

**Knowledge, Skills, and Practical Experience Required for Higher Education
Outdoor Education Graduates**

David Marsden

**Thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy**

**Victoria University, Australia
Institute for Health & Sport**

January 2023

Abstract

Outdoor education is important for young people as it promotes health and wellbeing, personal development, community connectedness, and environmental awareness. Secondary schools often engage external organisations to deliver outdoor education programs to their students. Primarily, these organisations employ non-teacher-trained staff as outdoor educators who often do not have the knowledge, skills, or practical experience to provide outdoor education student learning outcomes. As a result, students may attend programs that provide guided outdoor recreation experiences rather than education. In Australia, the development of non-school-based outdoor educators tends to focus on technical skills and safety. There is an absence of guidelines regarding the knowledge and skills required of higher education (HE) graduates to deliver outdoor education outcomes. Furthermore, there is a lack of agreement regarding the type, duration, and frequency of practical experience needed to develop outdoor education knowledge and skills.

To address this gap, this study aimed to explore the knowledge, skills, and practical experience required by students in HE who graduate to become outdoor educators. The study focused on outdoor education settings external to the school environment typically provided by the commercial or not-for-profit sector (external outdoor education provider) on a fee-for-service basis to secondary schools. A mixed methods research design was employed. Document analysis was conducted to explore the knowledge, skills, and practical experience required of HE outdoor education graduates. A total of 218 documents were sourced from community, industry, and government. Semi-structured interviews were then conducted to explore the perceptions of outdoor education practitioners regarding the knowledge, skills, and practical experience of HE outdoor education graduates for employment in the outdoor education sector. Six interviews were conducted with outdoor education sector professionals to achieve data saturation based on common perceptions. An online

questionnaire was then distributed throughout Australia to quantify findings from the qualitative phases. A total of 134 responses were gained from practitioners in the outdoor education sector.

Findings reveal that HE graduates require a complex range of knowledge, skills, and experience to fulfil the role of an outdoor educator. Thirteen themes emerged, capturing the knowledge and skills required of HE outdoor education graduates. Two further themes offer insight into the relationship practical experience has with outdoor education knowledge and skills. Quantitative results revealed the average number of practical experience days required by HE outdoor education graduates to develop the knowledge and skills and the duration and types of practical experiences.

Bronfenbrenner's bioecological theory (Bronfenbrenner, 2005) was applied to delve into the findings to explore the purpose of this study in detail. Through the application of bioecological theory, social environment factors contributing to the knowledge, skills, and practical experience of HE outdoor education graduates have been established. Theoretically, a Knowledge and Skills Framework for HE outdoor education graduates has been developed. The relationship between practical experience and the knowledge and skills required of HE outdoor education graduates has been identified. Practically, findings can inform the HE sector in outdoor education courses and the outdoor education sector on knowledge, skills and practical experience required by outdoor education graduates.

Doctor of Philosophy Declaration

“I, David Marsden, declare that the PhD thesis entitled Knowledge, skills and practical experience required for higher education outdoor education graduates is no more than 80,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, and references. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work. I have conducted my research in alignment with the Australian Code for the Responsible Conduct of Research and Victoria University’s Higher Degree by Research Policy and Procedures.”

Signature:

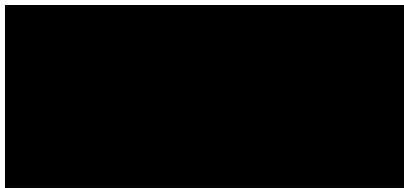


Date

Ethics Declaration

“All research procedures reported in the thesis were approved by the Human Ethics Committee Approval Numbers HRE 13–191, HRE 15–049.”

Signature:



Date:

Dedication

To my mother, Tess.

For your inspiration, guidance, and love.

The Dalai Lama's Candle

“And though I’ve never met that gentle priest from Tibet,
in the candlelight his courage seems to shimmer.
So I hope his small brave flame will guide him home again,
and that one day his long exile will be over.”

—Eric Bogle (2002)

Acknowledgements

I wrote this thesis embraced by Box Ironbark Forest in the traditional home of the Dja Dja Wurrung people in central Victoria. We do not have neighbours where I live, but we are surrounded by life. There is a pair of wedge-tailed eagles nesting in a gum near the front door, they recently arrived, and we spend our time keeping track of their progress setting up home and raising a new family. I want to acknowledge this place that has sustained me and my family, all sentient beings, all life, this country.

The Dja Dja Wurrung people are recognised as the first peoples of the place I call home. The Dja Dja Wurrung have been custodians of the land and waters for many centuries and continue to perform age-old ceremonies of celebration, initiation, and renewal. I acknowledge the Dja Dja Wurrung as the Traditional Owners of the lands and waters of this place. I acknowledge the vital role the local Jaara people have played as custodians of the region. I pay my respect to their Elders, past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples today.

I want to acknowledge the following people:

My amazing supervisors who are as wise as owls. Professor Clare Hanlon, you have taught me more than you will ever know about being a critical, thorough, professional, supportive, and insightful academic leader. Dr. Peter Burridge, your calm and reflective nature kept me focused on embracing the learning experience of undertaking a PhD. I cannot thank you both enough; you are the quintessential educators.

All my students, past and present. Teaching has provided me with a unique opportunity to share the outdoors and deeply explore education, and my students taught me the most. My colleagues in practice, teaching, and academia, over my career you have challenged and supported me. To my outdoor education family from Victoria University, Casey Delmara, Mike Wasley, Matt Cox, Michael Clayton, Euan Pennington, Jenna Harris, and Peter Bovino, thank you for all those nights around the

campfire, in snow caves and on rivers sharing your thoughts. To my newer colleagues at The Outdoor Education Group, you are an exceptionally talented group of people who greatly impact access to outdoor education in Australia; your encouragement has been outstanding.

Australia has a diverse and dedicated cohort of outdoor education practitioners and researchers. I was lucky enough to engage with them as a student in the late 1980s, and I look forward to remaining connected to the community for much longer. Andrew Feher, my outdoor education teacher who, in 1989, opened the door to a lifelong career. Jay Henderson, my first academic mentor who steered a young outdoor leader towards education and research. Chris Townsend and Sue Atkins are truly amazing practitioners; from them, as a young educator I learnt how to connect my love for people, places, environmental ethics, and outdoor education. Michael Hampton, my friend and outdoor life coach. Mike has always kept me grounded and real; I have missed our time out bush over the last five years. I can't wait to get back out there.

I need to thank all the lovely beings who have lived with me over the last eight years. At present, Mini the Cat and Oodle and Woolly the Poodles keep me company while I write and wander around the garden in my breaks. These little folk have listened intently to every new idea, good or bad; they have helped me filter my thoughts; without them I surely would have gone insane.

Finally, and most importantly, I want to thank the following people.

Ros, you have supported me through the highlights and the frustrations; I would not have completed this without your dedication and love; this thesis is as much yours as mine. Ellandi, you have been tirelessly patient with your father, his studies, field work, academic and professional demands. I commenced my academic journey when you were a child and now you are an adult.

My father Brian and sister Nicola, together with Mum, you supported me through some tough times in education and health. Without you, I would not be here today. Thank you with all my heart.

Preface

Welcome to my thesis. I commenced my outdoor education journey in 1994, a new graduate eager to lead groups and spend as much time as possible outdoors. Becoming an outdoor educator was the outcome of a childhood exploring the mountains, rivers, bushlands, and forests near my family home in the Upper Yarra Valley, northeast of Melbourne, in Victoria, Australia. By the time I was a teenager, I had developed a deep love of these natural places and the people with whom I walked, skied, climbed, and paddled. I continue to do this today.

After 28 years as an outdoor educator, I believe empowering people to engage positively with natural places has never been more critical. As we approach another technological epoch, shifting to a virtual age, the gap between people and nature is increasing. As new adopters of technology, young people are at the forefront of this change. Unfortunately, being a new adopter often means being unprotected. As such, young people have become the canaries in a virtual coal mine. Negative wellbeing impacts on young people through increased screen time are well established. At the same time, the benefits of time in nature have never been more apparent.

What concerns me is whether we are preparing our current outdoor educators to meet the rising need for holistic, wellbeing focused, nature-based outdoor education. I have been unashamedly pragmatic during this study, aiming to provide a clear and concise set of outcomes for Australia's HE and outdoor education sectors. As such, it is essential that we, as outdoor educators, overlay these findings with the necessary philosophy and personal values to bring them to life. So please, apply the results of this study to ensure the outdoor educators you work with are prepared to deliver outdoor education programs that meet current critical environmental, wellbeing, and social needs. I believe we can do this by focusing on outdoor education that fosters genuine care through community.

Publications

Marsden, D., Hanlon, C., & Burridge, P. (2012). The knowledge skill and practical experience required of outdoor education leaders in Victoria. In M. Burke & B. Stewart (Eds.), *Sport, Culture and Society* (pp. 77–94). Maribyrnong Press.

Presentations

Marsden, D. (2015, May). *The role of practical field experience in the development of higher education outdoor education graduates knowledge and skill in Victoria, Australia (research)* [Conference presentation]. Education Outdoors Conference, Camp Marysville, Marysville, Victoria, Australia.

Marsden, D. (2016, May). *The National Outdoor Education leadership survey* [Conference presentation]. Education Outdoors Conference, Federation University, Ballarat, Victoria, Australia.

Table of Contents

Abstract	i
Doctor of Philosophy Declaration	iii
Ethics Declaration	iii
Dedication	iv
Acknowledgements	v
Preface	vii
Publications	viii
Presentations	viii
Table of Contents	ix
List of Tables	xix
List of Figures	xxiii
Definitions of Key Terms	xxiv
List of Abbreviations	xxv
Chapter 1. Introduction	1
Background.....	1
Problem Statement.....	3
Research Purpose, Questions and Method	5
Significance of the Study and Contribution to the Body of Knowledge	7
Structure of Thesis	8
Publications from this Study	9
Chapter 2. Literature Review: Knowledge, Skills, and Practical Experience of Higher Education Outdoor Education Graduates	10
Australian Higher Education Outdoor Education Graduates	11
Knowledge and Skills Required for Higher Education Outdoor Education Graduates	13
The Hard, Meta, and Soft Skills of Outdoor Education.....	19
Personal Traits and HE Outdoor Education Graduates	23

Practical Experience to Develop the Knowledge and Skills of HE Outdoor Education Graduates	25
The Need for a Coordinated Approach Towards Practical Experience for Higher Education Outdoor Education Graduates	27
Disparities, Contradictions and Omissions for the Higher Education Sector	29
Chapter Review.....	31
Chapter 3. Literature Review: Theoretical Framework.....	32
Bioecological Theory of Human Development.....	35
Microsystem	36
Mesosystem	37
Exosystem.....	38
Macrosystem	39
Process, Person, Context and Time	39
Bioecological Theory as it Applies to Higher Education Outdoor Education Students	40
Bioecological Theory and the Current Study.....	44
Bioecological Theory Strengths and Weaknesses.....	44
Chapter Review.....	46
Chapter 4. Methodology	47
Mixed Methods.....	48
Strengths and Challenges	49
Mixed Methods Design	51
Geographical Design	54
Ethical Considerations in Mixed Methods Research	55
Ethical Approval	57
Qualitative Research Phases	57
Phase 1: Document Review	58
Document Collection.....	60
Document Analysis	62
Qualitative Analysis Software	63

The Coding Process	63
Phase 2: Semistructured Interviews	65
Interview Guide.....	65
Interview Sample	66
Group 1 Selection Criteria.....	67
Group 2 Selection Criteria.....	67
Recruitment of Participants.....	67
Data Collection	68
Analysis	68
Qualitative Data Comparison and Merging	69
Comparison and Merging Process.....	69
Quantitative Research Phase.....	70
Phase 3: Online Questionnaire	71
Sample	71
Participant Recruitment	71
Data Collection	72
Measures.....	72
Landing Page.....	74
Online Consent.	74
Questionnaire Definitions.	74
Questionnaire Section 1: You and Your Organisation.	74
Questionnaire Section 2: Outdoor Educators Knowledge, Skills, and Traits.	75
Questionnaire Section 3: Outdoor Educators' Education and Experience.	76
Questionnaire Section 4: Participants' Learning Outcomes.	77
Survey Validity and Piloting	78
Analysis	79
Chapter Review.....	82
Chapter 5. Qualitative Findings	83

Phase 1: Document Review	84
Document Review Themes.....	84
Leader Knowledge.....	85
Outdoor Activity-Specific Instruction and Leadership.....	85
Safety and Risk Management.	87
Environmental Knowledge.....	89
Location-Based Knowledge of the Leader.	89
Outdoor Recreation Program Design.	90
Pedagogy.....	91
Managing Community and Public Relationships.....	91
Responsibilities of Leaders.	92
Qualifications, Regulations and Standards	93
Qualifications.	93
Regulations, Acts and Licences.	96
Standards and Guidelines.....	96
Outdoor Education Student Learning Outcomes.....	97
Human/Nature Relationships Outcomes.	98
Community and Group Development Outcomes.	99
Environmental Science Outcomes.	99
Sustainability Outcomes.....	100
Personal Development Outcomes.....	100
Wellbeing Outcomes.....	101
Natural Resource Management Outcomes.....	102
Place-Based Knowledge Outcomes.....	102
Practical Experience	102
Outdoor Activity Practical Experience Management Framework.	102
General Need for Experience.....	105
Need for Activity-Based Experience.....	105
Phase 2: Semi-structured Interviews	106

Semi-structured Interviews: Themes	108
Practical Experience	109
Outdoor Educator Knowledge and Skills Development.	109
Management of Practical Experience.....	111
Leaders' Personal Development Through Experience.....	112
Variations in Leaders Due to Experience.	113
Type of Practical Experience.....	113
Limitations of Practical Experience.....	115
Leader Knowledge.....	116
Pedagogy.....	116
Program Design.	118
Leadership.	118
Outdoor Living, Activity and Travel Skills (OLATS).....	119
Safety and Risk Management.	119
Outdoor Educators' Personal Traits	120
Influences on Outdoor Education.....	123
Schools and Client.	123
Education System.	126
Outdoor Industry.	127
Society.....	128
Outdoor Education Student Learning Outcomes.....	129
Personal Development.....	130
Community and Group Development.	130
School Curriculum Links.....	132
Wellbeing.....	132
Environmental Education.	133
Outdoor Activities.....	133
Qualifications, Standards, Guidelines and Legislation.....	133
Qualifications.	134

Standards, Guidelines and Legislation	135
Merging of Qualitative Findings	136
Findings Regarding the Knowledge and Skills Required of Higher Education Outdoor Education Graduates	137
Findings on the Nature of the Relationship between Practical Experience and Higher Education Outdoor Education Graduate Knowledge and Skills	143
Practical Experience Learning Outcomes	144
Practical Experience Andragogy	145
Practical Experience Embedded Into the Questionnaire	148
Chapter Review.....	148
Chapter 6. Quantitative Results	151
Preparation of Data	151
Data Entry (Step 1).....	151
Data Inspection (Step 2).....	151
Screening and Cleaning	152
Locating and Amending Errors in the Data	152
Missing Data.....	152
Data Exploration and Description (Step 3).....	152
Conducting Statistical Test (Step 4).....	152
Sample.....	153
Results of Analyses: Demographics	153
Participant Gender, Age, Education, and Employment	154
Organisation of Respondents	156
Outdoor Education Program and Client Type.....	156
Participant Organisational Locations.....	157
Organisation Size	158
Results of Analyses: Higher Education Outdoor Education Graduates	160
Graduate Knowledge and Skill	160
Elements of Outdoor Education Knowledge and Skill	161
Outdoor Educator Personal Traits.....	165

Outdoor Education Student Learning Outcomes.....	168
Practical Experience for Graduates	170
Perceived Importance of Practical Experience for Graduates	171
Type of Practical Experience	173
Duration, Frequency, and Amount of Practical Experience.	175
Adventure Activities and Practical Experience	177
Elements of Knowledge, Skills, and Practical Experience	179
Modes of Educational Delivery for Undergraduates	182
Additional Write-in Comments on Knowledge, Skills, and Practical Experience of Outdoor Educators	185
Results of Analyses: Between-Group Demographic Comparison	186
Demographic Independent Variables: Organisational Seniority, Education, and Work Type.....	187
Graduate Knowledge and Skill: Between-Group Demographic Comparison..	188
Elements of Outdoor Education Knowledge and Skill	189
Organisational Seniority.	189
Education.....	189
Work Type.	190
Outdoor Educator Personal Traits.....	197
Organisational Seniority.	197
Education.....	197
Work Type.	198
Outdoor Education Student Learning Outcomes.....	199
Organisational Seniority.	199
Education.....	202
Work Type.	204
Practical Experience for HE Outdoor Education Graduates: Between-Group Demographic Comparison	206
Perceived Importance of Practical Experience for Higher Education Outdoor Education Graduates	206

Organisational Seniority.....	206
Education.....	206
Work Type.....	206
Type of Practical Experience.....	208
Organisational Seniority.....	208
Education.....	208
Work Type.....	208
Duration, Frequency, and Amount of Practical Experience.....	210
Organisational Seniority.....	210
Education.....	210
Work Type.....	210
Adventure Activities and Practical Experience.....	213
Organisational Seniority.....	213
Education.....	213
Work Type.....	213
Elements of Knowledge, Skill, and Practical Experience.....	217
Organisational Seniority.....	217
Education.....	217
Work Type.....	217
Modes of Educational Delivery for Undergraduates: Between-Group Demographic Comparison.....	221
Organisational Seniority.....	221
Education.....	221
Work Type.....	221
Chapter Review.....	225
Chapter 7. Discussion.....	228
What Knowledge and Skills are Required by Australian Higher Education Outdoor Education Graduates?.....	231
Societal Functions of HE Outdoor Education Graduates.....	232
A Knowledge and Skills Framework for HE Outdoor Education Graduates....	240

What is the Nature of the Relationship Between Practical Experience and Australian Higher Education Outdoor Education Graduate Knowledge and Skills?	245
How Can These Findings Inform the Higher Education Sector in Outdoor Education Courses and the Outdoor Education Sector on Knowledge, Skills, and Practical Experience?	253
How Can These Findings Inform the Higher Education Sector in Outdoor Education Courses?	255
How Can These Findings Inform the Outdoor Education Sector on Knowledge, Skills, and Practical Experience?.....	261
Chapter Review.....	266
Chapter 8. Conclusion.....	269
Contribution to Theoretical Knowledge	273
Contribution to Practical Knowledge.....	276
Higher Education Sector.....	276
Outdoor Education Sector	279
Limitations of the Study and Recommendations for Future Research	281
References	288
Appendices	316
Appendix A. Documents Reviewed in Qualitative Documentary Analysis	317
Appendix B. Interview Guide, Senior Outdoor Industry Member	338
Appendix C. Interview Guide, Outdoor Industry Managers	340
Appendix D. Email to Peak Body Contacts and Outdoor Organisations.....	342
Appendix E. Participant Cover Letter, Senior Outdoor Educators	343
Appendix F. Participant Cover Letter, Manager Outdoor Education.....	344
Appendix G. Participant Cover Letter, Senior Outdoor Educators.....	345
Appendix H. Group 2 Cover Letter, Manager Outdoor Education ACA.....	346
Appendix I. Information to Participants Involved in Research, Semistructured Interviews.....	347
Appendix J. Consent Form for Participants Involved in Research.....	349
Appendix K. Peak Bodies and Online Outdoor Education Networks and Outdoor Forums Contacted Regarding Online Questionnaire	350

Appendix L. State Networks Cover Letter the Australian National Outdoor Education Leadership Survey	352
Appendix M. Media Release the Australian National Outdoor Education Leadership Survey.....	353
Appendix N. Banner Advertisement the Australian National Outdoor Education Leadership Survey	354
Appendix O. Questionnaire, The National Outdoor Education Leadership Survey	355
Appendix P. Summary National Outdoor Education Leadership Survey Questionnaire.....	375
Appendix Q. Questionnaire Definition of Terms.....	386
Appendix R. Questionnaire Descriptive Values Scale Rating	388
Appendix S. Questionnaire Pilots Questions	389
Appendix T. Pilot Questionnaire Reviewer Feedback	391
Appendix U. Phase 1 Document Review Code Tree, Selective, Axial, Open.....	398
Appendix V. Adventure Activities Identified in Document Review for Outdoor Leaders and Outdoor Education Teachers	403
Appendix W. Responsibilities of a Bushwalking Leader.....	406
Appendix X. NOLRS Registration Checklists for Bushwalking, Controlled, Intermediate, and Uncontrolled Environments	408
Appendix Y. Phase 2 Semistructured Interviews Code Tree, Selective, Axial, Open	414
Appendix Z. Question Twenty Five, Participant Responses.....	419
Appendix AA. Elements of Knowledge and Skill for HE Outdoor Education Graduates	425

List of Tables

Table 1 <i>The Knowledge and Skills of Outdoor Leadership</i>	13
Table 2 <i>Alignment of Outdoor Education Body of Knowledge and Outdoor Leadership Knowledge and Skills</i>	16
Table 3 <i>Threshold Concepts for HE Outdoor Education Programs</i>	19
Table 4 <i>Comparison of Higher Education Outdoor Education Undergraduate Practical Experience</i>	28
Table 5 <i>Document Selection Guide</i>	61
Table 6 <i>Definitions for the 7-Point Bipolar Likert Scale</i>	76
Table 7 <i>Quantitative Analysis Protocol</i>	80
Table 8 <i>Main Themes Identified in the Document Review</i>	85
Table 9 <i>Subthemes Relating to Leader Knowledge</i>	85
Table 10 <i>Subthemes Relating to Qualifications, Regulations and Standards</i>	93
Table 11 <i>Subthemes Relating to Outdoor Education Student Learning Outcomes</i>	98
Table 12 <i>Subthemes Relating to Practical Experience</i>	102
Table 13 <i>Interviewee Characteristics</i>	107
Table 14 <i>Themes of Semi-structured Interviews</i>	109
Table 15 <i>Subthemes Relating to Practical Experience</i>	109
Table 16 <i>Subthemes Relating to Leader Knowledge</i>	116
Table 17 <i>Subtheme Relating to Outdoor Educators' Traits</i>	121
Table 18 <i>Subthemes Relating to Influences on Outdoor Education</i>	123
Table 19 <i>Subthemes Relating to Outdoor Education Outcomes</i>	129
Table 20 <i>Subthemes Relating to Qualifications, Standards, Guidelines and Legislation</i>	134
Table 21 <i>Elements, Knowledge, and Skills Required of Higher Education Outdoor Education Graduates</i>	139
Table 22 <i>Practical Experience Learning Outcomes</i>	145
Table 23 <i>Practical Experience Andragogy</i>	146

Table 24 <i>Demographic Results</i>	155
Table 25 <i>Organisation's Outdoor Education Program and Client Type</i>	157
Table 26 <i>Location of Outdoor Education Organisations by State</i>	158
Table 27 <i>Number of Employees</i>	159
Table 28 <i>Level of Importance of Outdoor Education Knowledge and Skills for Graduates</i>	162
Table 29 <i>Additional Knowledge and Skills Identified by Outdoor Practitioners</i>	163
Table 30 <i>Outdoor Practitioners Ranking of Knowledge and Skills for Graduates</i>	165
Table 31 <i>Personal Traits Required by Graduates</i>	166
Table 32 <i>Personal Traits Required by Graduates by Category</i>	167
Table 33 <i>Level of Importance of Outdoor Education Learning Outcomes</i>	169
Table 34 <i>Respondents' Ranking of Outdoor Education Learning Outcomes</i>	170
Table 35 <i>Level of Importance of Practical Experience, Logbooks, and Work Placements for Graduates</i>	172
Table 36 <i>Type of Field-Based Practical Experience Required by Outdoor Educators</i>	173
Table 37 <i>Other Types of Field-Based Experiences Identified</i>	174
Table 38 <i>Practical Field Experiences Required by an Outdoor Education Graduate According to Trip Duration</i>	176
Table 39 <i>Ranking of Relative Importance of Field-Based Trip Lengths for Graduates</i>	176
Table 40 <i>Days of Practical Experience Leading Required for Adventure Activities</i>	178
Table 41 <i>Other Adventure Activities Nominated by Respondents</i>	179
Table 42 <i>Number of Days Leading Required for Graduates to Attain the Identified Knowledge and Skills</i>	181
Table 43 <i>Preferred Undergraduate Educational Delivery Modes for Each Knowledge and Skill Element</i>	184
Table 44 <i>Word Frequency</i>	186
Table 45 <i>Demographic Variables and Comparison Groups</i>	187

Table 46 <i>Organisational Seniority Comparison of Outdoor Education Knowledge and Skill Elements for Graduates</i>	191
Table 47 <i>Organisational Seniority Comparison of Rankings of Outdoor Education Knowledge and Skill Elements for Higher Education Graduates</i>	192
Table 48 <i>Education Level Comparison of Outdoor Education Knowledge and Skill Elements for HE Graduates</i>	193
Table 49 <i>Education Level Comparison of Rankings of Outdoor Education Knowledge and Skill Elements for Higher Education Graduates</i>	194
Table 50 <i>Work Type Comparison of the Importance of Outdoor Education Knowledge and Skill Elements for Higher Education Graduates</i>	195
Table 51 <i>Work Type Comparison of Rankings of Outdoor Education Knowledge and Skill Elements for Graduates</i>	196
Table 52 <i>Organisational Seniority Comparison of Personal Traits Required by Graduates</i>	197
Table 53 <i>Educational Level Group Comparison of Personal Traits Required by Higher Education Graduates</i>	198
Table 54 <i>Work Type Group Comparison of Personal Traits Required by Graduates</i>	199
Table 55 <i>Organisational Seniority Comparison of Outdoor Education Student Learning Outcomes</i>	201
Table 56 <i>Organisational Seniority Comparison of Rankings of Student Learning Outcomes</i>	201
Table 57 <i>Education Level Comparison of Student Learning Outcomes</i>	203
Table 58 <i>Education Level Comparison of Rankings of Student Learning Outcomes</i>	203
Table 59 <i>Work Type Comparison of Student Learning Outcomes</i>	205
Table 60 <i>Work Type Comparison of Rankings of Student Learning Outcomes</i>	205
Table 61 <i>Organisational Seniority Comparison of the Importance of Practical Experience, Logbooks of Practical Experience, and Work Placements for Higher Education Graduates</i>	207
Table 62 <i>Education Level Comparison of the Importance of Practical Experience, Logbooks of Practical Experience, and Work Placements for Higher Education Graduates</i>	207

Table 63 <i>Work Type Comparison of the Importance of Practical Experience, Logbooks of Practical Experience, and Work Placements for Higher Education Graduates</i>	207
Table 64 <i>Demographic Group Comparison of Recommendations of the Types of Field-Based Experience Required of Higher Education Outdoor Education Graduates</i>	209
Table 65 <i>Demographic Group Comparison of Recommendations of the Number of Practical Field Experiences a Higher Education Outdoor Education Graduate Should Have by Trip Length</i>	211
Table 66 <i>Demographic Group Comparison of Ranking Relative Importance of Field-Based Trip Lengths Higher Education Graduates Have Prior to Employment as a Group Leader</i>	212
Table 67 <i>Organisational Seniority Comparison of Practical Experience Days Necessary for Higher Education Graduates to Lead Selected Adventure Activities</i>	214
Table 68 <i>Educational Level Comparison of Practical Experience Days Necessary for Higher Education Graduates to Lead Selected Adventure Activities</i>	215
Table 69 <i>Work type Comparison of Practical Experience Days Necessary for Higher Education Graduates to Lead Selected Adventure Activities</i>	216
Table 70 <i>Organisational Seniority Comparison of Practical Experience Days Necessary to Attain the Knowledge and Skill of an Outdoor Education Group Leader</i>	219
Table 71 <i>Educational Comparison of Practical Experience Days Necessary to Attain the Knowledge and Skill of an Outdoor Education Group Leader</i>	219
Table 72 <i>Work Type Comparison of Practical Experience Days Necessary to Attain the Knowledge and Skill of an Outdoor Education Group Leader</i>	220
Table 73 <i>Organisational Seniority Education Level Comparison of Participants' Preferences for Undergraduate Educational Delivery Modes for Attaining the Knowledge and Skills</i>	222
Table 74 <i>Education Comparison of Participants' Preferences for Undergraduate Educational Delivery Modes for Attaining the Knowledge and Skills</i>	223
Table 75 <i>Work Type Education Level Comparison of Participants' Preferences for Undergraduate Educational Delivery Modes for Attaining the Knowledge and Skills</i> .	224
Table 76 <i>Research Questions, Findings and Contribution to Knowledge</i>	271

List of Figures

<i>Figure 1 Relationship Between the Hard, Meta, and Soft Knowledge and Skills of Outdoor Leadership</i>	20
<i>Figure 2 The Hard, Meta and Soft Knowledge and Skills of Outdoor Educators Referenced to the AQF</i>	22
<i>Figure 3 Connection between an Accident and Higher Education Student Requirements</i>	34
<i>Figure 4 Ecology of Human Development—Adult Learner</i>	36
<i>Figure 5 Bioecological Theory as it May Apply to Higher Education Outdoor Education Students</i>	42
<i>Figure 6 Exploratory Sequential Design</i>	53
<i>Figure 7 Questionnaire Instrument Organisation</i>	73
<i>Figure 8 NOLRS Registration Checklist, Canoeing Guide Flat Water</i>	95
<i>Figure 9 NOLRS Registration Logbook Requirements Summary</i>	104
<i>Figure 10 Elements, Knowledge, and Skills Structure</i>	138
<i>Figure 11 Components of Practical Experience</i>	144
<i>Figure 12 Elements of Knowledge and Skill Required of Higher Education Outdoor Education Graduates</i>	149
<i>Figure 13 Preferred Mode of Educational Delivery</i>	182
<i>Figure 14 The Developmental Ecology of HE Outdoor Education Graduates</i>	229
<i>Figure 15 Societal Function Domains of Higher Education Outdoor Education Graduates</i>	234
<i>Figure 16 Knowledge and Skills Framework</i>	241
<i>Figure 17 Higher Education Outdoor Education Practical Experience</i>	247

Definitions of Key Terms

Australian Adventure Activity Standard. The Australian Adventure Activity Standard “provides a voluntary good-practice framework for safe and responsible planning and delivery of led outdoor adventure activities with dependent participants” (Outdoor Council of Australia, n.d.-a). The Australian Adventure Activity Standard superseded state-based adventure activity standards in 2019.

