	2	3	4	5
Q3. The most significant learning experiences generate an emotional response.				
1	2	3	4	5
Q4. Effective learning experiences require the opportunity for me to consider the events and my actions.				
1	2	3	4	5
Q5. Effective reflection requires me to focus on the aspects of the experience I could have improved.				
1	2	3	4	5
Q6. Effective reflection requires me to focus on the aspects that were successful.				
1	2	3	4	5
Q7. I created opportunity to consider the events and my actions during the day.				
1	2	3	4	5
Q8. Optimum learning experiences cause me to consider and connect with previous experiences.				
1	2	3	4	5
Q9. Valuable learning experiences for me are adventurous for the clients				
1	2	3	4	5
Q10. My personal experience and ability should extend beyond the conditions I am willing to encounter with clients.				
1	2	3	4	5
Q11. Significant learning experiences can be applied to decision making in future events.				
1	2	3	4	5

each corrected transcript was re-read, and general impressions of the data were written in note form on the transcript. Coding was then applied to the data in each transcript, using the extant literature to guide, while still allowing unique codes to be identified. Data codes were collated into hierarchically ordered themes based on relationships and common features, as seen in Table 4 (below).

Table 2. Survey respondent results.

	Strongly Agree (%)	Tend to Agree (%)	Neither Agree nor Disagree (%)	Tend to Disagree (%)	Strongly Disagree (%)			
Questions	5	4	3	2	1	Mean	SD	Range
Question 1	58%	27%	10%	0%	6%	4.3	1.05	1–5
Question 2	37%	44%	15%	0%	4%	4.1	0.93	1–5
Question 3	33%	50%	15%	2%	0%	4.1	0.74	2–5
Question 4	50%	40%	8%	0%	2%	4.3	0.79	1–5
Question 5	42%	42%	13%	0%	2%	4.2	0.87	1–5
Question 6	23%	48%	29%	0%	0%	3.8	0.89	2–5
Question 7	27%	58%	15%	0%	0%	4.1	0.73	2–5
Question 8	37%	58%	6%	0%	0%	4.2	0.63	2–5
Question 9	17%	23%	58%	0%	2%	3.4	1.05	1–5
Question 10	79%	19%	2%	0%	0%	4.8	0.47	3–5
Question 11	67%	31%	2%	0%	0%	4.7	0.52	3–5

Table 3. Semi-structured interview structure and prompts.

Topic	Prompts
Introductions/Outline of interview	I am interested in the experiences that you have encountered throughout your career that you believe have taught you the most . . . and the experiences that you think have most effectively developed your sea kayak guiding skills. That said . . . .these experiences do not necessarily have had to occurred with clients and they could have been encountered throughout the entirety of your career.
Setting the Scene	Firstly, talk to me about your journey as a sea kayaker? Where and why did you start? How did you become an instructor? What were some memorable early experiences?
Characteristics of Experience	Talk to me about some experiences you have had in a sea kayak that have developed your guiding skills? If you were to identify a few characteristics that are present in every meaningful experience what are they? is there anything that stands out? For you, what are the important characteristics of a powerful learning experience in a sea kayak? If you were able to plan a 'perfect' day for optimum learning how would it look? What would you encounter? What might happen? What makes a really good learning experience for you? Describe to me a single experience or journey in which you have learnt the most?
Transferability	Do you teach across other disciplines? Do you think that the experiences you encounter in one domain/activity/discipline have any effect on your role as a sea kayak guide? Are any of the skills you possess relevant across multiple disciplines?
In and On Action Reflection	In relation to the experiences described 'when' does most of your learning occur? Before, during, after, a combination?
Diversity in Practice	Describe to me the ways in which you vary your practice? and why is this important?
Operating with Clients	I am interested in the learning you gain from being out with your clients? Optimal learning in your development vs optimal learning in the environment you create?
Finally	If you were to give advice to someone wishing to encounter meaningful learning experiences in a sea kayak what would you advise? If you were to give advice to someone wanting to become a guide what would you advise? What types of experiences do you think they should aim to encounter?

Table 4. Thematic analysis of semi-structured interviews.