Australian Qualification Framework. The Australian Qualification Framework is the national policy for regulated qualifications that “incorporates the qualifications from each education and training sector into a single comprehensive national qualifications framework” (Department of Education Skills and Employment, n.d.-a, p. 9).

Higher education outdoor education graduate. A person who has completed a bachelor’s degree in preparation to lead outdoor education programs. In Australia, this comprises the equivalence of 3 years full-time study (Federation University, n.d.-b; LaTrobe University, n.d.-a; Victoria University, n.d.-b).

Outdoor education. “Outdoor education is a study subject in schooling [in Australia] that focuses on learning about self, others, and the environment” (Outdoor Education Australia, n.d.-d para. 1).

Practical experience. Practical experience for HE outdoor education graduates, may be defined as experiences prescribed to develop their outdoor education knowledge and skills, including supervised work placement (internships or practicum), field work, skills courses, embedded technical training courses, and embedded practical qualifications (Barnes, 2004; Garvey & Gass, 1999; Humberstone & Mannerings, 2004; Mann, 2003; P. Martin, 2008b; Poff et al., 2001; Sugerman, 1999).

List of Abbreviations

AAAS	Australian Adventure Activity Standard
AAS	Adventure Activity Standards
ACA	Australian Camping Association
HE	Higher education
NOLRS	National Outdoor Leadership Registration Scheme
OCA	Outdoor Council of Australia
OEA	Outdoor Education Australia
OLATS	Outdoor living and travel skills
PPCT	Process, person, context, and time
VCAA	Victorian Curriculum Assessment Authority
VCAL	Victorian Certificate of Applied Learning
VCE	Victorian Certificate of Education
VE	Vocational education
VET	Vocational education and training
VOEA	Victorian Outdoor Education Association
SIS	Sport, Fitness and Recreation Training Package

Chapter 1. Introduction

The introductory chapter addresses four matters: the background to this Australian-based study, the problem statement that motivated this study and the associated purpose and questions designed to explore that problem, the significance of the study and its contribution to the body of knowledge, and the structure of this document.

Background

Similar to many other countries, outdoor education is an important aspect of Australian schooling, through which students explore their relationships to self, others, and the natural world (Barber, 2021; Lisle, 2018; Outdoor Education Australia, n.d.-b; Purc-Stephenson et al., 2019). Outdoor education benefits students' health, wellbeing, community connectedness, intrapersonal development, and human/nature relationships (Andre et al., 2017; Mutz & Müller, 2016; Scrutton, 2014). Australian outdoor education comprises formal curriculum studies, whole year level programs, and extracurricular activities (Marsden et al., 2012). Australian schools increasingly engage external outdoor education providers (who commonly employ non-teacher-trained outdoor educators) to deliver non-school-based education programs (Australian Industry and Skills Committee, n.d.; Marsden Jacob Associates, n.d.-b).

The Australian outdoor industry, within which outdoor education provision is a sector, makes a significant contribution to the national economy and supports substantial employment (Marsden Jacob Associates, n.d.-a). Polley (2021a) combined Australian camp participation data and estimated that, in 2016, there were over 4.7 million participant days of outdoor education delivered. The economic impact of this participation equates to an estimated 2,797 full-time people directly employed in the delivery of programs, and a total expenditure of AU\$332.1 million (Polley, 2021a). Based on the substantial contribution outdoor education makes to the Australian

community and economy, outdoor educators with appropriate knowledge, skills, and experience are vital. Emphasising the importance of having a skilled workforce who can meet the needs of the outdoor industry they identified, “the sector’s current and future growth potential is substantial and therefore it has never been more important to ensure it is supported with a skilled workforce capable of continuing to achieve growth and wider economic contributions” (p. 4).

The successful delivery of outdoor education programs relies upon outdoor educators’ knowledge, skills, and practical experience (Lausselet & Zosso, 2022; Martin, 2008b; Remington & Legge, 2017). Through formal education, Australian outdoor educators can gain knowledge, skills, and experience along two pathways: vocational education (VE), and higher education (HE). Both pathways are part of the Australian Qualifications Framework (AQF), with VE covering levels 1–5 (Certificate I to advanced diploma/associate degree) and HE covering levels 6–10 (bachelor’s degree to doctorate) (Department of Education Skills and Employment, n.d.-a). The AQF is linear in knowledge and skills progression, with VE focusing on practical skills related to specific contexts and HE having a “focus on broad and coherent theoretical knowledge, critical thinking abilities, and well developed judgement in professional/highly skilled contexts” (Thomas et al., 2019, p. 56).

Outdoor educators require knowledge ranging from technical skills, such as first aid at AQF Level 1 through to professional education knowledge at AQF Level 7 (Marsden et al., 2012). For this reason, when considering outdoor educators’ preparedness, the VE/HE AQF range is important to understand. While the AQF structure means VE graduates are likely to attain the technical skills required for specific adventure activities, they may lack the theoretical knowledge to teach outdoor education (Department of Education Skills and Employment, n.d.-b). On the other hand, while HE graduates are likely to develop the theoretical knowledge to teach outdoor education, they may lack the workplace technical skills required to guide all the outdoor adventure activities offered. Given there are more Australian outdoor education

HE courses ($n = 20$) (Polley, 2021a) than VE courses ($n = 13$) (Skills IQ, 2019), HE graduates can be recognised as a key source of employees for the outdoor industry.

HE outdoor education courses deliver curricula with the aim of providing graduates with the knowledge and skills required to deliver outdoor education programs (e.g. LaTrobe University (n.d.-a) University of South Australia (n.d.) Victoria University (n.d.-a)). Outdoor education programs are provided to school age children and young adults with a focus on learning social, personal, and environmental understanding. The focus on learning in the outdoors defines the knowledge and skills required of outdoor educators. HE outdoor education courses provide graduates with technical and leadership knowledge and skills based in the fields of outdoor recreation and adventure leadership (Buell, 1981; Kosseff, 2016; B. Martin et al., 2017; Priest, 1986a; Priest & Gass, 2018; Swiderski, 1981; Wagstaff et al., 2006). However, HE outdoor education graduates also require knowledge and skills in general education and the more specific discipline of outdoor education, including pedagogies of outdoor education (Thomas, 2015), human/nature relationships (P. Martin, 2004), and social and environmental justice (Thomas et al., 2019).

A literature review was conducted to understand the existing research and debates relevant to the area of study (Chapter 2. Literature Review). In general, findings from the literature review revealed three key problems related to the knowledge and skills required of HE outdoor education graduates and the role practical experience plays in developing knowledge and skills for HE outdoor education graduates.

Problem Statement

The three problems identified were: an absence of literature regarding the knowledge and skills required of HE outdoor education graduates, an absence of literature regarding the relationship between practical experience and the development of HE outdoor education graduate knowledge and skills, and in Australia, a lack of

guidelines to inform the HE sector on outdoor education courses, and the outdoor education sector on the suitability of HE outdoor education graduates for employment.

Ensuring HE outdoor education graduates are suitably prepared to keep young people safe while delivering educational outcomes are central responsibilities in determining the required knowledge and skills (Kosseff, 2016). Over the past 40 years, outdoor activity research has produced extensive lists of attributes, knowledge, skills, and qualities for outdoor leaders (Buell, 1981; Kosseff, 2016; B. Martin et al., 2017; Priest, 1986a; Priest & Gass, 2018; Swiderski, 1981; Wagstaff et al., 2006). However, this research does not provide a framework of the knowledge and skills required for a HE graduate to teach outdoor education in a non-school-based environment, and findings within this research are based on studies undertaken in the eighties and nineties. Recent Australian research focused on HE outdoor education graduate outcomes has produced a series of threshold learning statements for universities to adopt (Thomas et al., 2019). However, these threshold learning statements are broad and lack detailed knowledge and skills requirements for outdoor educators. This lack of detailed prescriptions of knowledge and skills leaves the requirements ambiguous, meaning the threshold statements could be interpreted in multiple ways, creating potential confusion rather than clarity.

Practical experience gained by HE outdoor education graduates is important for workplace preparedness and recognition (Melhuish, 2016; Schreck et al., 2020). Researchers and practitioners have identified the importance of practical experience in developing several core outdoor leadership competencies, including technical adventure skills, safety skills, risk management, leadership, and the ability to minimise environmental impact (Kosseff, 2016; B. Martin et al., 2017; P. Martin, 1998; Ogilvie, 2005; Priest & Gass, 2018). However, research has not addressed the associations between practical experience and the development of outdoor education knowledge and skills, including the type and amount of practical experience required by graduates through HE outdoor education courses. The outdoor education sector relies on suitably

experienced staff to deliver programs (Marsden Jacob Associates, n.d.-a), the limited research regarding practical experience is of concern. For example, when evaluating a HE outdoor education graduate for employment, how do we know what “suitably experienced” means if we cannot formally connect it to the graduate’s practical experiences.

A lack of research into, and a limited and varying sector understanding of, the required knowledge, skills, and practical experience of HE outdoor education graduates creates an absence of evidence-based guidelines. Guidelines focusing on safety in the outdoors in Australia (Outdoor Council of Australia, n.d.-a) and the accreditation of outdoor leaders in the United Kingdom (Brown et al., 2015) have proven to be important resources to inform policy, procedure, and practice. The HE sector requires guidelines to assist in designing courses, curricula, and practical experiences meeting society’s expectations to provide safe and effective educational experiences to young people. The outdoor education sector requires guidelines on the knowledge, skills, and practical experience required of HE outdoor education graduates to determine eligibility for employment as an outdoor educator. Based on the absence of guidelines, the Australian outdoor education sector refers to industry Australian Adventure Activity Standards (AAAS) based on VE outdoor leadership learning outcomes (Department of Education Skills and Employment, n.d.-b; Outdoor Council of Australia, n.d.-a) to inform their assessment of the suitability of HE outdoor education graduates for employment. The AAAS and VE outdoor leadership learning outcomes are concerned with safety and technical leadership, not education; therefore, not all the knowledge and skills required to deliver outdoor education programs are covered.

Research Purpose, Questions and Method

The purpose of this study was to establish the knowledge, skills, and practical experience required by HE outdoor education graduates in Australia to gain

employment domestically. To address the purpose, the following questions were applied:

1. What knowledge and skills are required by Australian HE outdoor education graduates?
2. What is the nature of the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills?
3. How can these findings inform the HE sector in outdoor education courses and the outdoor education sector on knowledge, skills, and practical experience?

These research questions have been addressed using a three-phase, mixed methods, exploratory sequential research design. The design commenced with two qualitative phases, building the knowledge required to develop a quantitative phase. Phase 1 involved a qualitative analysis of documents sourced from the community, industry, and government on the knowledge, skills, and practical experience required of HE outdoor education graduates. During Phase 2, semi-structured interviews were conducted with industry professionals to explore the perceptions of outdoor education practitioners on the same matters as the document analysis. The merged results of these two phases informed the Phase 3 quantitative design. To support the generalisation of the qualitative phase, an online questionnaire was designed and distributed to outdoor education practitioners. The Phase 1, 2, and 3 results were then used to answer the three research questions.

Bioecological theory (Bronfenbrenner & Morris, 2006) was applied as the theoretical framework to explore the social and physical ecology surrounding the development of HE outdoor graduates' knowledge and skills. While governments, communities, and industry have used bioecological theory to understand and inform policy, strategy, and practice in various contexts, including adult learning (Carol, 2008; Rosa & Tudge, 2013), the theory has not yet been applied to HE outdoor educator development.

The workplace and university sector collaboratively drive the development of outdoor education graduates. Through real-world demands and practical considerations, the workplace contributes valuable insights into the specific requirements necessary for outdoor education graduates. Simultaneously, with educational expertise, the university plays a vital role in shaping the academic foundations and pedagogical approaches required for effective outdoor education. Consequently, this research identifies the shared responsibility of the workplace and university in shaping the knowledge and skills needed by HE graduates.

Significance of the Study and Contribution to the Body of Knowledge

HE outdoor education graduates require knowledge, skills (Thomas et al., 2019), and practical experience (Munge et al., 2018) to provide education outcomes to school students. Understanding the knowledge, skills, and practical experience of HE outdoor educators is important where the sector seeks to ensure these graduates are competent to deliver outdoor education safely and achieve educational outcomes. The absence of academic research into, and conceptual thought on, this particular area clearly shows the need to advance research in this field. The knowledge and skills required for HE outdoor education graduates and the relationships between practical experience and the development of knowledge and skills are identified in this study.

The knowledge and skills required by HE graduates emerge from the societal function requirements of outdoor educators, and these requirements are identifiable in the social ecosystem. It was found through the study that the societal function of a HE outdoor education graduate is determined by the importance society places on the outcomes of an outdoor education program for school students. The outcomes included safety, education quality, and education outcomes. Following these insights, the current study identified elements of knowledge and skills required to deliver safe and educationally focused outdoor education programs based on these societal expectations.

A bioecological relationship between practical experience and the development of knowledge and skills required for HE outdoor education graduates was found in the current study to exist. Proximal processes are the people, context, processes, and time directly affecting human development within a practical experience microsystem. For example, the influences a lecturer and river location bring to developing the knowledge and skills associated with leadership, canoeing, and environmental interpretation. Understanding proximal processes within practical experience microsystems has allowed this study to identify the influences on HE student learning during a practical experience.

Contributions from the current study will expand knowledge in Australia and internationally. While cultural and geographical contexts are important (Purc-Stephenson et al., 2019), this study's findings could transfer to international contexts, particularly in western nations (Priest, 1986a). Theoretical findings regarding bioecological theory, knowledge and skills, and practical experience could be used to support further research in other countries. Practically, this study identifies how HE and outdoor education sector practitioners internationally can apply the contributions as tools and assess their appropriateness within the practice contexts.

Structure of Thesis

Eight chapters comprise this thesis. Chapter 1 provides an overview of the study, its theoretical framework, the research purpose and associated questions, and the study's significance. Chapters 2 and 3 focus on the literature reviewed. Specifically, Chapter 2 provides a review of literature related to the knowledge, skills, and practical experience of HE outdoor education graduates. Chapter 3 presents a review of the literature regarding bioecological theory and presents it as the study's theoretical framework. In this context, Chapter 3 discusses the theory in detail and addresses how it will be applied to HE outdoor education graduates.

Chapter 4 outlines the study's research methodology, focusing initially on the applied mixed methods approach and then describing the qualitative and quantitative procedures. Chapter 5 presents the results for the two qualitative phases of the research, comprising the documentary analysis followed by the semi-structured interview analysis. Chapter 6 reports the results of the quantitative phase, arising from the online questionnaire responses. These results provide depth and clarity regarding the knowledge, skills, and practical experience that are then unpacked in the discussion.

Chapter 7 directly addresses the research questions by cross-referencing the study's findings with the literature reviewed. The chapter presents new theoretical connections between societal requirements for HE outdoor education graduates, the knowledge and skills required, and how practical experience contributes to competence and preparedness for outdoor education practice. Lastly, Chapter 8 summarises the research findings, including the study's contributions to new knowledge to advance theory and practice, the study's limitations, and recommendations for future research.

Publications from this Study

The publication Marsden et al. (2012) reported the findings from Chapter 2 of this study, the literature review. As such a high level of content similarity was identified (49%) through the URKUND plagiarism software between the publication and the final literature review presented in this thesis. The publication's details are as follows:

Marsden, D., Hanlon, C., & Burridge, P. (2012). The knowledge skill and practical experience required of outdoor education leaders in Victoria. In M. Burke & B. Stewart (Eds.), *Sport, culture and society* (pp. 77–94). Maribyrnong Press.

Chapter 2. Literature Review: Knowledge, Skills, and Practical Experience of Higher Education Outdoor Education Graduates

Outdoor education is an important aspect of Australian school education, as the state of Victoria exemplifies. In Victoria, over 60% of secondary schools offer formal curriculum studies in outdoor education or recreation (Victorian Curriculum and Assessment Authority, n.d.). In 2015, Victorian schools provided 2.5 million participant days of outdoor activity (Marsden Jacob Associates, n.d.-b). The importance of outdoor education was reinforced when in 2020, 224 Victorian schools offered the Victorian Certificate of Education (VCE) Outdoor and Environmental Studies subject, while 58 offered the Certificate II in Outdoor Recreation (Victorian Curriculum and Assessment Authority, n.d.). Outdoor education is also offered in primary and secondary schools through residential trips, bush camps, and day excursions, with young people participating in a range of outdoor activities (Lugg & Martin, 2001). Schools regularly engage external outdoor education providers and camping organisations to run these activities in collaboration with school teaching staff. Reliance on external outdoor education providers could explain why outdoor adventure guiding employment is estimated to increase by 26.5% between 2018 and 2023 (Skills IQ, 2019).

Despite the growing reliance on external outdoor education providers by schools, evidence-based guidelines applicable to the body of knowledge and skills required of outdoor educators are absent. In the absence of knowledge and skills guidelines, the HE sector has developed a range of outdoor recreation, education, and adventure sports courses that may or may not meet the outdoor education sector's requirements for HE outdoor education graduates. The lack of guidelines also has implications for the HE sector when determining the extent of practical experience required to develop outdoor education graduates' knowledge and skill.

In the context of limited guidelines, this chapter explores literature on the knowledge and skills required for HE sector outdoor education graduates, and the

extent to which practical experience is required. Based on this exploration, gaps, and inconsistencies within the literature regarding the knowledge and skills and the role of practical experience required for the development of HE outdoor education graduates are explored. It is important to note the scope of this literature review intentionally excludes exploration of the historical dimensions of outdoor education and the intricate facets of content and pedagogy that are indispensable for students undertaking outdoor education in schools. The focus of the study aims to address the knowledge and skills required for graduates in outdoor education within the HE sector, along with the significance of practical experience. The review provides a targeted analysis and synthesis of the literature related to these aspects. Similarly, the intricate facets of content and pedagogy essential for students in outdoor education schools fall outside the focus of this study, based on the need to examine the knowledge and skills required for graduates in the HE sector. The deliberate exclusion of these topics ensures a targeted and coherent approach to the literature reviewed within its defined parameters.

Australian Higher Education Outdoor Education Graduates

Tertiary outdoor education graduates are employed across five industry sectors: outdoor education, corporate/organisational training, bush adventure therapy, outdoor recreation, and nature/adventure (Mann, 2005). Although each sector is unique in content and target client, they are all part of the broader outdoor industry that is characterised by engagement with the natural environment, guided adventure-based outdoor recreation activities, and the equipment, risk management, and logistical requirements associated with those activities (Mann, 2003).

In Australia, the outdoor education sector provides programs to school age young people. Mann (2003) has defined the outdoor education sector by its use of adventure and environmental activities to achieve a set of educational outcomes. In practice, outdoor education programs engage with the natural environment and

adventurous activities to provide educational experiences that encourage personal, social, and knowledge development in an atmosphere that generates a connection between the individuals and the natural environment (Priest, 1986b).

Outdoor activities involve the development of a community where students have opportunities to take social, emotional, and physical risks, and these experiences are used to promote student reflection on their beliefs and practices (Quay et al., 2002). Tertiary outdoor education graduates need to learn general skills to safely conduct outdoor activities while identifying 'teachable moments', during which the activity and environment provide opportunities for learning (Swiderski, 1987). These graduates need to acquire specialist education skills to facilitate the learning that can be fostered through these activities (P. Martin, 2008b; Outdoor Council of Australia, 2020). Kosseff (2016) and B. Martin et al. (2017) identified outdoor leaders' core responsibilities as minimising participants' physical, psychological (including emotional) and social risks, maximising participants' learning and enjoyment, and reducing the detrimental impact on the natural environment. The inter- and intrapersonal skills needed to conduct this work are combined with the technical skills to manage the adventurous activity, whether rafting down a swift flowing river or setting up tents with a storm approaching (Swiderski, 1987). Beyond providing a safe environment (an appropriate standard of duty of care for the minors in their charge), an outdoor education graduate's responsibility extends to creating a challenging and supportive environment when working with students towards specific educational objectives (Haddock & New Zealand Mountain Safety Council, 2004).

In this case, the tertiary outdoor education graduate is involved in a complex role. That is, teaching the skills associated with the activity, managing group social interactions, and monitoring the natural environment; all requiring a broad range of knowledge and skills spanning the outdoor leadership and outdoor education bodies of knowledge. There are two formal pathways in Australia to acquire the knowledge and skills previously discussed: a VE certificate or diploma or a HE degree. While diverse in

content between courses and institutions, these pathways aim to educate graduates in outdoor adventure leadership, the majority of whom may be engaged by the outdoor education sector. However, only a limited number of HE institutions provide specific courses in the knowledge and skills of outdoor education.

Knowledge and Skills Required for Higher Education Outdoor Education Graduates

The knowledge and skills identified for outdoor education leaders have evolved from outdoor leadership research over the past 40 years (Buell, 1981; Kosseff, 2016; B. Martin et al., 2017; Priest, 1986a; Priest & Gass, 2018; Swiderski, 1981; Wagstaff et al., 2006). Initially, researchers identified extensive lists of attributes, skills and qualities needed by outdoor staff to lead groups (Buell, 1981; Swiderski, 1981). Subsequent refinements and analysis by researchers such as Priest (1986a), Swiderski (1987), and Wagstaff et al. (2006) led to commonly accepted and used frameworks of knowledge and skills for outdoor leadership (B. Martin et al., 2017; Priest & Gass, 2018). Eight core knowledge and skills were identified in a framework by B. Martin et al. (2017), referred to as “competencies that are essential to effective outdoor leadership”. Twenty-eight sub-competencies are associated with the core competencies, as noted in Table 1. Despite the negative critique of B. Martin et al. (2017) and their contemporaries on producing outdated “long laundry lists” (H. Smith, 2021, p. 62) of core competencies, their frameworks are acknowledged as one the profession chooses to draw upon (H. Smith (2021).

Table 1

The Knowledge and Skills of Outdoor Leadership

Knowledge and skills	Sub-competencies
Foundational knowledge	Sense of purpose Sense of heritage Breadth of the profession Understanding of leadership theory
Self-awareness and professional conduct	Acting mindfully

Knowledge and skills	Sub-competencies
	Knowing one's abilities and limitations Knowing how we influence others Behave ethically
Decision-making and judgement	Decision-making as a conscious process Role of judgement in decision-making Available resources in decision-making
Teaching and facilitation	Effective facilitation skills Effective teaching skills Experiential learning
Environmental stewardship	Environmental ethics Ecological literacy Parks and protected areas management
Program management	Planning skills Organisational skills Management skills
Safety and risk management	Participant safety Preparation and planning Legal aspects of safety and risk management Assessing abilities and limitations
Technical ability	Proficiency in particular activities Experience-based competency Professional certifications

Note. Adapted from "Outdoor leadership: Theory and practice," by Martin, B. et al., 2017, p. 5
Champaign, IL, Human Kinetics Publishers.

The framework of outdoor leadership knowledge and skills of B. Martin et al. (2017) stands out from other models (Priest & Gass, 2018; Shooter et al., 2009; Thomas et al., 2019). It enables the provision of sub-competencies that allow for specific content and skill descriptors to be attributed to each broader knowledge or skill. Broadly mapping the knowledge and skills makes the framework of B. Martin et al. (2017) particularly relevant for the development of tertiary courses (VE/HE), where the body of knowledge and skills in outdoor leadership is the focus of a course. However, a noticeable gap in the B. Martin et al. (2017) framework is the lack of competencies specific to outdoor educators that applies to HE outdoor education graduates.

The body of knowledge and skills surrounding outdoor education has not been clearly identified and demonstrates a clear gap in the body of literature. As a result, the

tertiary education sector regularly draws an understanding of outdoor education knowledge and skills from the general outdoor leadership knowledge area that has been identified. Influencing tertiary courses, this focus is observable through a reliance on the outdoor leadership education and training package as the benchmark in industry documents to determine 'competence' for outdoor leaders, including outdoor educators. (Outdoor Council of Australia, 2020; The Department of Employment and Workplace Relations, n.d.).

Based upon a review of secondary school outdoor education curriculum documents for outdoor education, P. Martin (2008a) identified the body of knowledge provided to students in their senior years of schooling. The content categories of knowledge identified by P. Martin (2008a) were outdoor pursuits, journeys and expeditions, outdoor leadership, place-based knowledge, environmental science, and human/nature relationships (Table 2). Each content category connects to knowledge and skill competencies; for example, outdoor pursuits includes bushwalking, canoeing, rock climbing, and navigation. Although not the aim of P. Martin's (2008a) research through identifying the content categories and knowledge and skill competencies, P. Martin (2008a) also identified those required of an outdoor educator. However, it is important to note that P. Martin's (2008a) research did not identify the professional and personal knowledge and skills required of an outdoor educator to deliver outdoor education programs. Also, the P. Martin (2008a) outdoor education body of knowledge framework provides limited insights into the knowledge and skills necessary for HE outdoor education graduates. While the framework concentrates on the senior school curriculum (Years 11 and 12), outdoor education is also conducted in secondary schools from Year 7 to Year 10 through a variety of curriculum and cocurriculum programs (Lugg & Martin, 2001; P. Martin, 2008a). During Years 7–10, most students are engaged in outdoor education through school camps and field trips. Consequently, a more complete representation of outdoor educators' knowledge and skills is required.