Overarching Themes	Themes	Sub-themes
Decision Making	**Situational demands** faced by the expert sea kayak Guide	Adopting a conservative approach when guiding due to various factors. Emergence of the expert halo heuristic trap. Decision making and situational awareness is developed broadly across all disciplines. Naturalistic decision making—in action. Trusting Intuition—following your gut feeling. How to be situationally aware, prioritising poignant information and perceptual cues and the ability to implement the plan in action. The most potentially consequential experiences are solo when personal paddling or one on one when guiding. Admittance of operational error due to a negative manifestation of bias. Consequential and authentic decision's made in action are essential to the development of a sea kayak Guide. Classical decision making—Pre and Post. Situational awareness—Perception, Comprehension, Projection. Adaptive capacity.
	The **characteristics of the sea** as an environment for operation	Operating in the sea as a hyper-dynamic environment. Operating on the sea is a time pressured environment. Sub optimal outcomes are common when operating on the sea. 'Good' conditions equating to substantial level of challenge. Decision making in the sea is a complex process. Good sea kayak leadership more about understanding the environment than the craft. The 'surf' environment being optimal for learning. Learning is optimised by utilising the characteristics of the environment, not a passive process.
	The various **roles and responsibilities of the Guide**	The Guide should have a broad range of expertise; technical understanding/performance and high level decision making ability. The Guide should be able to build positive relationships and rapport built on trust that create a supportive and individualised learning environment for each client. The pivotal role of the Guide is to ensure safety through the employment of high level decision-making. The Guide should aim to encounter a suitable level of challenge in order to ensure optimal development of the clients. The Guide should aim to provide opportunities for authentic experience in action and in context in order to aid the development of seamanship. Developing seamanship through situational awareness and reflective practice. The Guide should understand the emotional involvement of early sea kayaking experiences.

(*Continued*)

Table 4. (Continued).

Overarching Themes	Themes	Sub-themes
Depth of Experience	**Personal sea kayaking experience** of the Guide	Memory of encountering sea conditions and challenge above your technical capacity and experience level.
		Early experiences of sea kayaking being enjoyable and based on building confidence rather than ability.
		Intentionally seeking out challenging conditions in order to establish your capacity and ensure development.
		A wealth of experience sea kayaking in a diverse variation of sea states, locations, weather conditions and with a range of people.
		Many sea kayak experiences being performed solo and self-taught.
		Depth of experience in regards to time spent operating in a particular geographical area of your local sea and coast.
		The recognition of being in a 'flow state' while sea kayaking.
		Personal experience enhancing professional ability.
		Safety is the priority when sea kayaking personally.
	Transferable experience of the Guide	Experience paddling—any type of kayak but not on the sea.
		Experience across various disciplines—land based.
		Experience across various disciplines—water based.
		Becoming a sea kayak Guide later in outdoor career—after gathering lots of experience.
		Developing most seamanship skills prior to becoming a sea kayak Guide.
		The transferable skillset from experience—sailing to sea kayak guiding.
		Having a wealth of experience on the sea regardless of craft.
		Depth of experience as a leader or instructor in the outdoor industry as a whole, not just as a sea kayak Guide.
		Depth of experience spent white water kayaking.
		Transferable skills with regards to group management/ decision-making.
Recognising and Exploiting Optimal Experiences	**Reflective practice** and growth mind-set	Intentionally being open to draw learning from all experiences in an active process.
		Understanding the power of learning from unplanned or negative events that occur.
		The importance of being a reflective practitioner 'in' action.
		The importance of being a reflective practitioner 'on' action.
		Shift from unconsciously incompetent to consciously incompetent.
		Learning from the environment every day.
	The importance of belonging to a **community of practice**	Being open to learning from the clients when guiding.
		Developing seamanship through a Mentor.
		The importance of a Mentor figure in development.
		A Mentor figure allowing rapid development due to immediate increase in challenge encountered.
		Mentorship a two way learning process.
		Strong community of practice vital to development.
		Learning is optimised by the individuals involved.
		Harnessing the power of personal learning through other peoples' experiences.

Results

The analysis identified 147 codified units that were then grouped into 60 sub-themes. The sub-themes were subsequently grouped into seven themes and collated into three overarching themes, see Table 4. In line with Braun and Clarke (2013), examples of the themes from the data samples are provided along with a variety of direct quotations to demonstrate the depth and richness found in the data. The anonymity of participants was assured by coding (e.g. SKG1) and the data dis-identified to avoid deductive disclosure.

Thematic tables provide a linear representation of the data and, to reflect the complex interaction of the themes, a thematic map is also provided.

Three overarching themes are identified: 1) Decision-making, 2) depth of experience, and 3) the recognition and exploitation of the optimal developmental experiences (see Figure 1 and Table 4). A series of seven themes were revealed in this process: 1) Situational demands, 2) characteristics of the sea, (3) the roles and responsibilities of the Guide, (4) personal sea kayaking experience, (5) transferable experience, (6) reflective practice and growth mind-set, and (7) the community of practice.

Decision-making

The results reinforce that Guides' decision-making is driven by their situational awareness, and that success relies on comprehending situational demands. SKG1 states that 'sea kayaking is just a whole load of decisions. All you're doing is making decisions all day,' and 'if you nail the decision-making and the situation awareness, then you're going to have a long, happy sea kayaking career.' The Guides' development of decision-making and situational awareness relies on participating in deliberate, real, authentic decisions 'in action' (Schön, 1983). SKG1 explains 'I had to problem-solve for myself. There was nobody to rely on.' Similarly, SKG2 states 'when I look at my river paddling where I always had someone else to pick up the issues, I never really developed as a river paddler.' Realistic decision-making experiences appear to provide a platform on which future efficient 'in-action' decisions are constructed. This is supported by SKG3: 'I'm always checking against past experiences, just because that's the way I learned to practice.' SKG3 is also alluding to recognition-primed decision-making (Klein, 2008) and reflective opportunity.

According to Aadland et al. (2017), the demands of the guiding environment necessitate good situational awareness. It is crucial to understand the initial two levels, descriptive and comprehension of situational awareness (Endsley, 1999) as a precondition to achieving the third stage: Projection of future status (Collins et al., 2020). The importance of this is indicated by SKG1: 'If you can't compare what you are expecting to see [with] what you're actually seeing, then there is no learning.' The Guides' ability to project future status and to be situationally aware of novel situational demands is linked to their adaptive capacity. SKG3 emphasises this: 'It's really easy to be the expert at the bottom of your peninsula … but then you take it to another peninsula it doesn't work so well.' SKG3's geographical reference describes a literal and metaphoric change in context.

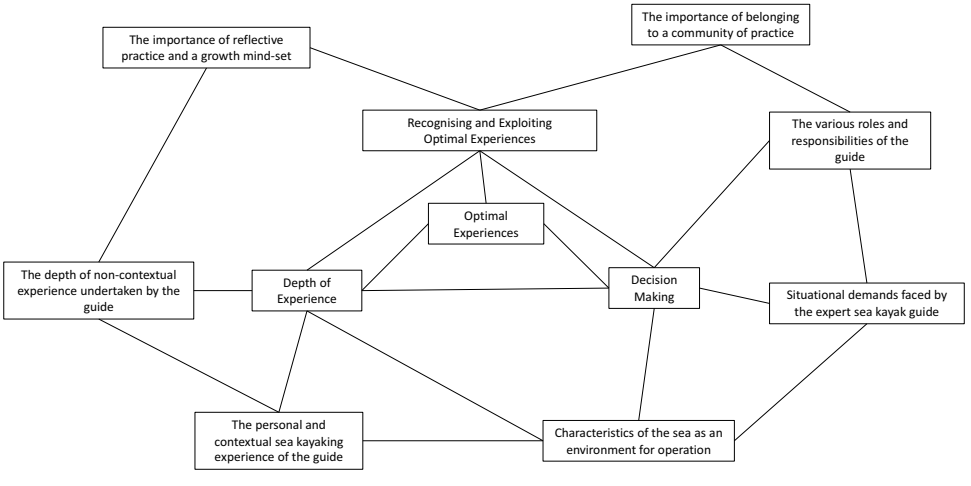

Figure 1. Thematic map.