Table 2

Alignment of Outdoor Education Body of Knowledge and Outdoor Leadership Knowledge and Skills

P. Martin (2008a) Outdoor education body of knowledge content categories						
Author	Outdoor pursuits	Journey or expedition	Outdoor leadership	Place-based knowledge	Environmental science	Human/nature relationships
P. Martin (2008a) Outdoor education body of knowledge.	Knowledge and skill for the safe performance of outdoor activities. Bushwalking. Canoeing. Rock climbing. Navigation.	Knowledge and skill to effectively participate in an extended outdoor experience. Minimum environmental impact. Understanding weather. Personal management skills. Group dynamics & outdoor leadership. Risk management. Organisation and planning. First aid outdoors.	Leadership theory. Decision-making. Communication. Problem-solving. Conflict. Search and Rescue.	Place-based knowledge to understand more about the areas visited. Specific environmental management plans. Natural history of place. Environmental issues of relevance. Historical use of the land.	Food chain. Water cycle. Biomes. Vegetation types. Flora/Fauna classification. Chemical cycles.	Social and cultural critiques of human/nature relationships. Personal and social responses to nature. Motives for risk and adventure. Relationships between technology, environmental impact, and outdoor knowledge. Nature and adventure in the media. Indigenous and other world views. Environmental activism, social values, and change.

 P. Martin (2008a) Outdoor education body of knowledge content categories

Author	Outdoor pursuits	Journey or expedition	Outdoor leadership	Place-based knowledge	Environmental science	Human/nature relationships
Priest and Gass (2018) Elements of effective outdoor leadership.		Technical skills. Safety skills. Environmental skills. Organisational skills.	Instructional skills. Facilitation skills. Flexible leadership style. Experience-based judgement. Problem-solving skills. Decision-making skills. Effective communication. Professional ethics.	NIL.	NIL.	NIL.
B. Martin et al. (2017) Core competencies of outdoor leadership.	Technical ability.	Technical ability. Environmental stewardship. Program management. Safety and risk management.	Foundational knowledge. Self-awareness and professional conduct. Decision-making and judgement. Teaching and facilitation.	Environmental stewardship. (Parks and protected areas management)	NIL.	Environmental stewardship. (Environmental ethics, Ecological literacy)

When aligning P. Martin's (2008a) knowledge and skills findings against the outdoor leadership frameworks identified by Priest and Gass (2018) and with B. Martin et al. (2017) core competencies, at first glance, the outdoor education and outdoor leadership bodies of knowledge and skills appear consistent (Table 2). However, exploring these frameworks further shows that aspects of knowledge and skills relating to outdoor education are omitted. Specifically, the frameworks do not, or only partially identify, place-based knowledge, environmental science, and human/nature relationships. Omissions in knowledge and skills required for outdoor education and outdoor leadership are vital to identify. Supporting this omission is the emerging identification of outdoor education knowledge and practice as connecting adventure education, environmental education, and experiential learning by focusing on interpersonal, intrapersonal, ecosystemic, and ekistic relationships (Mann, 2003; B. Martin et al., 2017; Priest & Gass, 2018).

Threshold concepts have been a recent addition to the academic debate on the knowledge and skills required of HE outdoor education graduates (Polley & Thomas, 2017). Threshold concepts may be identified as transformative knowledge that exposes the interrelatedness of phenomena, and that, once learnt, is unlikely forgotten (Cousin, 2006). Thomas et al. (2019) endeavoured to "establish a set of threshold concepts that articulate what a student who completes at least a major in outdoor education knows and is able to do" (p. 169) in Australia. These researchers identified seven threshold concepts to describe the minimum capabilities required of Australian university course graduates (Table 3). In comparison to the knowledge and skills identified by P. Martin (2008a), Priest and Gass (2018) and B. Martin et al. (2017) in Table 2, these threshold concepts are broad conceptual statements and do not identify specific knowledge and skills. To provide clarity and consistency, a more detailed understanding of the knowledge and skills of HE outdoor education graduates connected to these broad conceptualisations of capabilities is required.

Table 3*Threshold Concepts for HE Outdoor Education Programs*

No.	Threshold concept
1	Outdoor educators create opportunities for experiential learning.
2	Outdoor educators use pedagogies that align their program's purpose and practice.
3	Outdoor educators are place-responsive, and see their work as a social, cultural, and environmental endeavour.
4	Outdoor educators advocate for social and environmental justice.
5	Outdoor educators continue to develop their skills, knowledge, and expertise.
6	Outdoor educators understand and apply a strict aversion to fatalities.
7	Outdoor educators routinely engage in reflective practice.

Note. Threshold concepts tabulated from Thomas, G., Grenon, H., Morse, M., Allen-Craig, S., Mangelsdorf, A., & Polley, S. (2019). Threshold concepts for Australian university outdoor education programs: findings from a Delphi research study. *Journal of Outdoor and Environmental Education*, 22(3), 169–186.

The Hard, Meta, and Soft Skills of Outdoor Education

When grouped, outdoor educators' knowledge and skills can be placed into three categories; hard (technical), meta, and soft (interpersonal) knowledge and skills (Baker & O'Brien, 2020; Swiderski, 1987). Although not a formal nomenclature, these three categories provide a widely accepted system in Australia (Baker & O'Brien, 2020; Munge, 2009) and internationally (Kosseff, 2016; B. Martin et al., 2017; Munge, 2009; Priest & Gass, 2018; Swiderski, 1987; Swiderski, 1981) to investigate the complexity of outdoor education knowledge and skills. Although the words hard and soft skills are commonly used and accepted in the fields of outdoor education and outdoor leadership in Australia, it is important to recognise the masculine-centric nature of these words and their potential to denigrate the female gender (Jordan, 2018). The hard knowledge and skills of leadership are those based on technical competency (Swiderski, 1987), including those to undertake or lead an adventure activity, provide safety or emergency response, administer programs, and ensure environmental protection. Soft knowledge

and skills are interpersonal skills and associated knowledge, including teaching, promoting values, team building, resolving conflict, facilitation, and debriefing.

Metaknowledge and skills involve problem-solving and decision-making across the hard and soft skill areas (Figure 1). These include perceiving potential danger and responding to it creatively, facilitating learning outcomes, and generating new approaches (Kosseff, 2016; B. Martin et al., 2017; Priest & Gass, 2018; Raiola & Sugerman, 1999; Swiderski, 1987).

Figure 1

Relationship Between the Hard, Meta, and Soft Knowledge and Skills of Outdoor Leadership



The knowledge and skills model of outdoor leadership may be applied to organise the knowledge and skills of outdoor education into manageable conceptual areas and separates the vocationally oriented specific technical skills from skills generated through a broader understanding of the outdoor education process. Raiola and Sugerman (1999) identified that outdoor leaders' knowledge and skills are inclusive of hard skills, developed through practical experience simulating workplace tasks, and soft and metaknowledge and skills, developed through formal education that enables the student to understand the theoretical context in which the technical skills are applied. In Australia, VE focuses on learning workplace tasks while HE focuses on the broader body of knowledge, including theoretical context.

All formal outdoor qualifications in Australia must comply with the AQF (Department of Education Skills and Employment, n.d.-a). VE qualifications, from

Certificate II in Outdoor Leadership to specific activity-based qualifications, through to undergraduate and higher degrees in outdoor education offered at HE universities, align with the AQF (Department of Education Skills and Employment, n.d.-a). Consequently, the outdoor education hard, meta, and soft knowledge and skills taught in VE and HE courses align with the AQF framework. AQF Level 7 provides a transition point that helps guide where outdoor educators' hard, meta, and soft knowledge and skills occur within the framework.

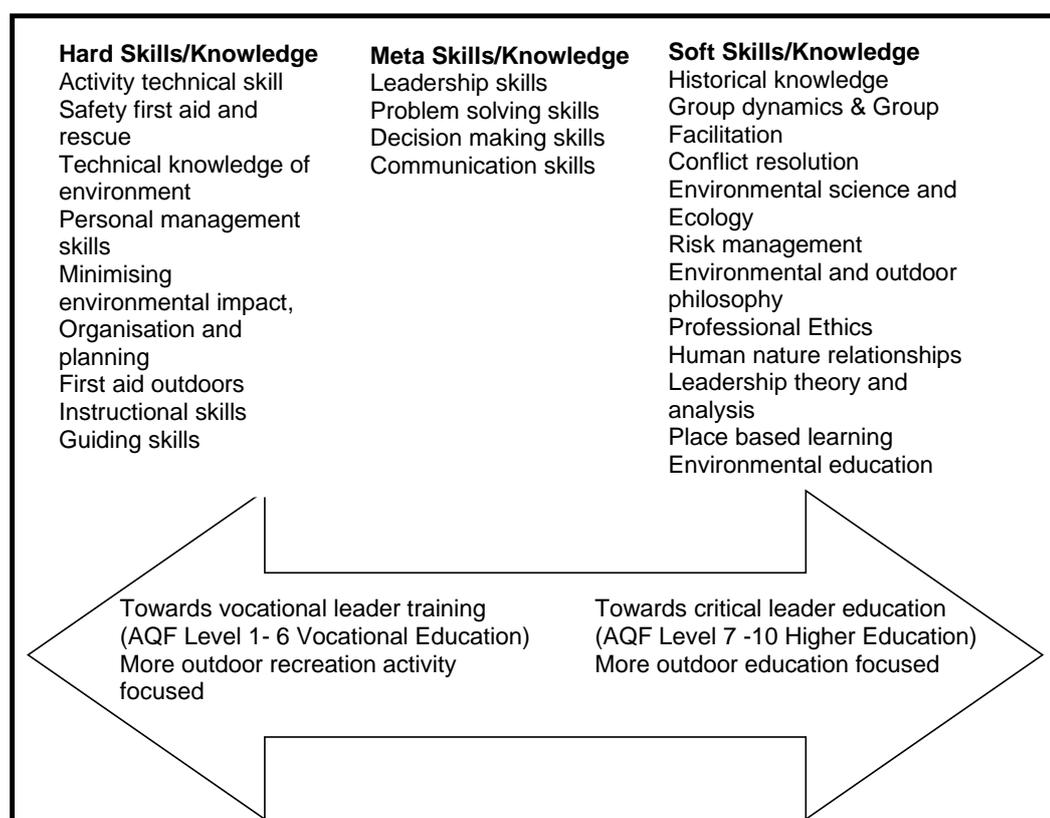
The AQF organises qualification types into a taxonomic structure defined by learning outcomes. There are 10 AQF levels within the structure, containing 16 AQF qualification types (Department of Education Skills and Employment, n.d.-a). AQF Level 6 is a transition level that may be delivered in VE as an associate diploma and HE as an associate degree. By focusing on AQF Level 7 bachelor's degree, a picture regarding HE graduate outcomes can be established for students of outdoor education. AQF Level 7 is significant because, at this point, the VE based qualifications conclude, and HE based qualifications commence. At AQF Level 7 there is a significant shift from the workplace oriented outcomes of AQF Levels 1–6, to the critical analysis and synthesis of knowledge outcome descriptors common to AQF Levels 7–10 (Department of Education Skills and Employment, n.d.-a). When compared to AQF Levels 1–6, the knowledge, thinking, and professional practice skills identified in AQF Levels 7 and above best align with the soft and meta knowledge and skills of outdoor educators, including leadership and educational theory, interpersonal communication, place-based knowledge, environmental science, and human/nature relationships.

An analysis of the AQF combined with the hard, meta, and soft knowledge and skills model of outdoor leaders provides a lens to examine the development of knowledge and skills of outdoor educators in tertiary education. Figure 2 summarises the relationship between outdoor educator knowledge and skills and the AQF structure. If conceptualised on a sliding scale from hard to soft knowledge and skills, the hard knowledge and skills end of the scale is dominated by technical workplace and

vocational skills. In contrast, the soft skills end is dominated by skills linked to the broader body of knowledge in which outdoor education is practised. Analysis shows that the entry level VE qualification for outdoor leadership (Level 2, Certificate II) is more readily aligned with the acquisition of hard skills. In contrast, the entry level HE qualification for outdoor education (AQF 7 bachelor's degree) is more readily aligned with the acquisition of soft skills.

Figure 2

The Hard, Meta and Soft Knowledge and Skills of Outdoor Educators Referenced to the AQF



Significant issues are posed from this analysis related to the HE and VE sectors. Regardless of the tertiary education sector (HE and VE), the development of knowledge and skills takes time, resources and has compliance requirements. For these reasons in the HE sector, the predominance of soft knowledge and skills creates a struggle to balance with the hard skills that underpin the management of adventurous activities. While the AQF binds the HE sector to deliver graduates who meet the

requirements at level AQF 7, it is not required to deliver specific hard skills, such as those in VE outdoor leadership courses. However, if a HE outdoor education course has time and resources, it can deliver hard skills. There can be significant variation between HE courses due to this flexibility. As a result, it is possible that a HE outdoor education graduate may have the knowledge to lead in the outdoors but may not have the hard skills to operate as a technically skilled outdoor activity guide or instructor. Conversely, aligning the VE sector with hard skills predominately can leave VE graduates competent in technical aspects of outdoor leadership but limited in their ability to work with school groups focused on outdoor education because they lack the soft knowledge and skills. VE hard skill dominance is congruent with the competency-based vocational education training system. For example, the sport, fitness and recreation training package (SIS) only has three units of competency explicitly oriented to outdoor education approaches (Department of Education Skills and Employment, n.d.-b). These adventure-based learning units are not a compulsory component of any of the certificates or diplomas in outdoor leadership. The remaining SIS units focus on developing skills for instruction and guiding in outdoor recreation activities, occupational health and safety, business administration, or recreation programming (Department of Education Skills and Employment, n.d.-b). As with the HE sector, VE graduates can vary depending on the course and units of competence completed. As a result, a VE graduate practitioner, who has the hard skills to lead in the outdoors, may not have formally studied the soft skills knowledge pertaining to outdoor education.

Personal Traits and HE Outdoor Education Graduates

Certain personal traits may enable HE outdoor education graduates to excel as educators. The following section discusses noted traits an educator may require and their significance in preparing HE outdoor education graduates for successful careers as outdoor educators. Passion and enthusiasm are crucial traits for inspiring and engaging students in outdoor education (B. Martin et al., 2017). Effective interpersonal

skills enable educators to establish meaningful connections and create inclusive learning environments (Hattie, 2008; B. Martin et al., 2017). Graduates must also demonstrate flexibility and adaptability to navigate the unpredictable outdoor environment (Priest & Gass, 2018). Environmental care is vital for instilling a sense of responsibility towards the natural world in students (Rickinson et al., 2004). Lastly, resilience combined with risk management skills are essential for managing challenges and ensuring student safety (Priest & Gass, 2018).

Passion and enthusiasm are fundamental characteristics that HE outdoor education graduates must possess. These traits allow educators to create a positive learning environment and inspire their students. Kosseff (2016) observed that learners can be more effectively engaged when educators genuinely display excitement for the subject matter. A passionate and enthusiastic approach not only enhances the overall experience for students, it also motivates them to explore and discover their potential in the outdoor education setting.

Interpersonal and communication skills are critical for establishing meaningful connections between educators and school students. To obtain these skills personal traits are required, such as active listening, empathy, effective verbal and nonverbal communication, patience, and the ability to establish rapport with students. Effective educator-student relationships and clear communication have been proven to promote student achievement (Hattie, 2008). B. Martin et al. (2017) highlight the importance of communication in outdoor leadership. By actively listening and expressing ideas clearly, HE outdoor education graduates can create a safe and inclusive learning environment where collaboration and personal growth thrive.

The outdoor environment is dynamic and unpredictable, requiring HE outdoor education graduates to demonstrate the traits of flexibility and adaptability. As Priest and Gass (2018) emphasise, successful outdoor educators must be capable of adjusting their teaching methods and activities to accommodate diverse learner needs. Flexibility enables graduates to seize teachable moments and capitalise on unexpected

opportunities. It also ensures that outdoor education experiences remain relevant and engaging, providing students with valuable learning outcomes. H. Smith (2021) reinforces the importance of adaptability in leadership, particularly in the context of outdoor education.

A strong sense of environmental stewardship and care is required by graduates of HE outdoor education programs. By instilling an environmental ethos in students, educators can promote responsible outdoor practices and inspire a commitment to an ethic of environmental care (Thomas et al., 2021). Rickinson et al. (2004) highlight the role of outdoor learning experiences in developing an appreciation for the natural world. HE outdoor education graduates should not only possess a deep understanding of ecological principles, sustainable practices, and conservation ethics but also have a strong care ethic to reinforce their practice.

Outdoor education is a unique and challenging field that requires educators to possess physical and emotional resilience. Graduates of HE outdoor education programs need to be able to overcome and adapt to adverse conditions, whether it be extreme weather, difficult terrain, or unexpected challenges (B. Martin et al., 2017). In addition to resilience, effective risk management skills and decision-making frameworks are crucial for creating a safe learning environment. As Priest and Gass (2018) note, developing these traits is essential for success in outdoor education; by cultivating these qualities in themselves and their students, educators can create meaningful and transformative experiences that inspire lifelong learning and personal growth.

Practical Experience to Develop the Knowledge and Skills of HE Outdoor Education Graduates

Researchers and practitioners have identified that the development of leadership knowledge and skills is linked to the practical experiences undertaken by outdoor education graduates. Practical experience develops a number of core outdoor

knowledge and skill areas, including judgement, decision-making, place-based knowledge, group management, facilitation skills, technical skills, and safety and risk management skills (Kosseff, 2016; B. Martin et al., 2017; P. Martin, 1998; Priest & Gass, 2018).

Research has mainly focused on the general experience of outdoor graduates and their development of skills in judgement, decision-making, and risk management and has identified some of the benefits of practical field experience. For example, Galloway (2007) found that experienced leaders were more effective than novice leaders at making decisions when faced with advanced first aid problems. At the same time, novice leaders were more likely than experienced leaders to engage directly with the first aid of a patient, rather than being aware of the broader context and being able to organise their group to assist in resolving the issue (Galloway, 2007). Boyes and O'Hare (2003) refer to situational awareness as important to a leader's decision-making based on the leader's beliefs, values, goals, and experiences. As judgement and decision-making capacity improve through experience, Harper and Robinson (2005) found that the outdoor leader's ability to manage safety and risk improves. The more experience a leader has, the more effective they become at managing a group, keeping them safe, and providing an outdoor experience. However, compared to judgement, decision-making, and risk management, other areas of outdoor education knowledge and skills, and their relationship to practical experience, minimal attention is evidenced in the literature. The literature reviewed revealed no studies that explicitly examined HE outdoor education graduates' knowledge and skills (such as place-based knowledge and human/nature relationships) and practical experience.

Practical experience for HE outdoor education graduates, can be defined as prescribed experiences to develop their outdoor education knowledge and skills. HE outdoor education practical experiences can take the form of supervised work placement (internships or practicum), field work, skills courses, embedded technical training courses, and embedded practical qualifications (Barnes, 2004; Garvey & Gass,

1999; Humberstone & Mannerings, 2004; Mann, 2003; P. Martin, 2008b; Poff et al., 2001; Sugerman, 1999). HE outdoor education practical experience offers the undergraduate opportunities to identify, understand, and consolidate the knowledge and skills of outdoor educators within the broader outdoor education context. Kosseff (2016) identifies that the significance of a particular leadership skill becomes more apparent when the skill is practised within an authentic context, such as the workplace or during an adventure activity. To consolidate knowledge and skills, undergraduates need to demonstrate, practice, and review (as well as theorise) their skills and knowledge within a practical context (Kosseff, 2016; Ogilvie, 2005).

Employers place a high value on the practical experience of outdoor education graduates. In a survey of Australian outdoor industry employers, previous experience and a broad range of outdoor skills were ranked second only to personal attributes in the top 10 employer-desired characteristics and competencies of outdoor leaders (Munge, 2009). Global similarities exist. In the United Kingdom, experience was ranked third behind practical outdoor activity awards and personal attributes (Barnes, 2004). In North America, a blend of institutional and practical experience was sought in outdoor education leader employees (Garvey & Gass, 1999).

The Need for a Coordinated Approach Towards Practical Experience for Higher Education Outdoor Education Graduates

Outdoor educators' practical experience is neither a compulsory nor a standardised component of Australia's HE pathways. Without clear guidelines on the amount, type, and quality of practical experience, there is a risk HE outdoor education graduates may not be prepared to provide programs to school students. Currently, HE outdoor education graduates in Australia come from a range of undergraduate courses, including arts, science, and education, that can prepare them for entry into the outdoor education sector (Commonwealth of Australia, n.d.-a). In 2022, nine courses across three universities in the state of Victoria, were preparing undergraduates as outdoor

educators (Victorian Tertiary Admissions Centre, n.d.). Although regulated under the AQF, the amount of practical experience offered to undergraduates varies considerably across Australian HE institutions. For example, Table 4 demonstrates a variation of more than 100% (in terms of days of experience) between three Victorian HE courses.

Table 4

Comparison of Higher Education Outdoor Education Undergraduate Practical Experience

Institution	Undergraduate Course	Practical days
Federation University	Bachelor of Outdoor and Environmental Education	More than 45 days
Latrobe University	Bachelor of Outdoor and Sustainability Education	More than 70 days
Victoria University	Bachelor of Outdoor Leadership	More than 150 days

Note. Practical days data sourced from Federation University (n.d.-a); LaTrobe University (n.d.-a); Victoria University (n.d.-b).

A noteworthy concern is the absence of clear guidelines for the number of practical days and the types of experiences necessary to prepare outdoor educators within the HE sector. This lack of guidance leaves HE academics with limited grounds to advocate for the appropriate duration of practical training for aspiring outdoor educators.

Developing clear guidelines and requirements for practical experience in outdoor education within the HE sector would be beneficial. Such guidelines would provide a common framework and reference point for HE academics to advocate for a balanced approach encompassing technical and interpersonal skills. By establishing these guidelines, HE institutions can ensure that graduates possess a comprehensive skill set that aligns with the expectations and demands of the outdoor education profession.

Disparities, Contradictions and Omissions for the Higher Education Sector

There are disparities, contradictions, and omissions in the literature addressing the requirements for HE outdoor education graduate knowledge, skills, and practical experience. Disparities are evident in the lack of consistent expectations for HE outdoor education practical experience. Contradictions can be observed in the expectation of HE outdoor education undergraduates requiring hard, meta, and soft knowledge and skills that span nearly half the AQF. Omissions are in the lack of knowledge regarding the role of practical experience and the acquisition of knowledge and skills required of outdoor education graduates.

There is currently no framework to address the knowledge and skills required of HE outdoor education graduates. Currently, knowledge and skills are drawn from generic outdoor leadership frameworks that lack the context-specific knowledge and skills required by graduates to provide outdoor education to school students. The gap was demonstrated when comparing the outdoor leadership frameworks of Priest and Gass (2018), B. Martin et al. (2017), with P. Martin (2008a) outdoor education body of knowledge review (Table 2).

A specific framework is required for outdoor education graduate development to guide the development of HE outdoor education courses. The framework needs to respond to the secondary school curriculum and co-curriculum programs, as well as government and industry requirements associated with HE outdoor education graduates. These requirements include the AAAS, the National Training Package which is used as a pseudo industry standard for adventure activity competence, and the various state-based Education Department safety guidelines for outdoor education and excursions.

HE outdoor education courses do not focus on hard skills, and graduates are likely to be better prepared to use soft outdoor education skills. The focus on soft skills is evident through the alignment of the AQF Level 7 bachelor's degree outcome

descriptors with the hard, soft, and meta knowledge and skills of outdoor educators seen in Figure 2. The preference of HE courses towards the development of soft skills causes significant issues for HE graduates, who require hard skills to meet the pragmatic, technical needs of government, industry, and school outdoor education clients. Furthermore, industry and government documents such as the AAAS and the Safety Guidelines for Education Outdoors highlight the need for hard skills to be included in HE outdoor education courses by referencing the hard skill oriented SIS (AQF Levels 2–5) as the measure of outdoor graduates knowledge and skills (Department of Education and Training, n.d.-c; Department of Education Skills and Employment, n.d.-b; Outdoor Council of Australia, n.d.-a). Due to the need to meet hard skills measured against the SIS (AQF Levels 2–5) HE graduates may be excluded from some employment opportunities. The exclusion has the potential to reduce the quality of outdoor education programs as HE outdoor education graduates bring a broader body of knowledge focused on education (Thomas et al., 2019).

HE graduates are required to meet the academic standard of a bachelor's degree at AQF Level 7. At the same time there is a need to develop the hard skills of outdoor leadership knowledge and skills found at Certificate IV at AQF Level 4 (Department of Education Skills and Employment, n.d.-a). The breadth of educational requirements is reflected in the findings of Munge (2007), showing that the top 10 characteristics and competencies Australian employers desire in an outdoor educator have a mixture of hard, meta and soft knowledge and skills. These characteristics included those necessary to instruct and guide outdoor activities and the critical outdoor education knowledge and skills developed through a bachelor's degree. A framework outlining the body of knowledge and skills required by outdoor education graduates would provide a tool to design and examine HE course outcomes. Hence, HE course developers and administrators, and employers wishing to evaluate HE courses, could use this framework as a tool.

To provide clarity regarding the benefits of practical experiences, an understanding of the links between HE practical experience and the development of outdoor education graduates' knowledge and skills is required. To assist the HE sector design and review courses, research into the optimal duration, frequency, and content of HE practical experiences for the development of outdoor education graduates is required. Such research would also clarify to the outdoor education sector the suitability of HE outdoor education graduates for employment.

Collins (2009) suggests that research which can isolate factors regarding experience (as well as certifications and degrees), and their relationship to leaders' knowledge and skills would assist organisations to improve outdoor leader preparation. While Thomas et al. (2019) recommends further research is needed to "generate more discussion and research on what university outdoor education graduates know and are able to do" (Thomas et al., 2019, p. 182).

Chapter Review

Literature regarding outdoor education knowledge, skills, and practical experience was reviewed in this chapter. Findings revealed that omissions exist in outdoor education research relating to the knowledge, skills, and practical experience required of HE outdoor education graduates. These omissions, previously recognised by Mann (2005), Collins (2009), and P. Martin (1998), have resulted in the HE outdoor education sector adopting an inconsistent range of approaches to undergraduate education. Despite the need for a consistent approach to guide outdoor education graduate development, research is yet to establish a recognised guideline. To identify a potential consistent approach, the following chapter introduces and discusses literature regarding Bronfenbrenner's bioecological theory of human development (Bronfenbrenner & Morris, 2006), the proposed theoretical framework for this study.

Chapter 3. Literature Review: Theoretical Framework

Bronfenbrenner's (Bronfenbrenner, 2005) bioecological theory of human development provides the theoretical support for this study. Bioecological theory is applied in this chapter to the context of a HE outdoor education graduate while they are a student in an outdoor education course.

Bioecological theory focuses on influences generated within the exo- and macrosystems relevant to HE outdoor education students' knowledge, skills, and practical experience. Through the application of bioecological theory, this study seeks to identify societal expectations regarding the knowledge, skills and practical experience required by the HE outdoor education graduates, from the perspectives of the outdoor education sector, governments, and the community.

Developing HE outdoor education students' knowledge and skills is a complex process. The process is influenced by community expectations, and by government and outdoor industry requirements that providers ensure safe and meaningful outdoor education programs. The process is further complex whereby HE student learning occurs in a range of environments, including university classes, practical field experiences, and work placements.

The HE outdoor education course practical components (field trips and work placements) occur in the natural environment, immersed in the social interactions of the participating group, including HE educators. The connections HE outdoor education students make during these practical experiences involve the weaving together of the physical landscape and the students' social ecology, that includes their workplace, family, peers, recreational associations, HE institutions, community, government, and the outdoor education sector. The social associations permeating the practical experience settings reflect the broader beliefs, ideologies, worldviews, and environment of our society.

Understanding HE outdoor education students' development requires a theoretical framework enabling investigation of the influences on human development within the social context. Bronfenbrenner's (2005) bioecological theory of human development can provide such a theoretical framework through its focus on the proximal influences directly affecting the student's development while also providing a perspective on the broader social ecology that surrounds the developmental processes (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006).

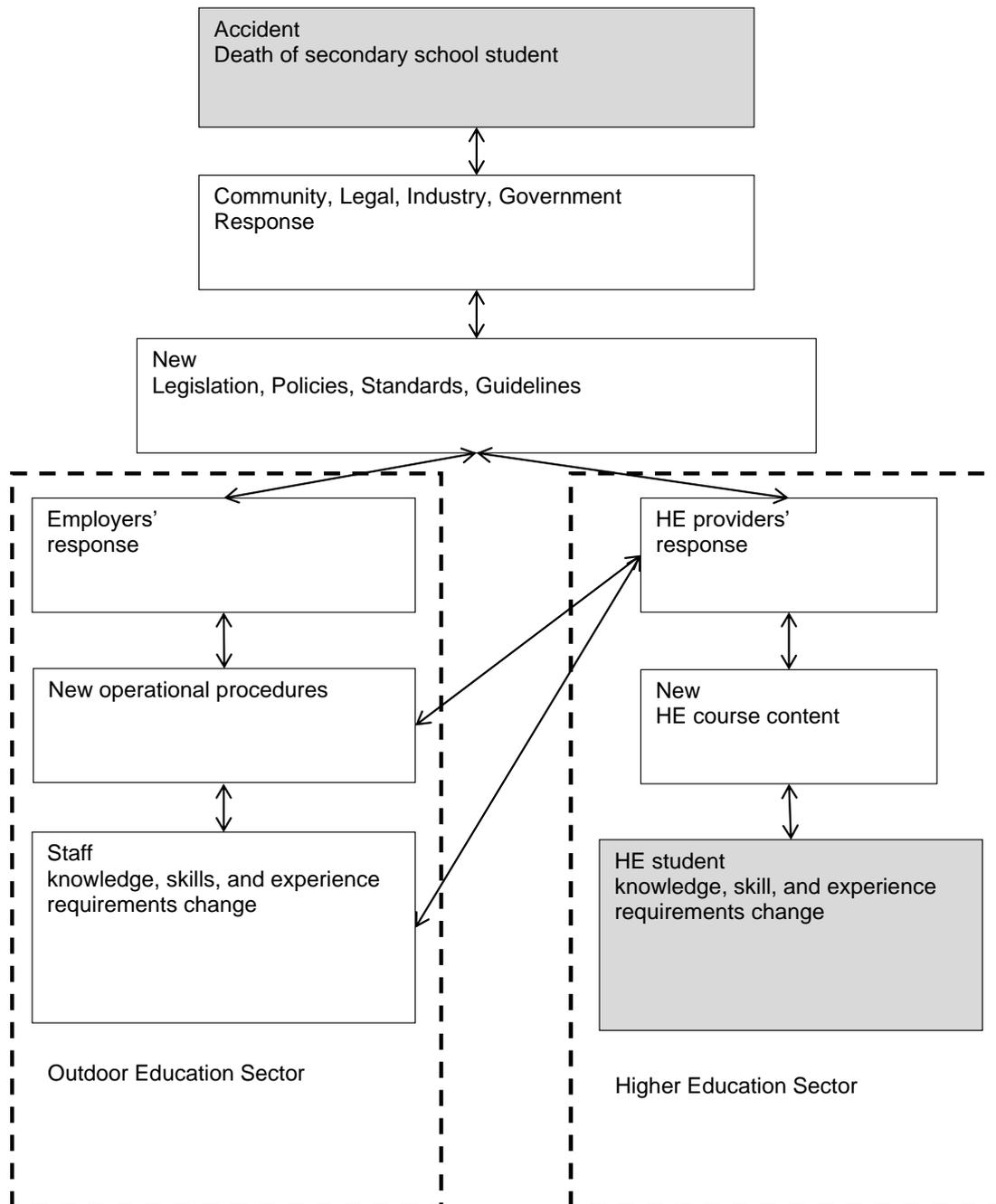
Operating on the premise that all contexts are interconnected and reciprocal in influence (Carol, 2008; Lewthwaite & Wiebe, 2012; L. Smith, 2011), bioecological theory can be used to illuminate the complexity of human development and adult learning in the HE context. For example, not only does an accident leading to the death of a secondary school student during an adventure activity evoke an emotional response from the responsible outdoor educator, and a potential change in that educator's behaviour, the accident also generates parent, community, legal, industry, and government responses and actions, some of which may manifest as new (or altered) standards and policies. Employers who are then required to implement these new standards and policies through operational procedures, will seek outdoor education staff who have the required knowledge, skills, and behaviour (Polley, 2021b; Thomas et al., 2021).

At this point, the knowledge, skills, and experience required of HE graduates is influenced by employer operational procedures. HE providers change course content to ensure that students are knowledgeable, skilled, and experienced to meet workplace requirements and deliver this content through multiple teaching modes, including course-based practical experience. In this context and using the bioecological theory, Figure 3 illustrates the connection between an accidental secondary student death and changes in the knowledge, skills and practical experience required of graduates within a HE course. In this example, the interplay between the outdoor education sector and the HE sector can be clearly seen through HE providers developing course content

based on their interpretation of the changing operational and staffing requirements of employers, alongside relevant legislation, policies, guidelines, and standards.

Figure 3

Connection between an Accident and Higher Education Student Requirements



Bioecological Theory of Human Development

Understanding human development is complicated. The bioecological theory of human development proposes that human development arises from the complex relationships between people, processes, contexts, and time, within an ecological framework (Bronfenbrenner & Morris, 2006; Härkönen, 2007). Bronfenbrenner (2005) defined the ecology of human development as:

The scientific study of the progressive, mutual accommodation, throughout the life course between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by the relations between these settings, and by the larger contexts in which the settings are embedded. (p. 107)

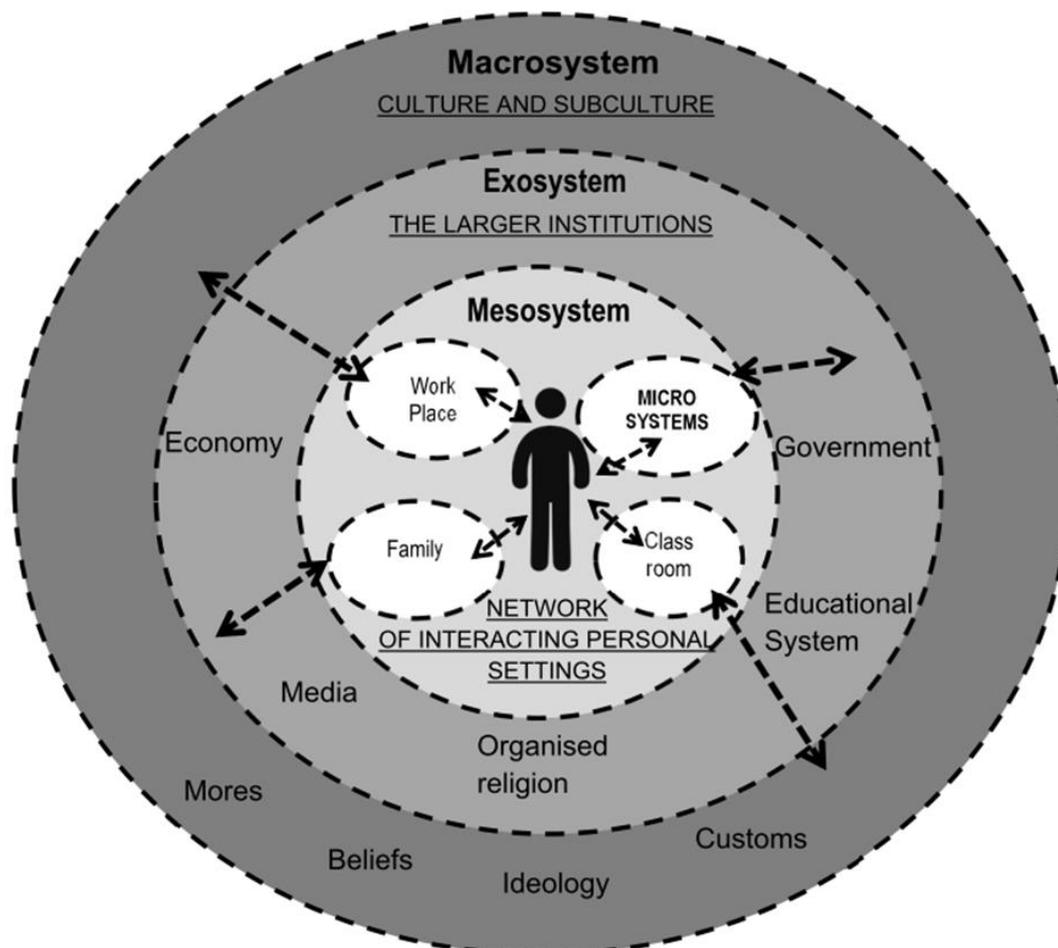
The evolution of the bioecological theory of human development and its components can be portioned into two key periods. The first period involved the development of the initial ecological theory of human development (Bronfenbrenner, 1979). Bronfenbrenner pursued the development of this theory after identifying that laboratory based developmental research took the developing person out of the real-life context and did not emphasise the two-way, social developmental exchange between the subject being studied and other people in their environment (Bronfenbrenner, 2005). For example, studies based in the home could observe both the effect of a child's development on the parents and the developmental stages of the child.

Bronfenbrenner (1979) proposed that human development is influenced through interpersonal and indirect interaction with a nested and expanding ecology of interrelated influence. Four nested layers were identified within this ecology: micro-; meso-; exo-, and macrosystems (Bronfenbrenner, 1979). Härkönen (2007) observes that although Bronfenbrenner did not publish a pictorial design of his theory, there are many interpretations available in the research literature. For example, Figure 4 adapts

Carol (2008), who focused on adult learning and development. Carol (2008) clearly showed the nested systems and the centrality of the developing person.

Figure 4

Ecology of Human Development—Adult Learner



Note. Adapted from “Handbook of Research on Adult Learning and Development. Models of Adult Development in Bronfenbrenner's Bioecological Theory and Erikson's Biopsychosocial Life Stage Theory” by Carol, H, 2008, p. 32. Routledge.

Microsystem

The microsystem is the physical and cultural environment in which the developing person has direct contact. Bronfenbrenner described the microsystem as the “pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting with particular physical and material features and

containing other persons with distinctive characteristics of temperament, personality and systems of belief” (Bronfenbrenner, 2005, p. 148).

Concerning the context of this study, the microsystem involves the connections between the developing person and their immediate settings, which, for university students, would include the home, HE faculty, HE clubs and societies, and workplace. Interpersonal interactions with other people and the physical and material features of the setting take place within the microsystem and directly influence the student’s developmental process. Bronfenbrenner defines these interactions as ‘proximal processes’. Microsystems examples include course-based practicum and work placement, technical skills training courses, student led trips, and supervised field placements.

Mesosystem

The mesosystem encompasses two or more microsystems, generated through singular and multiple connections of people across microsystems. Bronfenbrenner described that “the mesosystem comprises the linkages and processes taking place between two or more settings containing the developing person (e.g., the relationships between home and school, school and workplace). In other words, a mesosystem is a system of microsystems” (Bronfenbrenner, 2005, p. 148).

For example, Bec is a first year HE student studying outdoor education. Bec lives at home with her parents, plays soccer on the weekend, is a member of the university’s outdoor club, attends her formal course work on campus and works at a local café in the evenings. Each of these settings (home, sports club, university club, university campus, and work) are Bec’s microsystems. Bec has created a singular connection from herself to each microsystem.

We can identify and explore multiple connections by introducing Bec’s friend, Aimee. Aimee has her own microsystems, including home, work, and hockey club. She also attends course work with Bec and is a member of the university’s outdoor club. A

multiple connection has occurred by virtue of Aimee having a connection with Bec via the two microsystems of course work and the university outdoor club. While these connections mean Bec and Aimee will share developmental opportunities and have common interests; the connections can also be much more complex. For example, if Bec was to miss a course work class on Friday that Aimee attended and the two then met up on the weekend on an outdoor club trip, Aimee could provide the connection back to the course work class microsystem. The more complex connection may manifest with Aimee providing catch up notes, assisting Bec with an assignment, or reassuring her that she can catch up easily. In this case, Aimee has provided a multiple connection, a link between microsystems when Bec is not present in a common microsystem. In these ways, and others, singular and multiple linkages connect microsystems to create the systems of systems, the mesosystem.

The course-based practical experience microsystems are connected by the people who are involved in the interactions in the microsystems and include administration staff, lecturers, instructors, and peers.

Exosystem

The exosystem creates connections between the microsystems and settings that do not directly include the developing person. Bronfenbrenner (Bronfenbrenner, 2005) described that:

The exosystem encompasses the linkage and processes taking place between two or more settings, at least one of which does not ordinarily contain the developing person, but in which events occur that influence processes within the immediate setting that does contain that person (p. 148).

For a HE student the connection could be a professional accreditation body that sets standards of professional practice influencing content within a HE outdoor education course. The connection with the exosystem is felt through the content provided by the HE faculty lecturer which is part of the student's microsystem. Other

settings of influence for HE outdoor education students include government departments and industry organisations. These exosystem-based organisations do not directly engage with the developing student, rather, the activities and patterns within exosystem permeate to the microsystems.

Macrosystem

The macrosystem is the primary pattern of ideologies, beliefs, and environmental conditions that create the societal backdrop (culture and subculture) of the developing person. According to Bronfenbrenner (2005):

The macrosystem consists of the overarching pattern of micro-, meso-, and exosystem characteristics of a given culture, subculture, or other broader social context, with particular reference to the developmentally instigative belief systems, resources, hazards, lifestyles, opportunity structures, life course options and patterns of social interchange that are embedded in each of these systems. The macrosystem may be thought of as a societal blueprint for a particular culture, subculture, or other broader social context. (pp. 149-150)

For example, uncapping places in HE outdoor education courses in Australia is driven by educational, political, and economic ideologies relating to educational reform. This change has positively impacted HE students, as more places become available on courses, and negatively, as classes become overloaded.

Further examples are the Australian democratic system, constitution, statutory and common law. Community ideology regarding freedom of expression, thought, and lawful action. Equal rights and opportunity, religious beliefs, the dispersion of wealth, perspectives on natural resources, and the value of nature.

Process, Person, Context and Time

The second period of bioecological theory development involved the addition of concepts related to Process and Person to that of Context and Time (PPCT) (Bronfenbrenner & Morris, 2006). *Processes* are the proximal processes driving

developmental changes over time. Proximal processes are the bidirectional interactions between people, and their interactions with objects and symbols that make up the context (environment) (Griffore & Phenice, 2016).

The *Person* is identified as having three characteristics influencing the initiation and power of proximal processes to influence human development. First, a person's 'disposition' activates the proximal process, setting the area of development and the continuity. Second, the person's biological 'resources' of knowledge, experience, and abilities affect the power of the proximal processes during development. Thirdly 'demand' characteristics "invite or discourage reactions from the social environment that can foster or disrupt the operation of proximal processes" (Bronfenbrenner & Morris, 2006, p. 796).

Context is the foundation of ecological theory incorporating the micro-, meso-, exo-, and macrosystem, as illustrated in Figure 4 (Bronfenbrenner, 2005). The context is the environment within which the person resides and the proximal processes take place. *Time* is the final component of the bioecological theory influencing the contexts, person, and processes, in the past, present, and future (Bronfenbrenner & Morris, 2006). For example, time affects the natural environment through ecological processes, the biology of the individual through the stages of life and ageing, the proximal processes through exposure to a process by duration and frequency, and the layers of the ecology through the duration and frequency of interactions between components.

Bioecological Theory as it Applies to Higher Education Outdoor Education Students

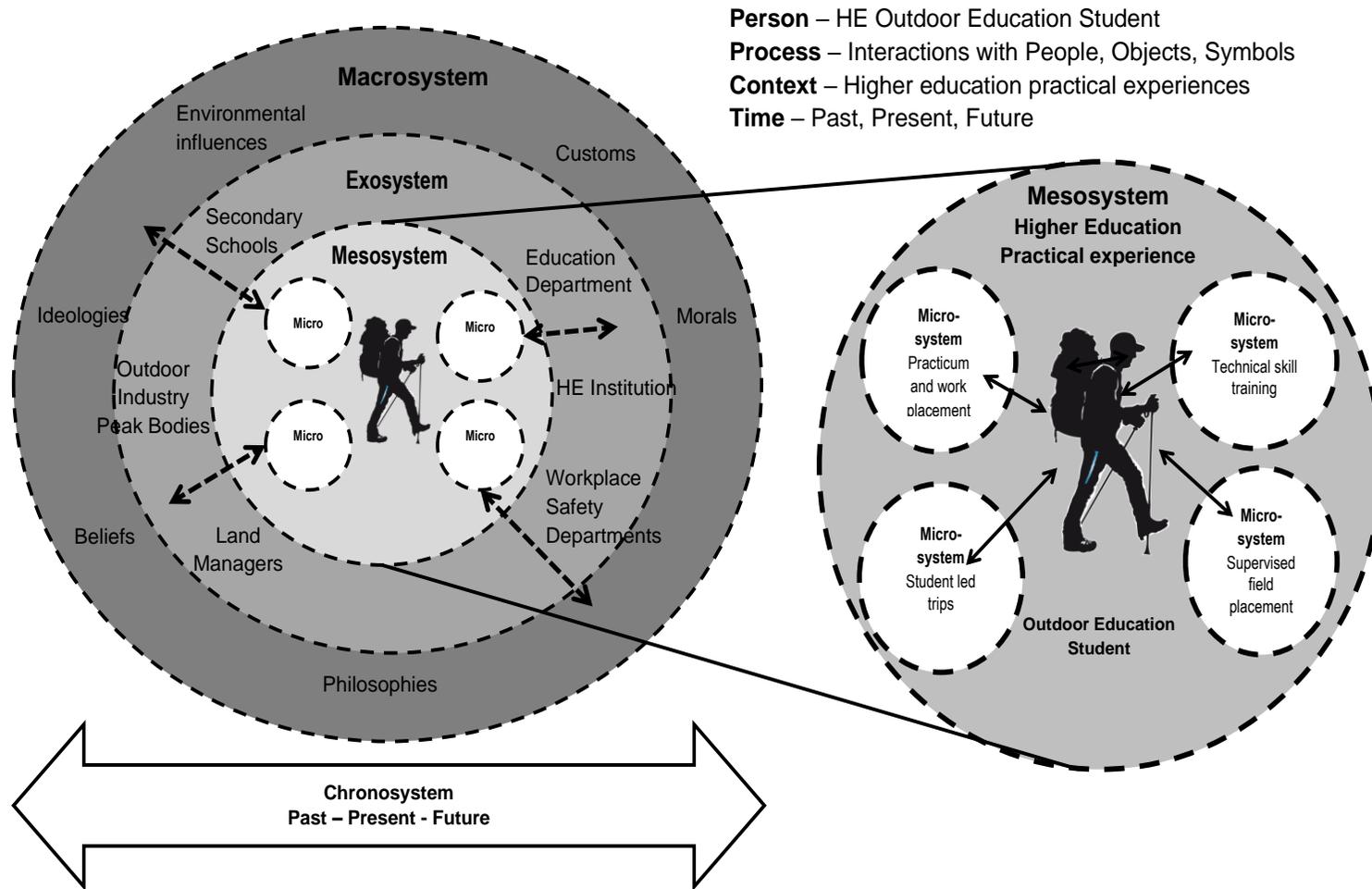
Bioecological theory has been applied to understand and inform government, community, and industry policy, strategy and practice in a range of contexts (Hodgson & Spours, 2009; Margolis, 2012; Weaver-Hightower, 2008), including adult learning (Carol, 2008; Skinner et al., 2022; L. Smith, 2011) and education (Bronfenbrenner,

1976; Härkönen, 2007). However, bioecological theory is yet to be applied to understand the development of HE outdoor education students.

An analytical framework, developed using bioecological theory, can be applied to HE outdoor education students. The ecological components in Figure 5 central to this research include the HE outdoor education student, course-based practical experience, the outdoor education sector, and broader society. At the centre is the HE outdoor education student who has reciprocal interactions with course-based practical experience microsystems. Proximal processes occur in these microsystems, affecting educational development. The proximal processes taking place through relationships with people include fellow HE outdoor education students, course coordinators, administration staff, teaching academics, sessional teaching staff, technical training course instructors, and workplace practicum employers and staff. The proximal processes of development are also facilitated through artefacts and symbols such as subject texts, learning management systems, outdoor equipment, workplace tools, risk management devices, and safety equipment.

Figure 5

Bioecological Theory as it May Apply to Higher Education Outdoor Education Students



The mesosystem connections between microsystems in course-based practical experiences occur through singular linkages via the student interacting with the various microsystems, and multiple linkages via the student's colleagues or university staff who move between the student's microsystems (Bronfenbrenner, 1979). The singular connection occurs when the student moves between two microsystems, such as when they are involved in a supervised field trip (microsystem 1), and technical skills training course (microsystem 2). The multiple connection occurs when a staff member who teaches in the supervised field trip also coordinates and teaches the technical skills training course.

The exosystem links settings outside the mesosystem with the microsystems of the student. Within the exosystem reside groups in the broader community, government organisations, social institutions, and employers all of whom affect the practical experience microsystems of the student (Rosa & Tudge, 2013). These groups might include, for example, the HE institution, state-based outdoor industry organisations, workplace standards organisations, government and their departments, and land managers where outdoor education takes place.

The HE outdoor education student's macrosystem includes societal worldviews and beliefs, "the overall societal culture in which individuals live" (Christensen, 2016, p. 23). Matters pertaining to environmental sustainability and protection, the role of education, religion and spiritual beliefs, consumerism, health, political processes, recreation and leisure, the professional status of the outdoor education industry, and national and international resources may be encompassed in the macrosystem.

The chronosystem affects the outdoor education student through time: past, present, and future. It is present at the micro-, meso-, and macrosystems layers. The individual changes biologically and developmentally over time (Bronfenbrenner & Morris, 2006). Temporal changes in the individual involved in an outdoor education course may include alterations in their physical fitness, changes in their personal characteristics, resilience, and outdoor living and travel skill acquisition. The settings

and processes of the person's ecosystem also change over time. For example, there has been a gradual shift in curriculum focus in outdoor education, away from teaching primarily outdoor skills and character development and towards environmental sustainability and eco-literacy (P. Brookes, 2003; Martin & Hewison, 2010).

Macrosystem world views may be shifting, including nature-based pedagogies, the rise of green politics, and climate change in the past, present, and future. The curriculum shift has subsequently seen a change in HE outdoor education students' knowledge and skills requirements.

Bioecological Theory and the Current Study

Bioecological theory was applied to the current study at two points, in the methodology and the discussion of findings. In the methodology bioecological theory was employed in Phase 1 and Phase 2. In Phase 1, the document review, bioecological theory was used to guide the selection of documents from the exosystem of HE outdoor education graduates for qualitative analysis. In Phase 2, bioecological theory was applied to inform the construction of the interview guide which would explore the ecology of influences affecting HE outdoor education graduate knowledge, skills, and practical experience. Through studying the exosystem, insight into settings, linkages, and processes that do not ordinarily contain the HE student yet influence development can be gained. Bioecological theory was then applied during the discussion to interpret and describe the significance of findings, inform frameworks on the knowledge, skills and practical experience required of HE outdoor education graduates and to answer the research questions directly.

Bioecological Theory Strengths and Weaknesses

Bioecological theory has been a prominent framework in the field of developmental psychology, providing valuable insights into the complex interactions between individuals and their environments (Bronfenbrenner, 1979). It was chosen as

the framework for the current study due to its comprehensive nature and relevance to understanding the multilayered influences on human development.

One strength associated with bioecological theory is its emphasis on the ecological perspective, recognising the importance of various environmental systems that shape an individual's development (Bronfenbrenner & Evans, 2000). The theory acknowledges the interconnectedness between different systems, such as the microsystem, mesosystem, exosystem, and macrosystem, and their impact on an individual's experiences and development (Bronfenbrenner & Morris, 2006). This holistic approach provides a valuable framework for studying the complex dynamics between individuals and their environments.

Furthermore, bioecological theory highlights the dynamic nature of development and the influence of time in shaping individuals' experiences (Bronfenbrenner, 1979). The theory emphasises the importance of understanding developmental processes across different periods and how individuals' interact with their environments changes over time (Shaffer & Kipp, 2013). Adding depth and richness to understanding human development, this temporal dimension enables researchers to examine the dynamic interplay between individuals and their changing environments.

While this theory has several strengths, it is not without its weaknesses. One criticism is its heavy reliance on ecological factors, often overshadowing other important individual and psychological factors contributing to development (Vygotsky & Cole, 1978). While the theory recognises the influence of the microsystem, which includes immediate settings such as family and peers, it does not fully delve into the internal cognitive processes and psychological mechanisms underpinning human development (Bronfenbrenner & Morris, 2006). This limitation restricts a comprehensive understanding of the intricacies involved in the development of HE outdoor education students.

In addition, bioecological theory does not extensively address the subjective wellbeing and personal experiences of individuals within their ecological contexts.

While the theory acknowledges the influence of social systems, it places less emphasis on the subjective aspects of development, such as individual aspirations, motivations, and happiness (Oishi et al., 2001). This omission limits the theory's ability to fully capture the subjective experiences and psychological wellbeing of HE outdoor education students in the context of their ecological environments.

Despite these limitations, bioecological theory aligns with the goal of understanding the multifaceted influences on HE outdoor education students. The theory's focus on the interplay between individuals and their environments, and recognition of the importance of time and developmental processes, provides a suitable foundation for investigating the complex dynamics of what is required for HE outdoor education students' experiences within their ecological contexts.

Chapter Review

The bioecological theory of human development (Bronfenbrenner & Morris, 2006) has been presented in this chapter as the theoretical framework for this study. The chapter discussed the application of bioecological theory as it applies to HE outdoor education graduates while they are a student in an outdoor education course. It also presented the application of bioecological theory within the current study.

The following chapter of this thesis, the methodology, presents the mixed methods approach employed to investigate the research questions. The methodology chapter justifies the methodological choice by linking to relevant literature on data collection and analysis procedures.

Chapter 4. Methodology

The methodological approach, rationale, and mixed methods applied to this study are presented in this chapter. The purpose of the study was to establish the knowledge, skills, and practical experience required by HE outdoor education graduates in Australia to gain employment domestically. Three research questions were posed. First, what knowledge and skills are required by Australian HE outdoor education graduates? Second, what is the nature of the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills? Third, how can these findings inform the HE sector in outdoor education courses and the outdoor education sector on knowledge, skills and practical experience?

Mixed methods allowed the researcher to use both qualitative and quantitative methods (Almalki, 2016). The mixture of methods allows for the complexity of phenomena to be explored through qualitative approaches while also providing scope for measurement through quantitative approaches, leading to a more complete picture of the area being studied (Ivankova & Plano Clark, 2016). For this study, mixed methods supported the complexity of knowledge, skills, and experience for HE outdoor education graduates identified in the literature to be explored, while addressing the pragmatic need to quantify requirements for the HE and outdoor education sectors.