During early guiding experiences, the Guides described an under-appreciation of the demands of sea kayaking and the marine environment: 'I wasn't a sea kayaker, but I just thought I could transfer that skillset [from white water kayaking] to the flat water of the lake [the sea]. I didn't think there would be much to manage (SKG4).' Aadland et al. (2016) and Bailey (2010) identify underestimating the situational demands of the maritime environment as a major cause of sea kayaking incidents and, in particular, complacency and over-confidence as key factors. SKG5 admits 'I just got my 5-star actually [the highest British guiding award] and I thought, "right that's it, I could do anything now" . . . ironically the first time after I passed the 5-star, I did the worst thing I've ever done.' This appears to be an expert halo heuristic trap (McCammon, 2004). In contrast, when operating 'out of remit,' a conservative approach was advocated by a number of the Guides; for example, SKG4 stated: 'For a few years, I used to paddle in all sorts of conditions without qualification . . .. I would say I was really, really cautious.' This appears to support the notion of Collins et al. (2016) of a meta process in circumventing biases, exemplifying a robust decision-making process.

The characteristics of the Sea

The unique challenge of the sea is described by SKG5 as follows:

> [On] the sea, you've got so many things that can come together. You've got sea state, you've got wind, you've got tides, swell and weather, and there are so many dynamic entities interacting with one another. It can go from being very little to manage to being very heavy-going in a short space of time. It forces you to be constantly thinking what if and thinking ahead of the present situation.

This description of the sea is consistent with the hyper-dynamic environment proposed by Collins and Collins (2016), and also alludes to the level of situational awareness required to guide safely. SKG1 describes the sea as 'a really tough learning environment,' while also appreciating the richness and potential for learning it provides; 'If you've never been in that sort of environment, how can you possibly imagine how powerful it's going to be . . . or how much energy there is in the ocean?' SKG4 states: 'I think that it was a wake-up call. You're not more powerful than the sea, don't make stupid decisions.' These views appear to indicate a comprehension level of SA and a related ontological view of the environment and the Guide's place in it.

According to SKG1, knowledge of the sea is more highly valued than technical mastery of sea kayak handling, 'I didn't necessarily want to learn how to do the perfect bow rudder . . . I wanted to understand that huge environment that was the ocean.' The Guides described this universally as 'seamanship' and related it closely to the effectiveness of the decision-making process.

The roles and responsibilities of the guide

The primary responsibility of a Guide is to ensure safety (Collins & Collins, 2012) and, thus, the Guide must see what others cannot. SKG1 elaborates as follows:

'We have changed the decision en-route due to information that we were picking up, those guys hadn't picked up on it, that's ok because that's the whole point we are there, to stop them getting in similar situations.'

At a fundamental level, the Guides' technical ability should ensure any cognitive effort is put towards decision-making with regard to ensuring their clients safety (Collins & Collins, 2012). SKG6 states that: 'On a personal level, it was comfortable paddling for me, but I was enjoying seeing the students sharpen their focus.'

A shared mental model of learning that includes the seamanship mentioned earlier was clear amongst the Guides, who held a common view that it was impossible to fast-track learning. SKG1 shares this idea: 'I struggle . . . with the seamanship, because I'm not sure how you can fast-track that process.' Other participants suggest that they must 'teach the unteachable . . . navigating the fog, there's a science to it, but really there's an art to it. Why is it that I can do a five-mile crossing and the buoy that I'm aiming to get to is right there' (SKG3). This suggests an intuitive or tacit aspect of seamanship that requires further investigation. SKG1 explains with reference to Guide training: 'What

I try to do is help people notice those in-the-moment processes without necessarily expanding on it there and then.' Such an approach seems akin to a cognitive apprenticeship (Dennen & Burner, 2008), going beyond just the technical to include the situational awareness, decision-making and meta-cognitive processes of the activity (Collins et al., 2017).

Depth of experience

The personal sea kayaking experience of the guide

SKG1 links the level of situational awareness and the broad experience required to support the decision-making process as follows:

> The equation [decision-making] only works if you have a deep understanding of the environment you're operating in. Irrespective of whether that's the sea, the mountains, or anything else, you have to *know* it. You have to have seen it, you have to have been there before, you have to have felt it, you have to understand what's happening. If you observed it, then you understand it, and if you understand it, then you can predict what's going to happen.