Using the mixed methods exploratory sequential design framework of Creswell and Plano Clark (2018), three key phases of the methods process were established to answer the research questions. Phase one involved a qualitative analysis of documents sourced from the community, industry, and government on the knowledge, skills, and practical experience required of HE outdoor education graduates. During Phase 2, semi-structured interviews were conducted with industry professionals to explore the perceptions of outdoor education practitioners according to the themes identified in the document analysis. The merged results of these two phases informed the Phase 3 quantitative design. To support the generalisation of the qualitative phase,

an online questionnaire was designed and distributed to outdoor education practitioners. The Phases 1, 2, and 3 results were then used to answer the three research questions.

Mixed Methods

Mixed methods involve the application of qualitative and quantitative methods to explore a phenomenon. Bryman (2016) identified that mixed methods require the research methods to support each other, not just using them alongside each other. Data derived from mixed methods needs to be jointly informative from qualitative and quantitative perspectives (Creswell & Plano Clark, 2018).

The qualitative component of mixed methods research derives from subjective (naturalistic) approaches. Namely, through qualitative research, researchers' concerns lie with the direct experiences of people in specific contexts (Cohen et al., 2017), and they are encouraged to produce vibrant and detailed accounts of phenomena, termed thick descriptions (Bryman, 2016; Punch & Oancea, 2014). Thick descriptions arise from the observation and recording of human actions in ways that recognise context and social activity. By placing the human phenomenon in context, it can then be clearly understood by an outsider, contrasting with the quantitative approach focusing on measurement.

The quantitative component of mixed methods research derives from objective (empirical) approaches. Through quantitative research, researchers conceptualise reality through the quantification of data during collection and analysis, and the measurement and comparison of variables (Bryman, 2016; Punch & Oancea, 2014). Quantitative research encourages a focus on measurement and causality, and on the generalisation and replication of results (Bryman, 2016).

While qualitative research is grounded in a naturalistic and subjective approach, and quantitative research follows an empirical and objective approach, mixed methods research adopts a pragmatist perspective. Pragmatism, as a philosophical stance,

places a strong emphasis on the practical aspects of research and seeks to determine the most suitable combination of methods to gain comprehensive insights into the phenomena under investigation (Cohen et al., 2017; Creswell & Plano Clark, 2018). Pragmatism recognises that different research questions and contexts may require varying degrees of objectivity and subjectivity, and in the case of mixed methods, both approaches can be integrated to provide a more nuanced understanding.

Pragmatism emphasises the importance of aligning research methods with the specific goals and objectives of the study. It recognises that no single method can adequately capture the complexity of real-world phenomena. Instead, a pragmatic approach involves selecting and integrating methods that best serve the research purpose, taking into account the strengths and limitations of each approach (Creswell & Plano Clark, 2018; Tashakkori, 2010). Allowing researchers to leverage the strengths of qualitative and quantitative methods and address the limitations inherent in each enhances the overall rigour and comprehensiveness of the research findings.

One of the key advantages of adopting a pragmatist approach in mixed methods research is the flexibility it offers. Pragmatism encourages researchers to adapt their methodological choices to the unique characteristics of the research problem and the specific context in which it is situated. By considering the practical implications and the specific research needs, a pragmatic stance allows for the integration of objective and subjective approaches as deemed necessary Johnson (Johnson, 2010; Tashakkori, 2010). Researchers, through flexibility, draw upon diverse data sources, such as interviews, surveys, observations, or archival records, to capture different dimensions of the phenomena and gain a more holistic understanding.

Strengths and Challenges

To enhance the rigour of data, researchers should be aware of the strengths and challenges associated with mixed methods. The integration of quantitative and qualitative research methods is driven by the central rationale that it combines their

respective strengths while offsetting their weaknesses (Creswell & Plano Clark, 2018; Ivankova & Plano Clark, 2016; Punch & Oancea, 2014). Mixed methods research offers several identifiable strengths that contribute to its effectiveness in generating comprehensive insights. Firstly, it provides researchers with access to a broader range of evidence and tools for data collection compared to the limitations of using quantitative or qualitative methods in isolation (Ivankova & Plano Clark, 2016). By incorporating both approaches, researchers can gather a more diverse and comprehensive set of data, enabling a deeper understanding of the research topic.

Secondly, mixed methods research enables the exploration of research questions that cannot be fully addressed by employing either quantitative or qualitative methods alone (Creswell & Plano Clark, 2018). For instance, the integration of semi-structured interviews and online questionnaires allows researchers to examine whether participants' views from different sources converge or diverge on a particular topic. Integrating methods facilitates a more nuanced understanding of complex phenomena and enhances the validity of research findings.

Moreover, mixed methods research encourages the application of multiple paradigms, such as positivism, postpositivism, critical theory, or constructivism, through approaches like pragmatism (Punch & Oancea, 2014). By embracing diverse philosophical perspectives, researchers can select and combine quantitative and qualitative methods aligning with their research goals and the specific context of their study.

Furthermore, mixed methods research demonstrates practicality in its application (Creswell & Plano Clark, 2018). It acknowledges the importance of utilising the most appropriate instruments and methods to address research questions, reflecting the natural inclination of individuals to employ diverse approaches in their quest for understanding the world. This practicality enhances the relevance and usefulness of research outcomes in informing decision-making and practice.

Researchers have also identified several challenges associated with mixed methods (Almalki, 2016; Creswell & Plano Clark, 2018; DeCuir-Gunby & Schutz, 2017; Padgett, 2012). Mixed methods demand more time and resources than undertaking a qualitative or quantitative study alone (DeCuir-Gunby & Schutz, 2017). Researchers must consider the time period available for the design, collection, and analysis of the qualitative and quantitative data and for the systematic and meaningful integration of the data and findings (DeCuir-Gunby & Schutz, 2017).

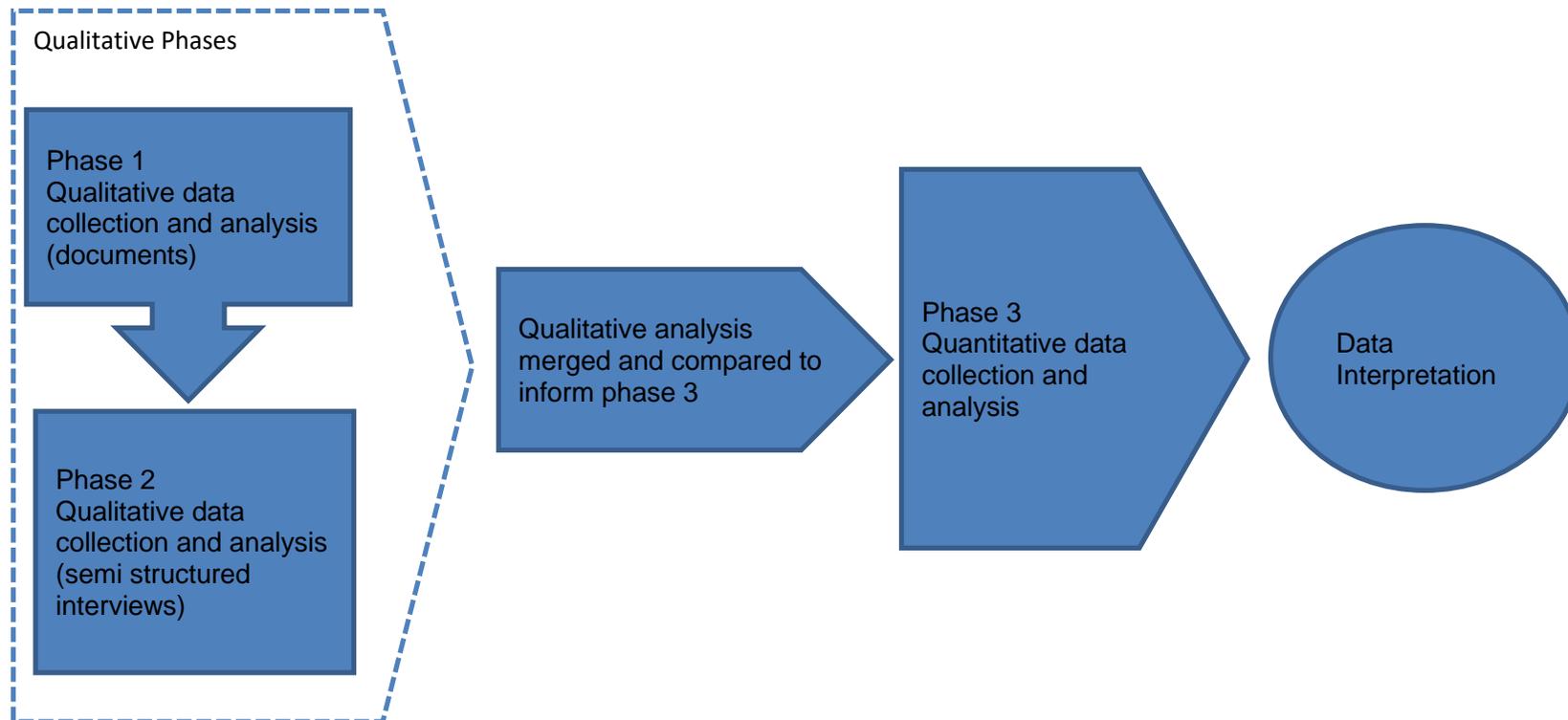
Mixed methods also require researchers to have skills in qualitative and quantitative methods and techniques (Almalki, 2016). Researchers must either already possess, or develop, the required knowledge and skills to design, conduct, and report on both qualitative and quantitative method phases. Another challenge of mixed methods is managing the rhythms and phases of qualitative and quantitative research (Padgett, 2012). Qualitative research can be iterative, for example revisiting the field to achieve data saturation with interviewees, while quantitative research proceeds in a linear fashion. The challenge arises for a researcher in managing the overlapping time and process demands of a research study (Padgett, 2012). The strengths and challenges of mixed methods were considered when choosing and developing a design for this study.

Mixed Methods Design

Mixed methods research can be undertaken by selecting a method that best fits the research problem from a range of designs, including convergent, explanatory sequential, and exploratory sequential (DeCuir-Gunby & Schutz, 2017). As explained by Creswell and Plano Clark (2018), convergent design analysis compares and integrates results from separate and concurrent, quantitative and qualitative studies. Explanatory sequential design occurs in two distinct sequential phases, commencing with quantitative and followed by qualitative work. The qualitative phase attempts to explain any unexpected results found in the quantitative phase (Bergman, 2008). The

exploratory sequential design typically commences with a qualitative phase. The results of the exploratory qualitative phase are then used to develop a quantitative instrument, such as a questionnaire (Creamer, 2018). After the collection of quantitative data, the researcher then analyses how the quantitative results build on or clarify the qualitative results.

An exploratory sequential design was applied to the current study (Figure 6). The qualitative component of the research involved the collection of data during two phases—a document review, and semi-structured interviews—to explore the new phenomena. After data collection, qualitative Phases 1 and 2 converged when the findings were compared and integrated (Creswell, 2013). These compared and integrated findings informed the development of a quantitative questionnaire (Creswell & Plano Clark, 2018). The purpose of Phase 3 was to use quantitative methods (questionnaire) to generalise the findings from the qualitative phases to a larger and broader population.

Figure 6*Exploratory Sequential Design*

Note. Adapted from Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research*. SAGE Publications.

Geographical Design

Australia is a geographically large country with six states and two territories. The purpose of this study was to establish the knowledge, skills, and practical experience required by HE outdoor education graduates in Australia to gain employment domestically. The study design required an outcome which provided a whole of country perspective and considered the size and accessibility of the population. To achieve this, Phases 1 and 2 of this study focused on the state of Victoria. Phase 3, the online questionnaire, was distributed across Australia to generalise the qualitative Victorian findings to a larger and broader national population.

The researcher identified that Victoria provided a robust base from which to establish the knowledge and skills and practical experience required of HE outdoor education graduates in Australia. Victoria has a quarter of Australia's population 25.5% (second only to New South Wales 31%) (Australian Bureau of Statistics, n.d.-b). Victoria has a long history of formal school-based outdoor education from early inception in the 1940s until recently (Polley, 2021a), meaning that outdoor education is well established in the Victorian community. Victoria implemented the first formal outdoor education school curriculum in Years 7 to 10 in 1989, and in VCE (Years 11–12) in 1992, making Victoria at the time “more formally developed [in outdoor education] than any other Australian state or territory” (Lugg & Martin, 2001, p. 42). Over the last 20 years outdoor education continues to be provided in Victorian schools through camps, excursions, and as part of the VCE (Department of Education and Training, n.d.-b; Victorian Curriculum and Assessment Authority, 2016). In regards to outdoor educator preparation, in comparison to the other states and territories “Victoria has many Bachelor degrees that specialise in outdoor education” (Polley, 2021a, p. 77), meaning that graduates from HE are already present in the Victorian outdoor education sector.

Ethical Considerations in Mixed Methods Research

Mixed methods research has gained prominence in various fields for its ability to provide a comprehensive understanding of complex phenomena (Creswell & Plano Clark, 2018; Tashakkori, 2010). While researchers focus on methodological rigour and validity, it is essential to recognise and address the ethical considerations inherent in mixed methods research (Onwuegbuzie & Collins, 2007). Key ethical considerations include obtaining informed consent, ensuring privacy and confidentiality, fostering equitable researcher-participant relationships, integrating and interpreting data, disseminating findings, and addressing power dynamics and marginalised voices (Bryman, 2016; Creswell & Plano Clark, 2018; Johnson & Onwuegbuzie, 2004; Mertens, 2019; Tashakkori et al., 2020).

Obtaining informed consent represents a crucial ethical principle in research involving human participants. Researchers should clearly communicate the purpose, procedures, risks, and benefits of participating in both qualitative and quantitative components to participants (National Institutes of Health, 2018). Participants should have the opportunity to ask questions and make an informed decision about their involvement. Informed consent forms should explicitly state the voluntary nature of participation, the right to withdraw at any time, and the handling of personal information. Addressing challenges in obtaining informed consent when using existing quantitative data or accessing archival sources is also necessary (Hesse-Biber & Johnson, 2015).

Mixed methods research often involves collecting sensitive information through interviews, surveys, or observations. Researchers must ensure the privacy and confidentiality of participants' data by employing appropriate measures. They should safeguard and store identifying information securely, with limited access granted only to authorised personnel. Furthermore, researchers should inform participants about the steps taken to protect their data and ensure that data are anonymised or de-identified

during analysis and reporting to maintain confidentiality (American Psychological Association, 2017). Additionally, researchers should consider the potential risks of re-identification when combining qualitative and quantitative data sources (Flick, 2022).

Building and maintaining a respectful and equitable relationship with participants constitutes a crucial aspect of mixed methods research. Researchers need to establish rapport and trust with participants, emphasising their rights and wellbeing throughout the research process. It is essential to address power dynamics and potential conflicts of interest, ensuring that participants' perspectives are valued and represented (Creswell & Plano Clark, 2018). Researchers need to be mindful of potential emotional or psychological impacts on participants and provide appropriate support or referrals if necessary. Moreover, researchers need to acknowledge their own values and biases and actively engage in reflexivity to minimise their influence on data collection and analysis (Bryman, 2016).

Integrating qualitative and quantitative data in mixed methods research entails analysing and interpreting multiple data sources. Ethical considerations in this phase include maintaining the integrity and transparency of the data, ensuring accurate representation, and avoiding biased interpretations. Researchers need to acknowledge potential conflicts or contradictions between qualitative and quantitative findings and discuss the limitations and strengths of each approach (Tashakkori et al., 2020). Respecting the participants' voices and perspectives during data integration is paramount to maintain the ethical integrity of the study. Researchers should be transparent about the decisions made in the data integration process and provide justifications for their choices (Onwuegbuzie & Johnson, 2006).

Ethical considerations extend to the dissemination of research findings in mixed methods studies. Researchers need to be mindful their findings are reported accurately, without misrepresentation or selective reporting that could potentially harm participants or perpetuate stereotypes. Involving participants in the interpretation and dissemination process can enhance the validity and relevance of the findings (Johnson

& Onwuegbuzie, 2004). Researchers should clearly communicate the limitations and generalisability of the findings to prevent misinterpretation or misapplication (Creswell & Plano Clark, 2018). Transparency in reporting allows stakeholders to assess the trustworthiness and reliability of the study.

Mixed methods research offers the opportunity to amplify the voices of marginalised or underrepresented populations. Researchers need to be mindful of power dynamics and actively seek to address inequalities in research processes and outcomes. This includes engaging in participatory approaches and involving participants in the research design and decision-making processes (Mertens, 2005). Researchers need to promote social justice and inclusivity in research practices to ensure equitable representation of marginalised voices in data collection, analysis, and reporting.

Ethical considerations enable the protection of participant rights and wellbeing and maintain integrity and validity of the study. By addressing these ethical considerations, mixed methods research can be conducted that contributes to knowledge while respecting the dignity and rights of those involved.

Ethical Approval

As required under research guidelines outlined by the Victoria University Human Research Ethics Committee, and on the basis that this study involved research on humans, ethical clearance was sought. Approval to commence the research for Phase 2, semi-structured interviews, was granted on 16th September 2013 (VU Ref No: HRE 13—191). A separate application was granted for Phase 3, online questionnaire, 10 June 2015 (VU Ref No. HRE 15—049).

Qualitative Research Phases

Qualitative methods were applied to Phases 1 and 2 of the research. Phase 1 comprised a qualitative document review and involved the systematic analysis of

documents found through a web search and selection process—phase 2 comprised semi-structured interviews.

Phase 1: Document Review

The document review addresses the first two research questions: what knowledge and skills are required by Australian HE outdoor education graduates, and what is the nature of the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills? In addition to providing data for analysis the document review supported further research phases. Information elicited through documents indicated themes for further exploration in the remaining phases of the study (Tight, 2019). For example, Goldstein and Reiboldt (2004) studied the use of services by families living in poor communities and used a document review to develop interview questions. Similarly, the results of the documents reviewed in the current study informed the development of the Phase 3 questionnaire.

Several strengths exist associated with conducting a document review. Bowen (2009) and Yin (2014) suggest that documents are readily available for researchers, within both state and private organisations. Documents are cost effective, particularly when primary data collection is not financially feasible (Tight, 2019). For example, in the current study the researcher collected state and private organisations documents via their websites, which were accessible and cost-effective collection methods. Unlike people who may be influenced by the research process, documents are static artefacts which remain unaffected (Yin, 2014). Data collected through documents is less prone to influence by the researcher (Bowen, 2009). Document reviews are easily repeatable because documents are a stable source (Tight, 2019). Documents can be exact in their detail, it is this detail that makes them advantageous in the research process (Bowen, 2009). Documents can also provide a coverage of time, recording not only historical events but also multiple events and processes simultaneously (Bowen, 2009; Tight, 2019; Yin, 2014).

Document reviews have limitations. Biased selectivity may result during the collection of documents (Payne & Payne, 2004). For example, in an organisational context, biased selectivity may be evident when an organisation's policies and procedures represent the bias of an organisational unit (e.g., operations) rather than the broader organisational principles. Furthermore, retrieving data can sometimes become an issue when a document is difficult to retrieve or access is deliberately blocked (Bowen, 2009). Finally, insufficient detail in a document's contents can have the outcome of not fully answering the research question (Tight, 2019). To counter these limitations, the researcher addressed biased selectivity and insufficient detail by selecting a large sample of documents from multiple organisations. Retrieving data was partly addressed through storing a copy of the documents on electronic file.

In addition to the limitations previously mentioned, it is essential to address the issue of researcher/reader bias and the influence of cultural perspective on document interpretation. It is recognised that documents, as static artefacts, may appear objective and unaffected by the researcher. However, it is important to acknowledge that researchers bring their own biases, cultural understanding and perspectives to the interpretation of documents, which can significantly impact the analysis and understanding of the data (Hesse-Biber & Leavy, 2010). Each person may interpret the same document differently based on their unique perspectives, potentially leading to variations in the analysis and conclusions drawn from the data (Babbie, 2020).

Furthermore, the lens through which we read and interpret documents is shaped by our cultural perspective. Cultural perspectives evolve over time, reflecting shifts in societal norms, values, and historical understandings. Reading a document from the past in the present may result in different interpretations due to the changing cultural context. For instance, societal attitudes and beliefs regarding race, gender, and social justice have evolved over time, which can significantly impact how documents from different eras are understood and analysed (Sue et al., 2007). It is crucial to

acknowledge this dynamic nature of cultural perspective and its potential influence on document interpretation.

To address these challenges, researchers must be aware of their own biases and actively engage in reflexivity throughout the research process (Denzin, 2017). Reflexivity involves critically examining one's assumptions, values, and perspectives that may shape the interpretation of documents. By acknowledging and transparently discussing their biases, researchers can strive for a more objective and balanced data analysis. Additionally, involving multiple researchers with diverse backgrounds and perspectives can help mitigate the impact of individual biases (Creswell & Miller, 2000). Collaborative discussions and peer review processes can provide valuable insights and ensure a more comprehensive analysis of the documents. Engaging in dialogue with peers from different disciplines and seeking input from individuals with different cultural perspectives can further enrich the interpretation and understanding of the data (Lincoln & Guba, 2000).

Document Collection

Documents for a qualitative review can be gained from a range of sources including private documents from individuals, the federal government, the state government, and private organisations (Bryman, 2016). Documents for this research were industry-based and derived from official Federal and Victorian state government sources including curriculum documents (primary and secondary schooling), policy statements, and nongovernment national and Victorian organisations including industry standards and guidelines.

Each document was selected based on its connection to the knowledge, skills, and practical field experience required of outdoor educators. Using insights from the literature review and applying bioecological theory, a guide was created to inform an internet search and document selection. The document selection guide, outlined in Table 5, comprised three components: first, the six outdoor education body of

knowledge themes (Table 2); second, the job role titles associated with outdoor education identified in Chapter 2. Literature Review (Australian Industry and Skills Committee, n.d.; Marsden et al., 2012; Marsden Jacob Associates, n.d.-b) and third, the bioecological context relating to outdoor education graduates (Figure 5). To provide geographical context the terms Australia and Victoria was added to each search.

Table 5

Document Selection Guide

Component	Source	Theme/context
Body of knowledge themes	Chapter 2 Literature review, Table 2	Outdoor pursuits (adventure activities) Journey/expedition Environmental science Outdoor leadership Place-based knowledge Human/nature relationships
Job role titles	Chapter 2 Literature review	Outdoor educator Outdoor leader
Bioecological context	Chapter 3 Bioecological context—Figure 3.2	Outdoor education employer Outdoor industry body Government departments (education, land managers) Community organisation

Three steps were taken to select documents using the guide adapted from Altheide and Schneider (2013). The first step involved searching for publicly available documents online. Documents were searched on the Google search engine using the themes identified in Table 5 as search terms. Google was chosen for this study over other library and academic databases due to its vast coverage of academic and general content as well as its ease of use (Brophy & Bawden, 2005). The second step involved reading each document and scanning for connection to the knowledge, skill, and practical experience of HE outdoor education graduates and identifying the bioecological context. The document was not analysed if a connection to the knowledge, skills and practical experience of outdoor education graduates could not be

made. The third step involved going back to the primary source of the document and visiting the website to search for further documents relevant to the study.

An example of the selection process follows. First, the search term *outdoor adventure activities Australia and Victoria* was entered in the Google search engine and the results listed the Safety Guidelines for Education Outdoors (Department of Education and Early Childhood Development, n.d.-a). These guidelines are produced by the Victorian State Department of Education and Early Childhood Development, which issues directives regarding the knowledge and skills required of outdoor educators. Second, using the document selection guide, the researcher reviewed the Safety Guidelines for Education Outdoors for relevance to the study; if relevant, these were downloaded and saved. Third, the researcher searched the Department of Education and Early Childhood Development website for further documents, using the themes in Table 5.

Document Analysis

The Phase 1 document review involved the systematic analysis of documents captured through the web search and selection process. Bryman (2016) outlines that, due to the nature of qualitative research, the reliance on text in the form of interview transcripts, observations, documents, and field notes can rapidly generate large and unwieldy databases. Analysing qualitative data involves making sense of this large volume of material by noting themes, categories, irregularities, regularities and patterns (Cohen et al., 2017).

Open coding, axial coding, and selective coding were employed (Babbie, 2020) to organise, account for, and make sense of the data (Cohen et al., 2017). Coding is the indexing of data coupled with a system of retrieval (Babbie, 2020; Bryman, 2016). Whereas standardisation is an essential component of quantitative analysis, individual coding units in a qualitative analysis may vary in length, from as small as a single word or as large as a whole document (Babbie, 2020; Bryman, 2016).

Qualitative Analysis Software

NVivo 11 software was used to assist with the coding process. Most computer software for qualitative analysis is based on a code and retrieval basis. Using software, the computer takes over the previously manual tasks of photocopying documents, cutting chunks of text, filing, notation and cross-referencing (Bryman, 2016). Several researchers have expressed concern that qualitative analysis software can draw researchers towards processes that cause the fragmentation and quantification of data, and the consequent loss of contextual meaning (Fielding & Lee, 1998; Hesse-Biber, 2004). However, other authors have identified benefits in using qualitative analysis software, including its capacity to manage large volumes of data, create coding structures, keep detailed and well organised memos, create visual representations of data, and map relationships between codes (Babbie, 2020; Bryman, 2016; Cohen et al., 2017). Based on the large volumes of data expected to be generated from the document review of the current research, the NVivo 11 software was used to code, create a code tree, record memos, and create visual representations of the data.

The Coding Process

Open coding was the first step in examining and labelling data, which is then grouped into categories (Bryman, 2016). The first stage in open coding was to read the entire document to become aware of the storyline. For the purpose of this study, this process of immersion (Hsieh & Shannon, 2005) was achieved during the document selection process; each document was read for suitability of inclusion in the research. Each document was then imported into the NVivo 11 software. The documents were read again and the software was used to label each keyword, phrase, paragraph or larger chunk of text (Bryman, 2016) related to the knowledge, skills, or practical experience required of outdoor education graduates. For example, canoe guiding on flat water was identified as a skill and labelled under the open code Canoeing Guide Flat Water. As the codes and coding framework emerged from the data, subsequent

encounters with the same words or themes were coded using that emerging framework. After the initial open coding process, codes were reviewed to identify words, themes, or phrases describing the same phenomena. Bryman (2016) advises that where there is a relationship, it is sensible to code data using concepts or categories found in the existing literature. Open coding stopped when emergent codes ceased and inductive thematic saturation was achieved (Saunders et al., 2018).

Step 2 in the coding process involved building a coding tree (Hsieh & Shannon, 2005) that collapsed the numerous open codes identified into axial codes. This axial coding process aimed to make connections between codes to recognise core concepts within the study (Babbie, 2020). First, relationships between open codes are identified, and these codes are grouped into meaningful clusters (Hsieh & Shannon, 2005). For example, the open codes of Canoeing Guide Flat Water and Canoeing Guide Grade 2 were grouped under the Canoeing/Kayaking code. The process of relationship identification and clustering continued until axial codes were identified. Axial codes were identifiable as they maintained a connection with the raw data and the phenomena under investigation (Babbie, 2020).

Credentialing counting based on frequency of data (counts of open coding) generating an axial code was applied to determine an axial code's inclusion in this study (Hannah & Lautsch, 2011). Hannah and Lautsch (2011) explain that credentialing counting "demonstrate[s] why one should have confidence in the findings of a qualitative analysis" (p. 16) and may be applied to the frequency of data or the sources of data. However, the number of counts required to determine the representativeness of a code is vague in the research, being left to the researcher's discretion (Pratt, 2008). Representativeness of an axial code in the documentary data for this study was determined as a data frequency of eight references or above. Below eight references the number of axial codes significantly increased making the axial codes cumbersome for analysis and reporting. Axial codes with less than eight references were reviewed

and collapsed into a new axial code. For example, the axial code *Standards* and the axial code *Guidelines* becomes the axial code *Standards and Guidelines*.

Selective coding, the final step of the coding process, aimed to identify the central or core codes of the research; the codes with which all other codes have a relationship (Babbie, 2020). Axial codes were compared, and relationships with new higher-level core codes were identified. Core codes are often referred to as themes or core themes. Cohen et al. (2017) explain that the relationships between the core and all the other codes become clear when a core code is identified. A storyline can be developed from the core code, through the data and back to the relationships in the axial coding model (Creswell, 2013). For example, the axial code of canoeing/kayaking was placed under the core code of Outdoor Leaders Adventure Activity Knowledge and Skill Requirements.

To ensure reliability and validity, raw data cross-checking was undertaken (using six documents) by the research supervisors and the researcher, generating data independently. The data was then cross-checked for consistency until the internal reliability of data collection was assured (Bryman, 2008).

Phase 2: Semistructured Interviews

The semistructured interviews were used to explore the first two research questions: what knowledge and skills are required by Australian HE outdoor education graduates, and what is the nature of the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills? Semistructured interviews were chosen because their format allowed for further exploration of issues or themes that emerge during the interview (Bryman, 2016).

Interview Guide

Interview guides were developed for two groups of interviewees to direct the conversation towards the research questions under investigation. These guides provided a logical progression through key topics for the researcher and participant.

Key topics in the guides were developed from the literature reviewed including the theoretical framework, and from the selective codes identified in Phase 1, the document review. The guides provided introductory questions regarding the demographic, training/education background, years of experience and current role of the interviewee. These introductory questions were followed by semistructured questions regarding what knowledge, skills and practical field experience outdoor educators working in the outdoor education sector need to possess. Finally, questions about the link between outdoor educators' knowledge and skills and practical field experience were included. Group 1, the experts, were also asked questions regarding the history of outdoor educator education and training.

The research supervisor, cosupervisor, and researcher peer reviewed the interview guides for consistency between themes identified in the literature review and documentary analysis. The interview guides were then piloted with two volunteers who were in senior outdoor education positions in Australia. Feedback from the pilot was used to update the interview and question structure; namely blocking the questions under major themes and allocating a time duration to each theme. The final interview guides are available in Appendix B and Appendix C.

Interview Sample

Outdoor education sector members were purposefully selected using two criteria, creating two groups (Bryman, 2016). Interviews were conducted until theoretical saturation was reached (Saunders et al., 2018). Senior outdoor education industry sector experts (Group 1) were interviewed to provide historical perspectives and current peak industry knowledge regarding outdoor education leadership education in Australia. Outdoor education sector managers (Group 2), working for outdoor education providers with a client base of at least 70% schools, were interviewed to provide an external perspective on the knowledge, skills, and practical experience required of outdoor educators in their organisation.

Group 1 Selection Criteria. Group 1 participants consisted of senior outdoor education sector experts. These experts were selected based on a minimum of 20 years' industry experience and knowledge of outdoor education provision in Australia. Participants were committee members for outdoor education organisations, outdoor leader training, residential camping, and outdoor recreation state peak bodies.

Group 2 Selection Criteria. Group 2 participants consisted of outdoor education sector managers (managers). The participants were selected based on a minimum of 5 years industry experience, currently being employed in a managerial role with responsibility for human resourcing and recruitment, and representing one of the three common outdoor education delivery styles (single-day one-off experience, multiday residential campsite, and multiday bush camping journey) (Priest & Gass, 2018).

Recruitment of Participants

Prospective Group 1 participants were recruited via the public contact of their current or previous peak outdoor industry organisation. The peak outdoor industry organisations were selected through the listing of bodies identified by the Government of Victoria as peak industry bodies, which was obtained from the Department of Planning and Community Development (DPCD) and the Department of Education and Early Childhood Development (DEECD). Information outlining the purpose of the study and the selection criteria was provided to the organisation's public contact (Appendix D). Participants were then contacted by the organisation's public contact and were asked to respond to the researcher directly. Respondents to the researcher's email were then sent a letter of invitation (Appendix E, Appendix F).

Prospective Group 2 participants were contacted through an open invitation email sent by Outdoors Victoria and the Australian Camping Association. The email outlined the purpose of the study, selection criteria (Appendix G, Appendix H) and

asked prospects to respond to the researcher directly. Respondents to the email were then sent a letter of invitation (Appendix E, Appendix F).

Once participants had expressed an interest in becoming involved, the researcher sent them each two documents: the Information to Participants Involved in Research (Appendix I), and the Consent Form for Participants Involved in Research (Appendix J). These documents provided detailed information regarding the study, a form requesting their consent to participate, and the contact details of the researchers involved. The participants were asked to sign and return the consent document prior to the interview. Once consent was obtained, the researcher contacted each participant by telephone to organise a time and venue for the semistructured interview to take place.

Data Collection

At the commencement of each semistructured interview, the participant was provided with an opportunity to ask questions before verbally confirming their previous consent to participate. Verbal consent was obtained to ensure the participant had not changed their mind. Each interview took approximately one hour and was conducted at the participant's location of choice, including Victoria University or a quiet office room.

The interviews were audio recorded, transcribed verbatim, and transcription was checked for accuracy. Interview data was de-identified to maintain the confidentiality of participants and their organisations. Transcripts were sent to the participant to be member-checked for accuracy (Keeble, 2020; Onwuegbuzie et al., 2016). The member-checking process involved returning the transcript and initial analysis to the participants to ensure they agreed with the identified themes. The participants did not identify any transcription errors or request theme amendments.

Analysis

Similar to Phase 1, a coding process of open coding, axial coding and selective coding was employed (Babbie, 2020) to organise, account for, and make sense of the

data (Cohen et al., 2017). As per Phase 1 credentialing counting based on frequency of data was applied to determine inclusion of an axial code in this research (Hannah & Lautsch, 2011). Axial codes with less than eight references were reviewed and collapsed into a new axial code. Credentialing counting was also applied to the number of interviewees who contributed to an axial code. A minimum of three interviewees was determined by the researcher as the cut off for an axial code as it represented agreement between 50% of the interviewees. Axial codes contributed to by less than three interviewees were reviewed and collapsed into a new axial code.

NVivo 11 software was employed to assist with this process. Each interview was transcribed and coded and then another interview was conducted and coded. Once data became repetitive analysis ceased due to theoretical saturation (Saunders et al., 2018).

As per Phase 1, to ensure reliability and validity, using interview transcripts cross-checking data was conducted by the research supervisors and the researcher. Codes were generated independently by each person and then cross-checked for consistency until the internal reliability of data collection was assured (Bryman, 2008).

Qualitative Data Comparison and Merging

Findings from Phases 1 and 2 were compared and merged at the conclusion of Phase 2 to provide a framework for the development of Phase 3, the online quantitative questionnaire. As with the coding process used in the document review and semistructured interviews, comparing and merging used a process of constant comparison.

Comparison and Merging Process

Similar to Phase 1's coding process the comparison and merging of the qualitative results involved comparing and merging themes (Babbie, 2020). The researcher applied a four-step process:

Step 1. Selective and axial codes from Phases 1 and 2 were imported into Microsoft Excel. Each selective code was designated a separate spreadsheet in the file. Each code was assigned a label to ensure that sources could be traced back through the data analysis process.

Step 2. To ensure continuity of meaning, selective codes were compared for similarity and cross-referenced with their axial coding. Selective codes that aligned with each other were grouped together with their axial code. Selective codes that did not align remained within their own spreadsheet with their associated axial codes.

Step 3. Within the selective codes (where more than one phase was now presented), the associated axial codes from each phase were compared for similarity and cross-referenced with their open coding to ensure continuity of meaning. This work involved referring to the NVivo data file for each phase. When axial codes aligned, they were merged and attached to the selective code. Axial codes that did not align were attached to the selective code.

Step 4. In order to compare the outcome of the merging process for internal reliability (Bryman, 2008), two spreadsheets were then prepared for comparison. Spreadsheet one provided the merged representation of selective and axial codes from Phase 1 and Phase 2. Spreadsheet 2 presented a comparison of selective codes and axial codes from Phase 1 and Phase 2. The codes were then reviewed by the researcher and research supervisors for consistency.

Quantitative Research Phase

A quantitative method was applied to Phase 3 of the research. The online questionnaire was conducted after the comparison and merging of Phases 1 and 2 data. The selective and axial codes identified in the comparison and merging process were used to inform the online questionnaire instrument. The online questionnaire was administered between the 14th of December 2015 and the 16th of February 2016.

Phase 3: Online Questionnaire

The online questionnaire was designed to quantify and generalise (to a larger population) the knowledge gained from Phases 1 and 2. A new questionnaire was required based on the previous questionnaire-based research into knowledge, skills, and practical experience in the outdoor industry that occurred more than 40 years ago. Also, with the exception of one study by Priest (1986a), prior questionnaire-based research has been exclusively undertaken in the United States (Buell, 1981; Green, 1981; Swiderski, 1981).

Sample

The target population for the online questionnaire was outdoor education practitioners employed by organisations that provide outdoor education services to school-aged participants in Australia. As the size and makeup of the outdoor education practitioner population in Australia is unknown, the researcher aimed to gain as large and diverse a sample as possible. A convenience sampling strategy was applied to achieve this size and diversity.

Participant Recruitment

Recruitment began by constructing a database of national and state-based peak bodies, online social media outdoor education networks, and outdoor forums (Appendix K). An email was sent to each of the national and state-based peak bodies outlining the research and inviting them to assist in marketing the questionnaire to their membership and broader networks (Appendix L). To promote the questionnaire, marketing resources were provided, comprising a press release, a banner advertisement that could be used on the participating organisation's website, and a social media post (Appendix M, Appendix N). Each marketing resource contained a direct link to the questionnaire landing page.

Participants were able to access the questionnaire from the 14th of December 2015 until the 16th of February 2016. Follow-up emails were sent to the national and state-based peak bodies every four weeks as a reminder for potential participants. Posts were regularly updated on social media outdoor education networks and outdoor forums.

Data Collection

The online questionnaire was hosted by the survey software platform Qualtrics. Online questionnaires offer ease of access to participants. Participants can be engaged via multiple electronic forms of recruitment and promotion, such as email, social media, and newsletters. For participants, the ability to respond to questionnaires via a range of multimedia platforms and devices connected to the internet makes participation more convenient and accessible (Sue & Ritter, 2012). For researchers, Qualtrics software adapts to most question formats through a range of data collection instruments (Qualtrics, 2022). In addition, Qualtrics software provides a collated database of responses that can be analysed online or exported to programs such as Microsoft Excel and IBM SPSS.

The researcher used the Qualtrics software to logically and straightforwardly organise the questionnaire to enable participant self-administration. The questionnaire was designed to take approximately 30 minutes to complete. To maintain the confidentiality of participants and their organisations, questionnaire data remained anonymous.

Measures

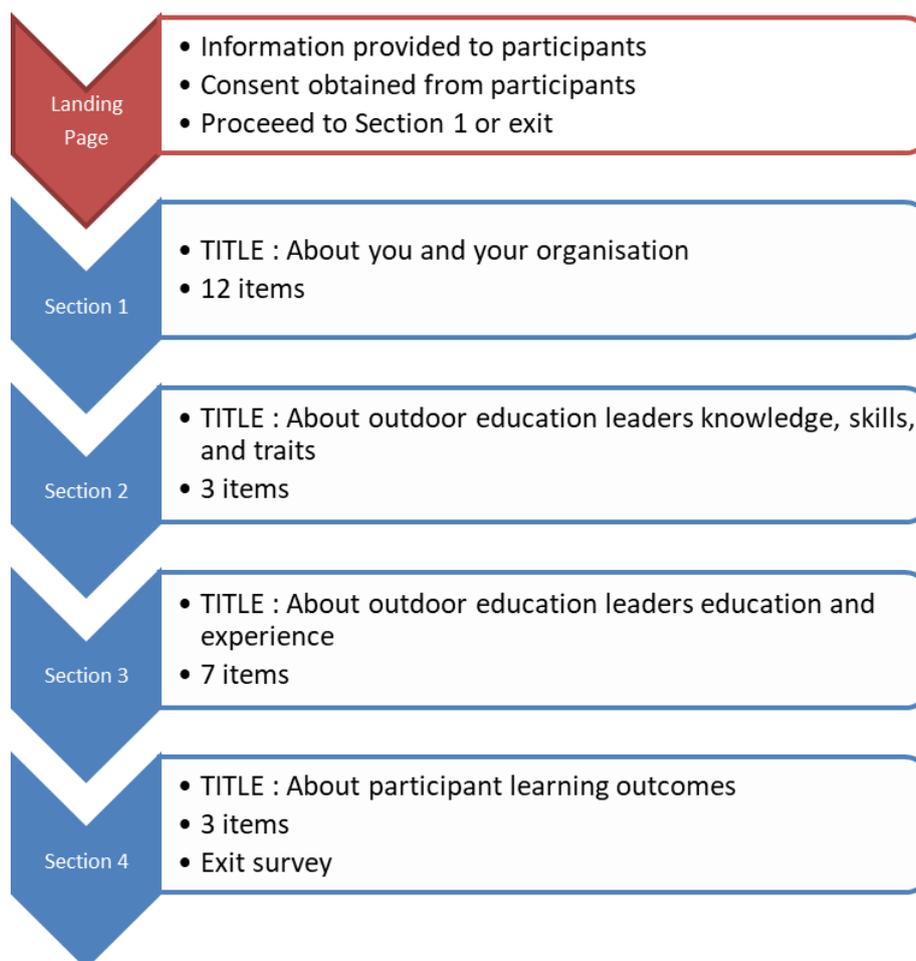
The following section provides an overview and detailed description of the questionnaire. It also provides an outline of how the questionnaire was validated and piloted.

The questionnaire comprised a landing page, four body sections, and a hyperlink to definitions (Figure 7). The landing page provided access to the information

required to participate in the study, including gaining consent. The body of the questionnaire was organised into four sections, containing 25 questions in total. Descriptive titles were ascribed to each body section to focus the participant on a topic.

Figure 7

Questionnaire Instrument Organisation



The body of the questionnaire contained a combination of quantitative and qualitative questions. Quantitative questions, in the form of dichotomous pairs, multiple choice, and rank order, provided avenues down which participants were asked to make clear and decisive choices (Brace, 2013). Qualitative open-ended questions provided an opportunity to capture rich and personal experiences that might further inform the research (Cohen et al., 2011).

Landing Page. The landing page provided access to information for participants which outlined the purpose, significance, and potential risks of participation, introduced the researchers, provided contact details, and enabled access to a consent question. For full details, see Appendix O.

Online Consent. Once a participant arrived on the landing page, they were given access to the 'Information to Participants Involved in Research' and then the 'Consent Form'. After reading these documents, participants were required to choose one of two possible responses to the following statement:

Statement: "I have read the above information and:"

Response options: "I agree to complete the questionnaire, I am 18 years old or over, and I am involved in the outdoor industry in Australia," or "I wish to exit the survey."

Once consent was given, the body of the questionnaire became accessible for the participant to complete. If the participant selected not to consent, they exited the questionnaire.

Questionnaire Definitions. Participants were provided with hyperlinks to a list of definitions (Appendix Q) and an explanation of the descriptive values used in the seven-point Likert scaled questions (Appendix R). The definitions hyperlink was available on each screen of the questionnaire and clarified the meaning regarding knowledge, skills, and practical experience.

Questionnaire Section 1: You and Your Organisation. The first section asked participants about their demographics and some aspects of their workplace organisation. The questions used in section one were modelled from the 2011 questionnaire instrument published by the Australian Bureau of Statistics (Australian Bureau of Statistics, n.d.-a). Demographic information, including the participant's gender, age, education, and geographical location, was collected to describe the sample group. A series of questions then sought to determine the role of the participant's organisation in the outdoor education sector to establish their suitability for

the study. Response options were informed by the literature reviewed focused on outdoor education organisation workplace norms. Appendix P summarises these questions and response options.

Questions designed to identify the sample group of organisations were identified. These included: what types of outdoor education experiences are provided by your organisation and what percentage of school groups does your organisation have as clients? Section 1 also contained questions that identified groups within the sample for comparison during analysis, including managers and nonmanagers, education level, and type of outdoor education provided.

Questionnaire Section 2: Outdoor Educators Knowledge, Skills, and Traits. In Section 2, survey Items 13 to 15 asked participants about the knowledge, skills, and traits required of outdoor educators. Item 13 listed the 12 identified areas of outdoor education knowledge and skills identified through Phases 1 and 2 of the study. An ordinal bipolar scale was used rather than the unipolar scale favoured by Priest (1986); it provided a format that simplified the question for the reader. A seven-point Likert scale allowed for the measurement of bipolar direction from a neutral response option and the degree of intensity (Dillman et al., 2014). Definitions of each Likert response option (Table 6) were provided to offer clarity to participants.

Table 6*Definitions for the 7-Point Bipolar Likert Scale*

Scale	Definition
<i>Very important</i>	A topic that you feel to be very important and must be attained by the HE outdoor education graduate.
<i>Important</i>	A topic you feel is important for a HE outdoor leadership graduate.
<i>Somewhat important</i>	A topic you feel is relevant but not necessary for a HE outdoor leadership graduate.
<i>Neither important nor unimportant</i>	A topic you are not applying a judgement regarding importance to.
<i>Somewhat unimportant</i>	A topic you feel is not relevant or necessary but may provide benefit for a HE outdoor leadership graduate.
<i>Unimportant</i>	A topic you feel is not important at all for a HE outdoor leadership graduate.
<i>Very unimportant</i>	A topic that you feel to be very unimportant and is not needed at all by a HE outdoor leadership graduate.

Note: Adapted from Dillman et al. (2014) and Green (1981).

Item 13 included an embedded secondary, short answer write-in question. Participants were asked to list up to five areas of knowledge and skills that they perceived were not represented in the 12 areas listed in the questionnaire. Item 14 asked participants to rank the same 12 areas of outdoor education knowledge and skills listed in Item 13 from most to least important. This response offered a consistency check for the responses to item 13. Item 15 asked participants to write-in a list of up to five personal traits needed of an outdoor education graduate.

Questionnaire Section 3: Outdoor Educators' Education and Experience.

In Section 3, Items 16 to 22 asked participants about the types of education and experience required to be outdoor educators. Item 16 asked participants to use the same seven-point Likert scale as item 13 to indicate the degree of importance they ascribed to practical experience for HE outdoor education graduates, a logbook of practical experience, and course-based work placements.

Item 17 asked participants to nominate the types of field-based experiences they preferred outdoor educators to have. Participants could choose as many

experiences as they wished from a list of seven and could write-in up to three additional types. Items 18 and 19 asked participants about the preferred duration of programs for outdoor educators to gain experience on. Item 18 asked participants to nominate the number of trips of different lengths (ranging from days to weeks) they deemed to be sufficient experience to employ a HE outdoor education graduate. Item 19 asked participants to rank-order the same list to cross-check for response consistency.

Items 20 and 21 asked participants about the number of days required in practical experience by a graduate to be prepared to lead an activity or develop outdoor education knowledge or skill areas. Item 20 listed a range of types of outdoor education practical experience and item 21 listed a range of outdoor education knowledge and skills. Participants could indicate the required days of practical experience from a six-point interval scale that began at zero and increased to 50 days in increments of 10 days. The options of not applicable (NA) and 50 plus days (50+) were also included.

Item 21 asked participants about the preferred HE delivery method to teach HE students the 12 main areas of outdoor education knowledge and skill. Participants could choose as many delivery methods as they wished from a list of seven, including 'not applicable'.

Questionnaire Section 4: Participants' Learning Outcomes.

In Section 4, Items 23 and 24, asked participants about outdoor education participant learning outcomes. Item 23 listed eight outdoor education participant learning outcomes and asked participants to use the same Likert scale as Items 13 and 16 to state their level of importance for graduates. Item 24 checked for response consistency by asking participants to rank-order the same list of learning outcomes.

Item 25 asked a write-in short answer question, providing participants with the opportunity to add additional comments regarding the knowledge, skills, and practical

experience required for graduates for them to be deemed properly prepared for the role of an outdoor educator.

Survey Validity and Piloting

The questionnaire underwent three separate stages of development: working, pilot, and final (Priest, 1986a). The working questionnaire was tested for face and content validity. Face validity is an estimate of whether a question is a reasonable measure of the variable being investigated (Babbie, 2020). Content validity is the examination of a measure to determine if it covers the range of meaning included within a concept (Babbie, 2020). Face and content validity can be determined by checking the measures with experts and the questionnaire's target audience. Babbie (2020) notes that "researchers should look to their colleagues and to their subjects as sources of agreement on the most useful meanings and measurements of the concepts they study" (p. 153). In the context of this research, face and content validity were checked by presenting the questionnaire to two outdoor education academics and two outdoor education industry experts. The process of face and content validity was undertaken one-on-one with each expert. Content validity was discussed first to determine whether the range of meaning for the concept being measured was represented, then face validity to determine whether, at face value, the question was a reasonable measure of the variable(s). A pilot version of the questionnaire was generated through this process.

The pilot version of the questionnaire was piloted with two groups of industry representatives of the target audience. The questionnaire instrument was tested for functionality/usability, comprehensibility of instructions and questions, and length of time required for completion. The piloting process was sequential (Group 1 before Group 2), and the group memberships did not overlap.

The first pilot was undertaken with a group of six outdoor educators employed at Victoria University, Melbourne. The second pilot was undertaken with 12 outdoor

education managers from Victoria, Australia. Both groups were provided with directions to provide feedback and requested to take notes based on a series of questions (Appendix S). After the participants had completed the pilot questionnaire, they were each contacted to collect their comments and participate in a brief interview to review questions in the questionnaire to clarify their responses.

Pilot Group 1 feedback was used to update the questionnaire for functionality/usability, comprehensibility of instructions and questions, and time required for completion. The questionnaire was then distributed to the second pilot group and the feedback and updating process was repeated.

Feedback on the pilot questionnaires and subsequent actions can be seen in Appendix T. Several improvements were made after the pilot responses had been collated, notably:

- Reducing the length of the questionnaire and subsequent time for completion.
- Clarifying context by reordering some questions.
- Improving the accessibility of the glossary and Likert descriptions.
- Rewriting questions 11, 24, 33, and 36 for simplicity and clarity.
- Addressing issues with flow relating to the Qualtrics software.

The final questionnaire instrument was then tested by the researcher. The researcher tested to ensure that the Qualtrics software was operating correctly, including capacity to download Qualtrics data and upload it into IBM SPSS.

Analysis

Data was downloaded from the Qualtrics site and then imported into IBM SPSS for cleaning and analysis. The data analysis focused mainly on providing descriptive accounts of the responses of outdoor education professionals, and thus the knowledge, skills, and practical experience they valued in HE outdoor education graduates entering the field. The analysis also sought to determine whether different types of outdoor

education professionals differed in their views on the knowledge, skills, and practical experience they valued in HE outdoor education graduates.

The researcher drew upon several authors to develop the analysis framework and procedures (Babbie, 2020; Pallant, 2020; Zechmeister & Posavac, 2003). The overall three-step (and substep) analysis protocol is presented in Table 7 and was adopted from the work of Pallant (2013) and Zechmeister and Posavac (2003).

Table 7

Quantitative Analysis Protocol

Step	Substep
Step 1: Data entry	Import data from Qualtrics
	Set up variable information for SPSS
	Screen and clean data
Step 2: Data inspection	Locate and amend errors in the data
	Determine missing data
Step 3: Data exploration and description	Distribution and outliers
	Central tendency
	Descriptive statistics
Step 4: Conducting statistical tests to compare groups	Run Mann-Whitney U statistical test

Note. Data analysis protocol constructed from Pallant (2020) and Zechmeister and Posavac (2003).

Step 1—Data entry. Data was entered by participants directly into the Qualtrics software. Data was then imported from Qualtrics into SPSS. Once in SPSS, appropriate variable information was assigned to each data column.

Step 2—Data inspection. The data quality was inspected to look for errors or anomalies, to locate and amend errors, and identify and manage omissions (Babbie, 2020; Pallant, 2020). Errors in the data may have occurred due to the data collection procedure, negative participant behaviour in completing the questionnaire, or the way the data was handled during the transfer to SPSS (Zechmeister & Posavac, 2003). To identify errors, data was initially visually inspected by the researcher in the SPSS data viewer. After a visual inspection, all variables were assessed by descriptive analysis,

producing minimum and maximum values and median. No data errors occurred, and no corrective action was required.

The data was then checked for any missing entries. Missing data due to participants failing to commence or fully complete questions was located. Missing data is a common and complex challenge for researchers using questionnaires.

Researchers must decide whether to delete the data set or attribute a score based on a mathematical algorithm to replace missing values (Field, 2009). The researcher decided to exclude from the analysis participants who were missing data from 50% or more of the total questionnaire. When a participant completed more than 50% of the questionnaire but failed to complete all variables of response for a question item, the participant was excluded from the analysis for that question item. SPSS's default 'system missing' code was then used to identify missing data in the data set (Pallant, 2020).

Step 3—Data exploration: Assessment of data normality on any dependent variables for normal distribution was conducted to identify any outliers, and then response patterns of all variables using descriptive statistics were explored (Pallant, 2020; Zechmeister & Posavac, 2003). Dependent variables were assessed for a normal distribution via the Kolmogorov-Smirnov and Shapiro-Wilk tests and a visual check of histograms. Visual inspection of boxplots and histograms was used to assess outliers and determine the undesirable influence of extreme scores. No scores outside of the range of possibility were identified. No outliers were detected.

Step 4—Conducting statistical tests to compare groups: The differences between participant groups were tested on the importance they assign to various outdoor education knowledge, skills, and practical experience for graduates. The three pairs compared were Managers and Nonmanagers, Bush Camping/Journeys professionals and Residential Camping professionals, and the highest outdoor education qualification - VE and HE. A nonparametric statistical test was selected to compare groups because all dependent variables involved ordinal data, the subgroups

were relatively small (in between $n = 30$ and $n = 100$), and there was also a large difference between the size of the subgroups (Pallant, 2020). The Mann-Whitney U Test was chosen to compare each pair of participant groups.

The Mann-Whitney U Test was applied for the following reasons. The Mann-Whitney U Test is used in place of the t-test when the assumptions of normality are not met (Pallant, 2020). The Mann-Whitney U Test can also be applied when the observations are ranks (ordinal data) rather than direct measurements. Instead of comparing the means of the two groups, as in the case of the t-test, the Mann-Whitney U Test compares the medians. It transforms the scores on the continuous variable into ranks for the two groups, and then calculates whether the ranks of the two groups differ significantly. The actual distribution of the scores does not matter because the scores are converted to ranks (Pallant, 2020). An effect size value is calculated for any Mann-Whitney U test results that were found to be statistically significant (Field, 2009).

Chapter Review

The three-phase methodology outlined in this chapter was designed to answer the research questions posed, and the related procedures, and outlined the advantages of the exploratory sequential mixed methods design employed. The advantage of mixed methods research, as identified in this chapter, lies in the application of qualitative approaches to understand phenomena alongside quantitative methods that help quantify factors under investigation. The following two chapters present the study's qualitative findings, then the quantitative results.