The Guides link seamanship and a projective level of situational awareness with the learning gained by making mistakes and having near misses in the form of 'epics'. 'I couldn't have developed without having epics . . . the really big learning moments were probably near misses. You have to have these epics because until you have these epics, you will not learn' (SKG2). Understanding the nature of these 'epics' and the authentic risks they pose appears linked to understanding the optimal developmental experience. Both Tovey (2007) and Csikszentmihalyi (1990) identify exposure to risk and being challenged as beneficial to development.

Transferable experience

Features such as group management, interpersonal skills and decision-making were acknowledged as being transferable. Collins et al. (2016) identified that learning must transfer beyond the context in which it is taught and learnt to be effective. SKG6 states about their earlier experiences: 'I'd never say it's separate . . . particularly in terms of risk management and those kinds of decision-making skills.' and 'I led lots of . . . whitewater trips and canoe trips on slow inland rivers. I built up hundreds and hundreds of days of guiding in those environments.' SKG3 also emphasises the importance of more contextual experiences as a mariner: 'I'd been on the ocean my entire life, so I took all the skills I learned when I was four years old up until 48 and thought, 'I could easily transfer these into sea kayaking.'" SKG6 recalls becoming a Sea Kayak Guide: ' . . . after I'd already been seriously working in the outdoors as a teacher for nearly a decade.' SKG3 reinforces the point that 'if somebody is situationally aware and has good decision-making in one field, they have an advantage in another field.'

Responses from the Guides seem to suggest, therefore, that the skills associated with situational awareness and decision-making are perceived as transferable and possibly meta-skills, though this requires further investigation. Attention must be paid to the most appropriate aspects of the environment in light of the type of decision being made, for example, SKG3 highlighted anticipating a change in wind direction and strength associated with a frontal system as a potential driver for a decision to change a course of action whilst guiding.

Recognising and exploiting optimal developmental experiences

Reflective practice and a growth mindset

The significance of reflection as an aspect of developing adaptation is highlighted by Martin et al. (2006). SKG3 comments: 'I'm always reflecting on what I'm doing while I'm doing it, after I'm doing it, the next night, the next week.' Collins et al. (2016) highlight two aspects of reflection in adventure sports coaches: (1) The process of translating information gathered during the experience into tacit

knowledge, and (2) ensuring its reliability and integration as part of professional practice. The link between reflecting on the richness and depth of experiences and the development of seamanship through the experience of epics is clear. This is alluded to by SKG6: 'I think we have endless ability to go back and reflect and draw meaning from experiences if they're really rich.'

Such links would suggest the experience needs to be rich in critical incidents to enhance the potential of learning. SKG6's comment appears to also be linked to a growth mindset (Dweck, 2012), which is related to a willingness, desire and opportunity to learn that includes the process of 'how' to learn (Ericsson, 2002, 2006), as much as what and why to learn; in other words, a meta process.

The community of practice

A strong community of professional practice was acknowledged as significant in a Guide's development, echoing Sinfield et al.'s findings (2019). Within the adventure context, working within a community of practice (CoP) allows for direct adaptation of performance (Simon, Collins, & Collins, 2017; Sinfield et al., 2019). Significant within the CoP is the role of a Mentor. The Guides consistently viewed having a Mentor as valuable, as this person provides opportunities for increased challenge through optimal developmental experiences, and acts as a critical friend within the reflective process. SKG6 comments as follows:

'I felt I was biting off almost more than I could chew, but because I was there with someone I trusted, it felt perfectly fine … very strong memories of the fact that you could put yourself out in some quite remote and challenging situations as long as you had that safety net of another boat … get out there and get a trusted ally … and go and push the boundaries as hard as you want, but don't do that when you're responsible for making the decision for somebody else.'

Mentoring places the individual at the centre of the coaching process, according to Brymer and Renshaw (2010). In this context, mentoring also provides exposure to increased risk as an element of authenticity, resulting in development.

Discussion

Three pertinent insights evolved from the analysis, linked via a thread of high-level situational awareness; the nature of the 'epic,' the nature of 'seamanship,' and the transferability of situational awareness skills.

Understanding epics

The term 'epic' is commonly associated with Greek mythology and storytelling, specifically denoting a critical experience in which the level of risk is at its peak, while the ability to mitigate the risk is low. Frequently, these experiences occur in conditions that can be managed only with difficulty or not at all and include an emotional response, however fleeting, of helplessness and, in extreme circumstances, intimations of mortality. In this sense, epics can be linked to 'misadventure' (Mortlock, 1984), but appear to be acceptable when experienced with a Mentor as a developmental experience, where a positive outcome can be the result of reaching beyond existing competence. Viewed in this way, the term 'epic' has more connection with the nature and degree of the learning potential for the Guide, than the physical environment or real risk.

Although epics, in terms of the original Greek sense are avoided professionally, the potential gains for the individual Guide to learn and develop from are significant, with the physical risk seemingly mitigated by the presence of a Mentor. This seems to demonstrate that the Guides need to hold two opposing beliefs: A need to experience epics to develop personally, either alone or with a Mentor, *while* striving to avoid epics in a professional context. This cognitive dissonance on the value of exceeding your limit is explained by SKG1: 'It's all about surviving that learning curve.'

Epics are optimal developmental experiences and share characteristics such as authenticity, risk and potential for learning. SKG2 is adamant that: 'Until you have these epics, you will not learn.' A Guide must tread the fine line between avoiding 'Greek' style epics with clients while potentially simultaneously facilitating optimal developmental experiences for themselves or the neophyte Guides they are also mentoring. Navigating this 'edgework' (Lyng, 2005) has clear negative aspects should the balance of risk against benefit be miscalculated, and is clearly susceptible to its own set of heuristic traps and psychological failings, such as the Kruger-Dunning effect (1999). Clearly, an optimal developmental experience will differ and is not without its own, very real pitfalls. In this context, an optimal developmental experience is specific to the needs of individual, is therefore subjective and inherently risky given the nature of sea kayaking, but is also necessarily authentic in nature. However, an optimal developmental experience for the Guide must be clearly focused on professional development.

The nature of 'seamanship' in a sea kayaking context

'Seamanship' is commonly used in a marine environment, and the parallels are easily drawn with sea kayaking, where a deep contextual understanding of the sea develops the tacit knowledge required. The specific meaning of 'seamanship' in the context of sea kayaking is, however, more nuanced and unexplored but is a common theme with the Guides. It seems to relate to a profound and contextual understanding of the sea that is achieved through a long, rich and diverse set of optimal developmental experiences with an explicit link to situational awareness. SKG4 delivers the mantra 'you're not more powerful than the sea,' which emerged as a fundamental credo of the Guides in this study. Seamanship refers to the projection of knowledge and situational awareness in predicting conditions that may be overwhelming for the Guide or their clients. The development of seamanship through experience stands out as one of the major contributing factors aiding judgment and decision-making in a sea kayak guiding context. Understanding the nature of seamanship in the context of sea kayaking requires further research if we are to develop it as an aspect of decision-making of Guides.

Future directions of research

As highlighted above, the role of 'seamanship' in the specific context of the sea kayaker could cast light on the specific contextual knowledge required by aspirant sea kayakers, and understanding this knowledge could lead to improved safety and decision-making. The link between situational awareness projection and seamanship seems clear but requires a deeper level of investigation to fully understand this synergistic relationship. Most importantly, the concept of optimal developmental experiences is now apparent in sea kayaking, and it would be pertinent to extend this area of study across other adventure sports disciplines.

Conclusion

The aim of this study was to identify the characteristics of optimal developmental experiences as perceived by a group of expert Sea Kayak Guides, so that these characteristics may be better incorporated in Guide development. The research identified and supports the existence of four characteristics of optimal developmental experiences that aid the development of a robust and sophisticated judgment and decision-making process: 1) Authenticity, 2) diversity, 3) transferability, and 4) reflective value. The study revealed insights into 'epic' experiences, the nature of seamanship in sea kayak guiding, and the potential for the transferability of situational awareness as a meta skill. These characteristics were sought by Guides through both personal and professional sea kayaking experiences and contribute to the development of adaptive expertise. The decision-making process

evolves through engagement over time with a broad range of these optimal developmental experiences, notably by encountering epics. A robust, personalised reflective process turns these experiences into knowledge in the particular form of 'seamanship'.

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No potential conflict of interest was reported by the author(s).

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