Chapter 5. Qualitative Findings

Findings from the two qualitative phases of this mixed methods research are reported in this chapter in three sections. The results of phase one, the document review, are presented in the first section. The results of phase two, the semi-structured interviews are presented in second section. Findings of these two phases are then merged in the final section to then informs the development of the phase three survey instrument. Within each section, the main themes (core codes), subthemes (selective codes), and facets (axial codes) drawn from each data source are analysed and a detailed coverage of the phenomena under investigation was undertaken through coding emergent data (references) at the facet level. Facets were compared for meaning and context, then merged to create subthemes. Subthemes were compared for meaning and context then merged to create themes. Facets that could not be merged, emerged to become subthemes. Facet emergence led to some subthemes with a low frequency of references. As noted in the Methods chapter, subthemes with less than eight references were reviewed and if pertinent collapsed into an aligned subtheme. In regard to the semistructured interviews, subthemes contributed to by less than three interviewees were reviewed and if pertinent collapsed into an aligned subtheme.

The themes identified in this chapter are presented in tables along with ordinal data showing number of references. Qualitative themes are categorical measurements expressed through language description which provide a depth of understanding of phenomena that numbers alone cannot provide (Griffith & Friesen, 2021). To provide further understanding regarding each theme, an in-depth analysis is provided with examples from the raw data, documents, or interviewee responses. Ordinal data showing the number of references provides an indicator of a theme's frequency (prominence) across the data (Keller, 2017). Identifying prominence meets the purpose of the qualitative phases as it provides the themes with an indicator of importance,

while agreement or disagreement in a sample group was achieved through the quantitative phase of the research presented in the next chapter.

Phase 1: Document Review

The purpose of the document review was to explore the first two research questions. Based on the document criteria, a total of 218 documents were collected and analysed across ten organisations. The organisations included industry peak bodies, federal and state government departments, government authorities, and professional institutes.

Fifty-three electronic documents and 167 webpages were downloaded from the identified organisations' websites. Electronic documents were downloaded in .txt or .pdf file format, while website pages were 'captured' using NVIVO software and then converted to pdf documents for coding. The size of documents varied significantly, from one page to several hundred. For example, the 163 Safety Guidelines for Education Outdoors documents ranged from one to 10 pages, while the single VCE study design for outdoor education and environmental studies comprised 52 pages. Appendix A lists each document analysed with requisite source information.

Document Review Themes

Four themes (core codes) were identified through the document review: leader knowledge, qualifications, regulations and standards, outdoor education outcomes, and practical experience. The themes are presented in Table 8. Alongside each theme is the number of documents and reference quantity coded against the corresponding theme. The reference quantity is an indicator of how prominent a theme was in the documents. The themes are sorted in descending order by reference quantity, from most prominent (Leader Knowledge) to least (Practical Experience). As per the coding protocol (Babbie, 2020; Bryman, 2016), a coding tree was developed from open codes to axial codes (facets), then selective codes (subthemes), and finally core codes (themes). Appendix U shows the coding tree relating to each of the themes.

Table 8*Main Themes Identified in the Document Review*

Themes	References	Documents
Leader knowledge	858	61
Qualifications, regulations and standards	464	54
Outdoor education outcomes	401	6
Practical experience	117	49

Leader Knowledge

Leader knowledge was the most frequently coded theme, with 858 occurrences in 61 documents. Table 9 lists the eight subthemes relating to leader knowledge sorted in order of prominence using reference quantity. The most prominent subtheme was *outdoor activity-specific instruction and leadership*, which was referenced on 416 occasions.

Table 9*Subthemes Relating to Leader Knowledge*

Subtheme	References
Outdoor activity-specific instruction and leadership	416
Safety and risk management	162
Environmental knowledge	102
Location-based knowledge of the leader	68
Outdoor recreation program design	53
Pedagogy	19
Managing community and public relationships	18
Responsibilities of leaders	17

Outdoor Activity-Specific Instruction and Leadership. Outdoor activity-specific instruction and leadership refers to the leader knowledge required to deliver technical adventure activities. Across the documents, 28 outdoor adventure activities (sports) (Appendix V) and their associated knowledge and skills were identified as a requirement for outdoor educators. The outdoor adventure activities ranged across

different environments including river, coastal, sea, rock, bush, desert, and alpine. A common thread between the activities was the method of travelling through nature, whether human-powered (walk, ski, bike, paddle) or element powered (wind, water flow, gravity). Due to the ongoing emergence of new adventure activities, such as paddle boarding and pack rafting, the list of adventure activities presented was unlikely to be complete for all outdoor education programs. However, the list represented the range of activities and the most used in outdoor education programs. The way in which outdoor education programs travel through nature demands a set of lightweight outdoor living and travel skills (OLATS).

Within the documents, OLATS were identified as mutual skills alongside adventure activities, including packing and preparing personal equipment, menu planning, bushcraft, managing a temporary campsite, navigation, and weather reading. These skills were referred to in broad terms such as camping and camp management skills (Outdoor Education Australia, n.d.-a), generic skills (Outdoor Council of Australia, n.d.-d), and core skills and knowledge (Department of Education and Early Childhood Development, n.d.-b). The OLATS required of a school student engaged in an outdoor education program are the same as those for an outdoor educator. DEECD's Safety Guidelines for Education Outdoors (Department of Education and Early Childhood Development, n.d.-c) provide an example of the core skills and knowledge a school student needs to be taught by an outdoor educator to engage in an overnight camping trip, they include:

Group hygiene, water collection, safe food preparation, dining and cleaning, personal hygiene;

Cooperation and teamwork during camp activities;

Individual responsibility for personal and group safety;

Technical camping skills, including cooking and safe shelter construction, awareness of wildlife and potential for bites or stings, ability to react immediately and responsibly to emergencies. (p. 1)

Outdoor Education Australia's (OEA's) Guidelines for Teaching Outdoor Education in Schools (Outdoor Education Australia, n.d.-a) provides a summary of the recommended foundation OLATS and adventure activity skills required by outdoor education teachers. Outdoor educators providing experiences in non-school settings require the same OLATS, as follows:

Camping and camp management.

Activity skills to lead in easy environments in two or more outdoor activities.

Bushwalking and Canoeing/Kayaking are the most popular activities in schools, and these are highly recommended. Additional depth of skills to lead groups in semi-remote environments desirable. Additional activity skills also desirable to support a broad program. (Outdoor Education Australia, n.d.-a, p. 1)

OEA recommends the OLATS encompass camping and camp management skills, with a preference towards bushwalking, and canoeing/kayaking adventure activities. Furthermore, the desirable skills to lead activities in semi-remote environments adds a depth of knowledge and skills beyond those the OEA defines as 'easy'. The more remote a location, the more knowledge, skill, and experience an outdoor educator requires. For example, additional training is required in first aid where access to definitive medical care is restricted, and where complex and extended patient care becomes necessary (Commonwealth of Australia, n.d.-b). This example highlights the contextual influences that need to be considered when identifying the outdoor activity-specific instruction and leadership skills required.

Safety and Risk Management. This includes the leader knowledge required for the safe planning, administration, and delivery of outdoor education experiences. The terms 'safety' and 'risk management' encompass different but connected sets of

knowledge and skills. It is this connection by knowledge and skills that created the subtheme of safety and risk management. While safety encompassed practical skills to prevent physical or emotional harm to participants, risk management included the theoretical understanding of the potential risks to participants and the management practices regarding risk.

Safety skills are required by outdoor educators to respond to incidents in general and in the outdoor education context. For example, rescue and first aid were identified as an area of general skill specific to activity and environment (river, coastal, rock, alpine, bush, and desert) (Department of Education and Early Childhood Development, n.d.-d; Outdoor Council of Australia, n.d.-b; Outdoor Recreation Centre, 2010a). Safety knowledge was a key component which included the preparation of participants, appropriate selection and safe use of equipment, environmental and place-based knowledge, and the operational implementation of risk mitigation strategies. Outdoor Victoria's (formerly the Outdoor Recreation Centre) Adventure Activity Standards (AAS) for Canoeing and Kayaking provides an example of the safety knowledge and skills required of leaders concerning participant preparation and emergency equipment, "it is the responsibility of leader(s) to ensure that all participants carry with them all necessary equipment for the activity. They will also ensure that they have adequate emergency supplies to handle any likely contingency" (Outdoor Recreation Centre, 2006a, p. 23).

Risk management knowledge through the planning, organisation, and administration of outdoor education programs. Risk management knowledge included program planning skills, focusing on risk reduction, organising pretrip documentation, conducting risk assessments, designing emergency response procedures, interpreting and implementing risk management plans, the application of live risk assessments undertaken during the program, and understanding the roles and responsibilities of organisations and individuals regarding risk management.

Environmental Knowledge. Understanding of the natural world and its processes and of practices to conserve natural places is the basis of a leader's environmental knowledge. The facets of ecological literacy, environmental science and management, and minimal environmental impact practices were identified. For example, ecological literacy refers to the leader's ability to understand the systems that make life possible on earth. The need for ecologically literate outdoor educators was evident through statements from the AAS. For example, an outdoor educator on a caving activity should be able to provide an "Understanding through education the role each species plays in each environment in order to realise the importance of its position within an ecosystem" (Outdoor Recreation Centre, 2010c, p. 13).

The environmental science and management facet contained references to knowledge regarding natural resource management, ecology, environmental studies, and the management of human interactions with natural places. The minimal environmental impact practices facet refers to specific actions, practices, behaviours, and education needed to reduce human impact on the natural places visited during outdoor activities. The practices identified from these facets were specific, for example "All animals and plants that are collected for observation should be handled with care (kept wet if from the water) and returned to the same environment from which they were collected" (Outdoor Recreation Centre, 2005, p. 25).

There were also standardised practices found across all activities and environments, such as removing litter, managing human waste, and reducing the human impact on flora and fauna. These practices were referred to via broad statements that directed the outdoor educator to manage and minimise the group's impact on the environment (Department of Education and Early Childhood Development, n.d.-a).

Location-Based Knowledge of the Leader. This refers to a leader's capacity to contextualise knowledge and skills to a particular place and understand the individuality of that place. The requirement for location-based knowledge stems from a

need for informed risk management, indigenous ownership acknowledgment, environmental education, environmental protection, program planning, group management, and program logistics.

The DEECD produced the following set of guiding questions for leaders when planning an outdoor education experience. These questions provide insights into the location-based knowledge required of a leader when planning and implementing a safe and educational experience. The questions are:

What educational opportunity does this particular environment offer?

What specific risks does this environment present?

What supervision issues does this environment present?

What emergency response requirements do you have to put in place for this particular environment?

What specific first aid and/or other equipment is required for you to be able to adequately respond in an emergency?

What local knowledge do you have about this location?

How will your group minimise their environmental impact? (Department of Education and Early Childhood Development, n.d.-a, p. 1)

Outdoor Recreation Program Design. It is defined as leader knowledge required to design and plan of outdoor adventure activities. Outdoor recreation program design is different from the educational planning and design knowledge identified in the pedagogy subtheme. Outdoor recreation program design encompasses the use of outdoor recreation activities to achieve broad educational objectives aligned to learning goals, such as health and fitness. The AAS for Abseiling articulates the role of program planning, acknowledging that planning is undertaken in different ways that depend upon the program's objectives and organisations approach. For example, "in any adventure activity, planning is essential to achieve objectives, have fun and to minimise the inherent risks to participants. There are many acceptable ways to plan an activity

and AAS recognises that each group will approach this differently” (Outdoor Recreation Centre, 2010a, p. 4).

Recreational outdoor activities are an integral component of outdoor education within Australia. The link between outdoor recreational activities and outdoor education is evidenced in the Victorian Curriculum Assessment Authority’s (VCAA) Outdoor Education and Environmental Studies, VCE study design, “recreation activities are used to learn about the natural environment. The activity itself is not intended to be the focus or an end in itself, but is a window for entry into the study at different points.” (Victorian Curriculum and Assessment Authority, 2011, p. 30).

Pedagogy. This refers to leader knowledge regarding the method and practice of teaching and learning. Teaching pertains to leader knowledge on the methods and practices to deliver outdoor education student learning outcomes. The documents emphasised the educational benefits of teaching practice as it relates to outdoor education within the context of VCE Outdoor Education and Environmental Studies and outdoor education excursions undertaken up to Year 10. Documents pertaining to the pedagogy of learning emphasise the value of experiential learning and direct experience in the outdoors, as typified in the following document extract from the VCE Outdoor Education and Environmental Studies Design:

Experiential education is the foundation of this course. Significant learning occurs during the practical application of the knowledge and skills developed in the classroom. It is vital, therefore, that the development of a course reflects the strong links between theoretical and practical understanding that enable students to make critically informed decisions and understand the importance of environmental health...The theoretical material covered in class should underpin practical experiences and wherever possible be explored experientially. (Victorian Curriculum and Assessment Authority, 2011, p. 29)

Managing Community and Public Relationships. This is defined as leadership knowledge for the management of human-to-human interactions that occur

before, during, and after an outdoor education experience. The management of human-to-human interactions includes informing local authorities and landholders regarding trip intentions, being respectful and mindful of other users on public and private land, the outdoor educator taking responsibility for the group's behaviour, and ensuring the group is lawful and complies with any local regulations.

Leaders are seen to have a responsibility to ensure the activities and groups they lead do not cause a disturbance to other public land users or residents. Land managers are very specific when providing directives:

DO NOT cause or permit to be done anything about, or in the vicinity, of the Licensed Area, which constitutes an actionable nuisance, annoyance or disturbance to other persons lawfully entitled to use the Licensed Area, or any land adjoining the Licensed Area. (Parks Victoria, n.d., p. 9)

Responsibilities of Leaders. This subtheme refers to leader knowledge which were diverse and detailed. The physical health and wellbeing of participants was a recurring reference throughout the documents, with a focus on the need to take on a range of responsibilities from food preparation to activity-specific needs such as managing safety at heights while climbing. The documents frequently cited the leader's legal responsibilities relating to the duty of care and compliance with standards, legislation, and laws. Also, the overall management of logistics and staff was a common area identified. The AAS for Bushwalking provides an overview of an activity leader's responsibilities within an adventure activity context:

The leader of the activity will:

- Have the skills and experience to carry out the activity plan
- Be responsible for delegating tasks to assistant leader(s)
- Be responsible for conducting the activity on-the-ground without external supervision

- Have activity skills as well as group management skills. (Outdoor Recreation Centre, 2010b, p. 9)

The AAS for Bushwalking provides a detailed list of specific responsibilities in addition to leading the group, and states that, “Individual tasks may be delegated but the responsibility remains with the activity leader” (Outdoor Recreation Centre, 2010b, p. 9). This extensive list is provided in Appendix W.

Outdoor leaders' responsibilities are diverse and detailed (Appendix W). Responsibilities span from planning, preparation, activity delivery, and documentation, to the soft skill related tasks relating to group management and hard skill related tasks such as navigation, first aid, and bushcraft.

Qualifications, Regulations and Standards

The second most common theme refers to local, state, and federal government, acts, legislation, laws, bylaws, licences, and mandatory compliance requirements relating to outdoor education programs and workplaces. Table 10 lists the three subthemes relating to qualifications, standards, legislation, and guidelines in order of prominence using reference quantity. The most prominent subtheme was qualifications, which was referenced on 350 occasions.

Table 10

Subthemes Relating to Qualifications, Regulations and Standards

Subtheme	References
Qualifications	350
Regulations, acts and licences	76
Standards and guidelines	30

Qualifications. This refers to recommended or required education and training pertinent to leading outdoor education programs. Qualifications in Australia can be broadly categorised as aligned (formal) or not aligned (nonformal) to the AQF (Department of Education Skills and Employment, n.d.-a). Formal training identified in

the documents included HE and VE, while nonformal training identified was categorised in the facet of community-based qualifications. An example of community-based qualifications includes those provided through the Australian Climbing Instructors Association (Australian Climbing Instructors Association, n.d.). The Australian Climbing Instructors Association provides training, assessment and accreditation for climbing guides, instructors and trainer/assessors however, the qualifications are not aligned to the AQF (Department of Education Skills and Employment, n.d.-a) through the national sport, fitness and recreation training package (Department of Education Skills and Employment, n.d.-b).

Outdoor adventure activity instruction and guiding skills are an integral component of an outdoor educator's knowledge and skills. In the document review, recognition of having the required skills to lead outdoor adventure activities was attainable through multiple pathways, formal and nonformal. However, in almost all occurrences, 'units of competency' aligned with VE and AQF Levels 1–5 were used as the benchmark measure of competence. Figure 8, an extract from the Outdoor Council of Australia (OCA), National Outdoor Leadership Registration Scheme (NOLRS) registration checklist for canoeing flatwater guide (Outdoor Council of Australia, n.d.-e), provides a tick box tool for applicants. The checklist is evidence of the multiple pathways available for qualifications and the underpinning use of AQF Levels 1–5 competencies (VE) to benchmark AQF 6–7 (HE). Figure 8 shows that all options are aligned with a National Training Package code (AQF 1–5 skillset), excluding the community-based qualification offered by the Australian Canoe Association and recognised university courses. For a university course to become NOLRS recognised, the university's curriculum must be mapped against the units of competency from the National Training Package (AQF 1–5). This requirement removes the multiple pathways option for HE graduates when only aligned university courses are recognised.

Figure 8

NOLRS Registration Checklist, Canoeing Guide Flat Water

	Registration Checklist Canoeing Guide Flat Water V 2.0 June 2013, © OCA	
To be eligible for NOLRS registration you need to meet the requirements of sections A, B and C below:		
A	Skills and Knowledge*	<input type="checkbox"/>
Option 1:	SIS10 Canoeing Guide Flat Water Skill Set	<input type="checkbox"/>
OR		
Option 2:	Current AC registration as a Flatwater Guide - Canoe	<input type="checkbox"/>
OR		
Option 3:	NOLRS Recognised Outdoor Leader Course: <ul style="list-style-type: none"> • Certificate III in Outdoor Recreation (SRO99, SRO03, SIS10); or • Certificate IV in Outdoor Recreation (SRO99, SRO03, SIS10); or • Diploma in Outdoor Recreation (SRO99, SRO03, SIS10); or • Recognised University Course (see NOLRS website); <p style="text-align: center;">AND</p> Activity Level Specific Units: <ul style="list-style-type: none"> • Canoeing Guide Flat Water Unit Group (see NOLRS website: SRO03 or SIS10); 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Note. Outdoor Council of Australia. (2013b). Registration checklist canoeing guide flat water.

Retrieved August 8, 2013 from <http://www.outdoorcouncil.asn.au/nolrs/>

Despite the restriction in pathway options for HE graduates through NOLRS, HE graduates are often employed as outdoor educators within school settings. In contrast with the dependence on the National Training Package found in most industry documents, there was an absence of reference to VE units of competence in the DEECD's Safety in the Outdoors Guidelines for schools (Department of Education and Early Childhood Development, n.d.-a). These guidelines refer to community qualifications, university degrees, and experience. Non-formal community qualifications were identified for almost all the adventure activities presented in the guidelines. The guidelines identified a lack of community-based qualifications in whitewater rafting, overnight camping, and bushwalking (Department of Education and Early Childhood Development, n.d.-a).

Regulations, Acts and Licences. Include the directives and rules imposed by an authority that influence outdoor education and the workplace of outdoor educators. Regulations relating to camping, adventure activities, venue access, biological control, fisheries, marine safety and boating, workplace health and safety, child safety, and fire were identified in the documents. Regulation examples include the adventure activity safety standard for rock climbing, which requires that “leaders must have passed the Working With Children Check if independently supervising participants under 18 years of age” (Outdoor Recreation Centre, 2010d, p. 4), showing the compliance requirement for leaders regarding child safety regulations, and in a different context, the requirement that leaders must ensure compliance with regulations set out under the National Parks Act 1975 to comply with Parks Victoria tour operator permits (Parks Victoria, n.d.).

Acts include the legal requirements associated with outdoor education and the workplace. Acts relevant to outdoor educators are the Wildlife Act of 1975, the Food Act 1984, the National Parks Act of 1975, the Occupational Health and Safety Act 2004, the Road Safety Act 1986, the Marine Safety Act 2010, and the Working with Children Act 2005. While it is unlikely an outdoor educator will need to interpret an Act of Parliament, they do need to comply with requirements that emerge from them (Outdoor Recreation Centre, 2006b).

Licences include mandatory requirements to undertake particular workplace tasks. Licences recognised in the documents relevant to outdoor educators included recreational boat licences issued by the Maritime Safety Council, motor vehicle licences and endorsements issued by VicRoads, and driver accreditations issued by Commercial Passenger Vehicles Victoria.

Standards and Guidelines. These included the level of quality, and commonly accepted best practices relating to outdoor educators. The standards include AS/NZS 2299.3:2003, Occupational diving operations—Recreational industry diving and snorkelling operations, AS-NZS 4360, Risk management, and Food Standards

Australia and New Zealand (FSANZ). The guidelines included the Safety Guidelines for Education Outdoors (DEECD) and the AAS. For outdoor educators to deliver the expected level of quality and align with industry best practice, they require an operational understanding of these standards and guidelines.

Outdoor Education Student Learning Outcomes

The third most referenced subtheme refers to learning outcomes for participants and emerges from the content of outdoor education as a discipline and the experiential learning methodologies used in outdoor education. Identifying these learning outcomes provides insight into the knowledge and skills required of outdoor educators. For a school student to achieve the learning outcome, the outdoor educator requires knowledge of the learning outcome and the skill to provide a program that delivers the intended learning goal.

Outdoor education, as both a subject of study for school students and a methodology of teaching and learning, is integrated within the outdoor education outcomes theme. For example, the subtheme human/nature relationships outcomes is both an experiential method that engages students towards an eco-centric perspective and a study of how humans interact with the natural world. Sorted in order of prominence based on reference quantity are the eight subthemes relating to outdoor education student learning outcomes (Table 11).

Table 11*Subthemes Relating to Outdoor Education Student Learning Outcomes*

Subtheme	References
Human/nature relationships	91
Community and group development	76
Environmental science	60
Sustainability	55
Personal development	43
Wellbeing	39
Natural resource management	28
Place-based knowledge	9

Human/Nature Relationships Outcomes. This involves how students physically and emotionally relate to and interact with nature. Understanding social factors including political, historical, and economic, and their influence on shaping human/nature relationships were identified as outcomes for students in the documents. Also evident were the effects of human/nature relationships on the students' value of the natural environment, connection to place, and Australian cultural practices as they relate to nature.

Connection to place was an integral facet in the school curriculum-oriented documents reviewed, in AusVELS, and in the VCE Outdoor Education and Environmental Studies Study Design. For example, the following questions outline the nature of place as a concept within the AusVELS Geography curriculum:

How do people's connections to places affect their perceptions of them?

How do the interconnections between places, people and environments affect people's lives?

What are the future implications of changes to places and environments?" (Victorian Curriculum and Assessment Authority, 2013a, p. 2)

In addition, the documents reveal the importance of knowing a place as typified in the VCE Outdoor Education and Environmental Studies Study Design, "The different

ways of knowing outdoor environments, including through experiential knowledge, environmental and natural history, and ecological, social and economic perspectives” (Victorian Curriculum and Assessment Authority, 2011, p. 13).

Community and Group Development Outcomes. The experience of students living in temporary social communities while participating in outdoor education programs encompasses this subtheme. It also includes the development of behaviours beneficial to productive community living. The documents emphasise the skills relating to relationship building, conflict resolution, bullying, and cooperation. The following quote from the AusVELS Curriculum, Interpersonal Domain, Levels 7–10 provides an example of behaviours and social skills outcomes:

Building effective social relationships and relating well to others requires individuals to be empathetic, and to be able to deal effectively with their own emotions and inner moods. It also requires them to be aware of the social conventions and responsibilities that underpin the formation of effective relationships. (Victorian Curriculum and Assessment Authority, 2013c, p. 3).

Environmental Science Outcomes. Includes school student’s understanding and experiencing the natural environment through a scientific way of knowing. The documents emphasised outcomes regarding; ecology; environmental health; biological sciences; and the differences between urban, rural, and natural environments. A focus on environmental science and human impacts on natural places was evident in the documents. The following quote from the VCE Outdoor Education and Environmental Studies Study Design provides an example of what students will study; “Australian outdoor environments before humans, including characteristics of biological isolation, geological stability, and climatic variations” (Victorian Curriculum and Assessment Authority, 2011, p. 19).

A focus on biology and ecology was noted in the following AusVELS learning outcomes for Science Levels 7–10, specifically that interactions between organisms can be described in terms of food chains and food webs and that human activity can

affect these interactions (Victorian Curriculum and Assessment Authority, 2013d, p. 14). Similar biology and ecology content is also observable in the following VCE Outdoor Education and Environmental Studies Study Design, “Scientific understandings of specific outdoor environments, including:

- Interrelationships between biotic and abiotic components.
- Effects of natural changes to environments on people and places such as day to night, seasons, tides, fire, flood, drought, migration, succession, and climate change” (Victorian Curriculum and Assessment Authority, 2011, p. 16).

Sustainability Outcomes. This relates to learning outcomes to educate students in sustainability practices and environmental consciousness. The following quote from the VCE Outdoor Education and Environmental Study Design represents the breadth of content from the practicalities of being an environmentally conscious person to the depth of social and political inquiry:

Students examine the importance of developing a balance between human needs and the conservation of outdoor environments and consider the skills needed to be environmentally responsible citizens. They investigate current agreements and environmental legislation, as well as management strategies and policies for achieving and maintaining healthy and sustainable environments in contemporary Australian society. (Victorian Curriculum and Assessment Authority, 2011, p. 22)

Personal Development Outcomes. This references learning outcomes in which students focus on resilience, personal knowing, and affective awareness. The AusVELS and Australian Curriculum Update in 2013 summarises the strong association between outdoor education and learning outcomes in interpersonal development, and personal development:

Outdoor education programs can provide the opportunity to address many of the general capabilities. However, because outdoor education often has a focus on interpersonal development, there is a strong connection to the personal and social

capability. This general capability includes a focus on the development of social and emotional skills to enable student to manage themselves, relate to others, develop resilience and a sense of self-worth, resolve conflict, engage in teamwork and feel positive about themselves, all of which could be developed through outdoor education. (Victorian Curriculum and Assessment Authority, 2013a, p. 2)

Wellbeing Outcomes. Both physical and mental health and wellbeing outcomes are included in this subtheme. Facets of this subtheme identified in the documents include the benefits of leisure activities, healthy diet, personal safety and risk and challenge, the benefits of exercise, and mental health understanding. The VCAA acknowledges the benefits of outdoor education and nature-based outdoor recreational activities within AusVELS Health and Physical Education (Victorian Curriculum and Assessment Authority, 2013a). Other outdoor recreation benefits identified in the documents included the health and wellbeing benefits of direct experience within natural places and the validity of the activities as an “environment for developing movement competence” (Victorian Curriculum and Assessment Authority, 2013a).

In Level 10 of the AusVELS Health and Physical Education curriculum, students are expected to explore perceptions of challenge, risk and safety in a variety of contexts (Victorian Curriculum and Assessment Authority, 2013b). The purpose of this curriculum study focus is to minimise personal and social harm. Adventurous outdoor activities are used as a metaphor within the Health and Physical Education as a method to teach these learning objectives:

[Students] discuss ways to balance risk and safety, refine and evaluate harm minimisation strategies. They examine strategies to promote safety such as those associated with occupational health and safety. Students examine the concept of adventure in outdoor activities as well as perceived and actual risk. (Victorian Curriculum and Assessment Authority, 2013b, p. 16)

Natural Resource Management Outcomes. This includes learning outcomes focusing on management strategies, policies, and activities to achieve and maintain healthy and sustainable outdoor environments. The associated outcomes of conservation, understanding environmental research and policy, natural resource management conflicts, impacts of human activity, and environmental issues emerged from the documents (Victorian Curriculum and Assessment Authority, 2011, 2013e).

Place-Based Knowledge Outcomes. This outcome refers to students applying other outdoor education outcomes to a specific place to generate a localised and deeper understanding. Understanding differing ways of knowing places was included “experiential knowledge, environmental and natural history, and ecological, social and economic perspectives” (Victorian Curriculum and Assessment Authority, 2011, p. 13).

Practical Experience

Practical experience, the least prominent theme in the documents, refers to the recommended or required engagement of outdoor educators in direct experiences to learn or develop the knowledge and skills to deliver outdoor education. The three subthemes relating to practical experience sorted in descending order of prominence based on the number of references found are presented in Table 12.

Table 12

Subthemes Relating to Practical Experience

Subtheme	References
Outdoor activity practical experience management framework	55
General need for experience	36
Need for activity-based experience	26

Outdoor Activity Practical Experience Management Framework. Refers to the NOLRS, managed by the OCA. According to the OCA, NOLRS provides endorsement of outdoor leaders’ “current skills, knowledge and experience” (Outdoor Council of Australia, n.d.-b, p. 1). NOLRS was established in 2003 and is a voluntary

scheme for individuals who lead groups in outdoor adventure activities. The initial process of NOLRS endorsement recognises current skills, knowledge, and experience and a reaccreditation process encourages outdoor leaders to maintain the currency of their knowledge and skills through professional practice, training, and education.

The documents reviewed show a framework in NOLRS that can record and manage the practical experience requirements of outdoor educators. Thirteen adventure activities were identified for registration or reregistration through the scheme. The activity-specific registration process includes a checklist, logbook, and minimum hours of practical experience in guiding or instructing. An example of the checklists for registration used for bushwalking in controlled, intermediate, and uncontrolled environments can be seen in Appendix X.

The NOLRS documents show that different outdoor adventure activities require differing types, frequencies, and durations of practical experience. An extract from the NOLRS Registration Logbook Requirements Summary (Figure 9) shows the variance in hours of the practical experience required in leading, guiding, and rescue (Outdoor Council of Australia, n.d.-f).

Figure 9

NOLRS Registration Logbook Requirements Summary



NOLRS Registration Logbook Requirements Summary
Initial Registration
(for re-registration logbook requirements please see the re-registration tables)

All logbook evidence must be in the past twelve (12) months.
Logbook evidence must involve at least one (1) dependent client group*.
(*Commercial client groups or groups led by a volunteer within an organised club like environment.)

OR	evidence of different locations or different groups required.
AND	evidence of different locations and different groups required.
Leading Hours	evidence of instructing for the instruct level, evidence of guiding or instructing for the guide level.
Rescue / Overnights	evidence of relevant rescue training (internal or external) or other activity specific requirement.

Aquatic		Leading (hrs)	Aquatic Rescue (hrs)	Locations & Groups
Canoeing				
Flatwater	3 Guide	18	6	OR
Flatwater	4 Instruct	18	6	OR
Grade 2	3 Guide	24	6	OR
Grade 2	4 Instruct	24	6	OR
Grade 3	4 Guide	30	6	AND
Grade 3	D Instruct	30	6	AND
Kayaking				
Flatwater	3 Guide	18	6	OR
Flatwater	4 Instruct	18	6	OR
Grade 2	3 Guide	24	6	OR
Grade 2	4 Instruct	24	6	OR
Grade 3	4 Guide	30	6	AND
Grade 3	D Instruct	30	6	AND
Sea Kayaking				
Easy to Mod	4 Guide	24	6	OR
Easy to Mod	4 Instruct	24	6	OR
Mod to Diff	D Guide	30	6	AND
Mod to Diff	D Instruct	30	6	AND
Snorkelling				
	3 Guide	18	6	OR
	4 Instruct	18	6	OR

Journey Based		Leading (hrs)	Other (hrs or o/n)	Locations & Groups
Bushwalking O/nights				
Controlled	3 Guide	18	-	OR
	Instruct		See checklists	
Intermediate	4 Guide	24	2 (o/n)	OR
	Instruct		See checklists	
Uncontrolled	D Guide	30	3 (o/n)	AND
	Instruct		See checklists	
Mountain Biking				
Intermediate	3 Guide	18	-	OR
Intermediate	4 Instruct	18	-	OR
Cycle Touring O/nights				
Day Tours	3 Guide	18	-	OR
O/night Tours	Guide	24	1 (o/n)	OR
O/night Tours	4 Instruct	24	1 (o/n)	OR

Roping		Leading (hrs)	Vertical Rescue (hrs)	Locations & Groups
Abseiling (Artificial)				
Single Pitch	3 Guide	18	6	OR
	4 Instruct	18	6	OR
Multi Pitch	4 Instruct	24	6	OR
Abseiling (Natural)				
Single Pitch	3 Guide	18	6	OR
	4 Instruct	18	6	OR
Multi Pitch	4 Guide	24	6	AND
	D Instruct	24	6	AND
Climbing (Artificial)				
Top Rope	3 Guide	18	6	OR
Single Pitch Lead	4 Instruct	24	6	OR
Multi Pitch Lead	D Instruct	30	6	AND
Climbing (Natural)				
Top Rope	3 Guide	18	6	OR
	4 Instruct	18	6	OR
Single Pitch Lead	4 Guide	24	6	OR
	4 Instruct	24	6	OR
Multi Pitch Lead	D Guide	30	6	AND
	D Instruct	30	6	AND
Challenge Ropes				
Low	3 Conduct	18	-	OR
	4 Supervise	24	-	OR
	D Manage		See checklists	
High	3 Conduct	18	6	OR
	4 Supervise	24	6	OR
	D Manage		See checklists	
Canyoning				
Single Pitch	3 Guide	18	6	OR
Multi Pitch	4 Guide	24	6	AND
	D Instruct	24	6	AND
Caving				
Single Pitch	3 Guide	18	6	OR
	4 Instruct	18	6	OR
Multi Pitch	4 Guide	24	6	AND
	D Instruct	24	6	AND

Note. Outdoor Council of Australia. (2013c). Registration logbook requirements summary

020813. Retrieved August 8, 2013 from <http://www.outdoorcouncil.asn.au/nolrs/>

Technical working groups undertake an annual review of NOLRS requirements, including the type, frequency, and duration of practical experience required to guide or instruct in an activity (Outdoor Council of Australia, n.d.-c). The technical working groups are broken into three broad categories of roping, aquatics, and journey-based activity. These groups provide the industry expertise that underpins the NOLRS framework, and while they include representatives from across the outdoor industry, they do not include HE and VE providers (Outdoor Council of Australia, n.d.-c).

General Need for Experience. Refers to the practical experience an outdoor educator requires as a component of their previous study, training, and/or employment. Common through the documents was that experience of leaders is directly linked to knowledge and skills. Knowledge, skill, and experience are a triad of features that prepare a leader to fulfil the role of an outdoor educator. Furthermore, experience was a recognised attribute. For example, the AAS highlights that knowledge, skill, and experience are integral components of outdoor educator preparation, “It is recommended that leaders keep a diary record of activities they participate in and/or are responsible for as relevant experience is also extremely important” (Outdoor Recreation Centre, 2010b, p. 5).

Need for Activity-Based Experience. Refers to a frequently referenced type of experience. The need for this experience was associated with all the adventure activities identified in Appendix V. Across the DEECD Safety Guidelines for Education Outdoors, a need for activity-based experience linked to the activity environment was identified. For example, “staff involved in the planning and conduct of the activity should have sufficient knowledge and experience of the activity and the activity environment to operate in all foreseeable conditions” (Department of Education and Early Childhood Development, n.d.-d, p. 1).

Experience within the same environment can differ greatly and depends upon the activity. For example, the bushwalking and rock-climbing-based activity environments are significantly different from each other. Each activity engages

participants on different planes (horizontal vs vertical) in the same environment location. The documents acknowledge that the type of activity, environment and conditions change the type of experience, knowledge, and skills required by the outdoor educator (Department of Education and Early Childhood Development, n.d.-d; Outdoor Recreation Centre, 2010b).

Upon reviewing the documents, several key messages regarding the knowledge, skills, and practical experience required for HE outdoor education graduates emerge. Firstly, graduates should possess extensive knowledge and understanding of outdoor activities, with a particular focus on safety, risk management, environmental awareness, and location-specific expertise. Secondly, document analysis revealed the importance of qualifications, regulations, and standards in the field, highlighting the need for graduates to obtain relevant certifications and adhere to industry best practices. Thirdly, HE outdoor education graduates are expected to achieve specific learning outcomes, including fostering human/nature relationships, promoting personal development, and managing natural resources. Lastly, practical experience is deemed crucial for graduates, necessitating their active involvement in outdoor activities, participation in practical frameworks like NOLRS, and engagement in activity-specific experiences. In conclusion, the document review identified a comprehensive skill set, adherence to standards, attainment of learning outcomes, and practical experience for HE outdoor education graduates.

Phase 2: Semi-structured Interviews

The purpose of the semi-structured interviews was to explore research questions 1 and 2. Based on the repetition of responses to questions across both cohorts, saturation became evident (Saunders et al., 2018). Saturation occurred after the sixth interview. The characteristics of these interviewees are presented in Table 13.

Table 13*Interviewee Characteristics*

Interviewee	SOIM or MAN	Outdoor education position	Outdoor education delivery style
Adam	MAN	Owner Manager	Multiday residential
Adrian	MAN	Manager	Single-day experience
David	MAN	Senior Manager	Multiday bush camp journey
John	SOIM	Senior Manager	Multiday bush camp journey
Ros	SIOM	Senior Manager	Multiday bush camp journey/Single-day experience
Shane	SIOM	Senior Manager	Multiday residential

These interviewees were managers, two were business owners, four were employees, five were male, and one was female. According to the recruitment selection criteria in regard to the two cohorts, three interviewees were senior outdoor industry members (SOIM), and three were full-time managers (MAN). Equal representation existed across the three outdoor education delivery styles of single-day experience, multiday residential, and multiday bush camp journey. To ensure interviewee confidentiality, pseudonyms were ascribed and other identifiable information such as an interviewee's organisation or location, were replaced with generic terms.

For the purpose of this study, interviewees were suitably experienced and qualified to represent the outdoor education industry in Australia, and, more broadly, internationally. Three of the interviewees held international positions in outdoor education delivery (North America and Europe), and three had previously held academic positions in outdoor education programs in Australia or abroad. At the time of the interviews, all interviewees held multiple roles in the industry and possessed significant professional outdoor education experience (more than 150 years collectively) as practitioners, managers, senior trainers, lecturers, research academics, and peak body representatives (state and national). Two of the interviewees had

completed a master's thesis relating to outdoor education, and one had completed a doctoral thesis relating to outdoor education. The interviewees had been elected to peak bodies and industry groups, including those representing outdoor education, physical education, curriculum design, education and training, outdoor education commercial operators, land management, adventure therapy, outdoor adventure risk management, and residential camping.

Semi-structured Interviews: Themes

Six themes (core codes) were identified through the semi-structured interviews. Four themes were the same as those identified in the document review, namely: practical experience, leader knowledge, outdoor education outcomes, and qualifications, standards, legislation and guidelines. Two new themes were also identified: influences on outdoor education and outdoor educators' personal traits.

The six themes are presented in Table 14, along with the source and reference quantities. Reference quantity (References) indicates how prominent the theme was in the transcripts. The themes are sorted in descending order by reference quantity. The source quantity (*n*) indicates the number of interviewees contributing to the theme or subtheme. Adopting the coding protocol (Babbie, 2020; Bryman, 2016), a coding tree was developed from open codes to axial codes (facets), then to selective codes (subthemes), and finally, to core codes (themes). The coding tree relating to these themes is presented in Appendix Y.

Table 14*Themes of Semi-structured Interviews*

Theme	References	n
Practical experience	184	6
Leader knowledge	178	6
Influences on outdoor education	103	6
Outdoor education outcomes	86	6
Qualifications, standards, legislation, guidelines	37	6
Outdoor educator's personal traits	37	6

Practical Experience

Refers to the direct experiences required of outdoor educators for the development of knowledge and skills. Practical experience also refers to the management, quality, and limitations of practical experience in achieving intended outcomes. The six subthemes relating to practical experience sorted in order of prominence using reference quantity are presented in Table 15.

Table 15*Subthemes Relating to Practical Experience*

Subtheme	References	n
Outdoor education leadership knowledge and skills development	42	6
Management of practical experience	34	6
Leaders' personal development through experience	29	6
Variations in leaders due to experience	30	4
Type of practical experience	28	3
Limitations of practical experience	9	4

Outdoor Educator Knowledge and Skills Development. The interviewees identified that practical experience could 'generally develop' outdoor educators' knowledge and skills. Specific facets of knowledge and skills developed through practical experience were deemed to include community and group development

knowledge, teaching and learning skills, safety skills, risk management knowledge, understanding the context of outdoor education, place-based knowledge, outdoor living and travel skills, interpersonal development experience, and client type experience. Reinforcing the importance of practical experience for obtaining outdoor education knowledge and skills development, John explains that if an outdoor educator teaches experientially, they should learn experientially:

I guess the bottom line as an outdoor educator, it's crucial that if you espouse experiential learning, then that's what you've got to do yourself, you've got to immerse and embrace as much of the experience as you possibly can in order to build the skills, your knowledge, your context, your confidence, your exposure to different environments.

The benefits of using practical experience, as a learning mode for outdoor education leadership knowledge and skill, was commonly cited among the interviewees. The following facets were identified as direct benefits from practical experience: experience transference; linking hard (technical skills) and soft skills (intrapersonal and interpersonal skills); and the development of affective skills. Aligned to this finding, Shane expressed that it is during practical experience that an outdoor educator can link hard skills and soft skills:

And then when you're out there in the field, you're actually on your own journey of personal development, so to me that's where you get trained ... you go out and you put that training into place, but now you're doing it with a focus on educational facilitation, of how you link the hard skill training with the soft skill awareness ... you have to step outside of "I'm being trained" to "Now I have to facilitate".

Shane continued pointing out the outdoor education sector's unrealistic expectations of graduates' total years of practical experience, mentioning the need for in-the-field experience and transferable skills.

So, what we want in the industry is, we want someone with five years' experience of in-field training in the first year, you know, and that's always been the tension ... What you want is someone that soaks it up (practical experience) and is intuitive enough to be able to adapt pretty quickly, be resourceful enough to be able to hit the ground running and be able to understand how it all works.

Shane's statement highlights that graduates require significant practical (in-field) experience to develop outdoor education knowledge and skills, and this experience should take more than 1 year. However, to overcome the perceived practical experience gap, employers seek outdoor education graduates who can transfer learning through intuition and adaption based on experience.

Management of Practical Experience. Refers to frameworks to assure the quality of practical experiences for outdoor educators. The interviewees identified the following facets: the processing of the experience for learning outcomes, a logbook of experience, maintaining the currency of experience, and the Bushwalking and Mountaincraft Leadership Certificate Course as a unique practical education example.

The processing of learning during a practical experience was the most prominent facet drawing comments from five interviewees. They were mainly concerned with the need for a formalised mentoring process, a practical experience learning framework, and the provision of opportunities for feedback and reflection. For example, David identified that his organisation has a system of feedback which could also become an issue:

We have a really strong system for feedback, it's consistent in every program, every week from [organisation leadership positions] it's almost a 360-degree feedback. It can be great, and it can be a real bang as well. It can really scare people and put people off.

David's statement identifies potential negative outcomes that can arise through staff feedback sessions. John outlined that a well-constructed practical experience learning process should include feedback through a combination of tools, including a mentor.

Three of the interviewees discussed logbooks of practical experience and provided similar responses. Logbooks were recognised as necessary tools to record experience and acted as facilitators for further investigation of competence. Adrian highlighted how he sees the role of a logbook in facilitating discussion to assess competence:

Yes, I have asked for logbooks. Have I reviewed them intensely? No, because a lot of the process from my perspective is a one-to-one discussion, an interview process. Like, tell me about your experiences ... And then let's come outside, have you worked with a group? And I'll stand there with you and work with you with this group, excellent. And then what I'm seeing is matching up with everything you're saying.

Leaders' Personal Development Through Experience. Influences on the development of a leader's character and personal traits from participation and reflection on their practical experience are collected in this subtheme. The interviewees identified that an outdoor educator's maturity, confidence, problem-solving skills, and self-sufficiency can develop. Ros provides an example of a leader's personal development through a whitewater paddling analogy:

From an outdoor leader's perspective, they are coming away with strategies to approach it next time, so they might be rehearsing it mentally and going through the process of thinking, "Oh if I approach the rapid from the other side, if I ferry glide in this way then maybe that will have a better outcome in this way."

Ros continued to talk about personal traits:

I also think they are understanding themselves a lot better and thinking, "Actually no, I am good at persevering with things, and I am able to do this really easily". So, they are building an understanding of themselves and their development as well as doing problem-solving and creating mental solutions as to how they could approach something or do it differently in the future.

Variations in Leaders Due to Experience. Refers to the observed differences between leaders based on their amount of practical experience. The interviewees noticed a positive difference in the capacity of an outdoor educator to plan for and implement outdoor education activities, particularly regarding group management. David explained that a person with 2 years' mentored practical experience beyond their training would be able to work at a much higher level than a graduate. David said "a [more experienced] person would work with a group, work independently, work remotely, make sound decisions in very challenging changing environments, with very challenging group dynamics, with multiple things kind of going on".

David then compared an experienced leader to a leader with less practical experience. In doing so expressed that less experienced leaders require more support, and are generally less confident and capable:

A [less experienced] person might still stumble with some of that, and so you might need more safety nets around them, just a few more checks than you might do normally, you might go out and visit, walk around with them ... (perhaps) it's not all firing, it's definitely no mean feat to be a group leader. Like I definitely take my hat off to anybody who comes into that role.

The scope of personal experience of the outdoor educator was identified as important by the interviewees as affecting variations in leader experience. Exposure to a range of places and their corresponding environments and weather conditions, and social contexts including group types, organisations, and outdoor education outcomes, were identified as beneficial by the interviewees. For example, Ros summarised the scope of experiences required when developing knowledge and skills, "It just requires time and the opportunity to be out there in different weather conditions, different environments, different challenges, different levels of comfort, with easy and difficult groups, and being in spaces where you actually feel uncomfortable".

Type of Practical Experience. Six modes of practical experience were identified by the interviewees in this subtheme: education and training provider;

personal experience; workplace probation; work placement; apprenticeship; and seasonal work (summer camp).

Education and training provider referred to practical experiences conducted during an outdoor educator course. Interviewees discussed this mode as a postsecondary formal qualification between Certificate IV to degree level. Practical experience in this mode referred to teaching outdoor educator knowledge and skills in the field. During education and training provider practical experiences, broad outdoor education knowledge is provided with technical skills development, through a range of outdoor education program modalities (residential, base camp, journey). David, who had experience in delivering an outdoor education degree course overseas, explained how the practical experience was conducted as an example of what he expected in Australia:

They [the HE outdoor education students] would go out every week ... We would do formal training but they would consolidate (skill and knowledge). We would run expeditions, we would run an academic focus on the trips, they would also be about consolidating skill, and we would always be engaging the students about maintaining their currency.

Adrian emphasised that the longer a duration of a formal course that involved more practical experiences, the better. Adrian explained that:

... you're immersed in it for a longer period of time. So, you have that reinforcement of like, okay we're about to do a bushwalk we need to do all the emergency management stuff; have I done this? Have I done that? Have I checked the weather? ... Great, we're going to do canoeing, okay the same thing, reinforcing it, ... So, the reinforcing of the knowledge base over a longer period of time.

The importance of integrating practical experience into a degree program was reinforced by David:

I think it's really super important [practical experience] and I know it's really hard for a degree because what you come up against is an academic wall. You also come up against a little bit of that conservatism, certainly in England I got this attitude of a degree is a degree, and it's not a vocational degree. ... But I think on the commercial side if somebody hasn't come out of a degree with enough currency being developed and consolidation, I'm probably not going to employ them.

The interviewees also identified work placement as another type of practical experience connected to education and training providers. Organised and credited placement programs are undertaken in many Australian tertiary programs. The interviewees agreed that work placement is valuable for the development of outdoor educators.

Apprenticeship (internship), probation, and seasonal work were identified as highly desirable workplace-based modes of practical experiences. Although varying in the relationship between employee and employer, what these three forms of practical experiences have in common is a pathway into employment. David explained the benefit of this pathway in the context of an internship:

Somebody who's done a two-year diploma internship, so they've been studying their diploma and working point five in an organisation, in my experience, they will have strong currency, they will be stronger in their consolidation as opposed to somebody who's just come out of a degree or just come out of a diploma.

Limitations of Practical Experience. Interviewees' responses regarding practical experience focused on its benefits rather than its limitations. However, the following limitations of practical experience were noted: leaders still not building the knowledge and skills after extensive experience, the young age and immaturity of graduates from 1-year programs even after practical experience, competency-based training not being a replacement for practical experience, personal practical experience being the least favourable type of practical experience, and negative practical

experiences. Shane provided an example of how practical experience can have the opposite outcome to the one intended:

I've also seen staff that have one or two or three incidents. Might be an asthma attack one week, and it's really put them on edge, way out in the back of nowhere, and they had to deal with the whole scenario. The next week they get a bull ant bite that goes a bit anaphylactic. You can have a spate of things that happen and it just about wears people out, like, emotionally and physically, and yeah, so sort of it (practical experience), can have an opposite affect.

Leader Knowledge

Refers to the knowledge and skills the interviewees identified as recommended or required to undertake the group leading role on an outdoor education program.

Leader Knowledge was the second most frequently coded theme coded on 153 occasions. Five subthemes relating to leader knowledge in order of prominence using reference quantity (Table 16).

Table 16

Subthemes Relating to Leader Knowledge

Subtheme	References	<i>n</i>
Pedagogy	56	6
Program design	36	6
Leadership	29	5
Outdoor living, activity, and travel skills	18	6
Safety and risk management	14	5

Pedagogy. Recognised as the most prominent subtheme, Pedagogical knowledge includes the facets of teaching and learning. The capacity to 'facilitate' (teach) for planned and opportunistic outdoor education learning outcomes, using a range of experiential methods, was identified as a requirement. John pointed out that it is leader facilitation that captures strong outcomes for learners. He explained that "there's a lot of programs in camps that have outdoor activities or adventure activities,

but they don't always ... capture the essence of what's happening for that individual, that group, and often for me that comes down to how it's facilitated by the leaders".

The interviewees identified that outdoor educators require several skills associated with teaching. Outdoor educators should be skilled and knowledgeable in debriefing (processing the experience), educational frameworks, curriculum design, lesson planning, and understanding the role of technology in teaching outdoors.

Interviewees identified experiential learning as the primary mode of learning undertaken by participants engaged in outdoor education experiences, and as such, outdoor educators require knowledge and skills in this pedagogical approach.

Knowledge and skills regarding the specifics of adventure-based learning, managing learning environments, the social context of learning, learning styles, and learning needs were identified as needed by outdoor educators by the interviewees.

Interviewees also identified a difference between outdoor education and other outdoor-based experiences. Adrian proposed that the main difference was experiential learning:

For me personally, it comes down to experiential education, that's what it comes down to, whether that be indoor or outdoor...So mainstream education setting but experiential focus, doing things solely in the classroom. It could be that, or it could be ropes course based group work type of experiences, so out of the classroom.

Adrian's statement provides insight into the importance of experiential learning underpinning outdoor education. In fact, in this manager's opinion, the learning process transcends the importance of the outdoors as integral for the place of learning. Positive opinions regarding the value of experiential learning for learners was common across the interviewees, pointing towards an agreement that outdoor educators required an in-depth knowledge of the learning process.

Ros highlighted the value of knowing educational and social theories:

I really like people (outdoor educators) knowing a whole range of different theories, so ways of engaging with people, ways of empowering people, and also having an

understanding of what some of the social contexts that people bring with them and what that then means. So, when you're working with people that have been homeless, then that's a whole different way of working with them than if they've got drug and alcohol issues, or if they have separated parents or whatever else. Taking on board people's social context I think is really useful.

Program Design. Refers to the knowledge and skills of an outdoor educator that relate to outdoor education program types, the settings of outdoor education, and the technical skills to design programs. The interviewees identified different types of outdoor education programs, separating them into two broad facets. The first facet, venue, was defined by the outdoor education experience location(s): residential camps, centre-based journeys, and journey-based. Different program venues lend themselves to different program types, client groups, and outcomes. For example, the infrastructure associated with residential camps may work well for young or inexperienced groups, larger attendee numbers, and adventure-based learning programs. On the other hand, journey-based programs are well suited to older or more experienced groups, small numbers, and environmental connection outcomes due to those programs' sense of remoteness. The second facet of learning outcomes, was based on the programmed outdoor education learning outcomes, including developing participant wellbeing, building community connections, and offering rites of passage for personal development. The venue and learning outcome program design facets provide insights into how an outdoor educator may approach program design. A venue-based approach may focus on what outdoor education learning outcomes can be met through the resources available at a venue. At the same time, a learning outcome approach will guide what sort of program type is required to support achievement of the learning outcomes.

Leadership. This refers to knowledge relating to the act of facilitating a group of students on an outdoor education program. The interviewees identified four facets of

leadership knowledge: theories and frameworks, people skills, group management, and decision-making.

Across the interviews a high level of agreement was observed regarding the need for an outdoor educator to have a basic understanding of outdoor education leadership theories and frameworks. The following theories (and models) were identified as integral: Kolb's experiential learning cycle, conditional theories of leadership, transformational leadership, situational leadership, contingent theory leadership, Johari window, and Maslow's hierarchy of needs. Given that theories relating to outdoor education leadership are constantly developing, it is unlikely that these theories are a definitive list. However, they do present evidence of the interviewees agreement that outdoor educators need a basic understanding of education theories, models, and social frameworks.

Outdoor Living, Activity and Travel Skills (OLATS). Refers to the knowledge and skills required for an outdoor educator to live and travel in the natural environment and participate safely in an outdoor adventure activity. All interviewees deemed the hard and technical skills underlying OLATS a primary requirement. John described the skill set associated with Bushwalking as those that “most bind together the work with [Ros's organisation's] clients in the outdoors.” At the same time, Ros explained that a “well rounded person that does three or four activities” is more attractive as an employee than someone who has technical skills in only one adventure activity.

Safety and Risk Management. Safety and risk management includes the outdoor educator's knowledge and skills to maintain their own and their participant's physical, psychological, social, and emotional wellbeing while on an outdoor education program. The interviewees identified safety knowledge and skills as an integrated component of the delivery of an outdoor education experience.

While talking about running a high ropes course with a new staff member, Adrian correlated basic skills with safety knowledge and skill. Adrian stated that “I can have somebody who just has the basic skills and the safety knowledge supporting the

program, because there's opportunities like if I'm facilitating a group, they can be organising the safety stuff". Adrian's statement points to safety knowledge and skill falling within a primary set of knowledge and skill for an outdoor educator, a common concept among interviewees. In another example, Adam outlined that the foremost concern of an outdoor educator is safety. Adam said, "Don't worry about talking about leadership or teamwork or anything (if) you haven't covered physical safety and emotional safety".

The interviewees recognised knowledge of risk management to involve the application of risk management theories into dynamic risk assessments during outdoor education programs. David provided examples of how a person with a higher level of dynamic risk knowledge (himself and the interviewer) may differ from one with a lower level (a HE graduate outdoor educator):

So, an example ... we're [canoeing] down a blustery lake, [we] might decide to kind of gain a little distance walking along the bank, and then just poke our heads out again for a bit of adventure and come back in again. The GL might go more out into the middle because they might feel that that's going to be more engaging for the young people. So, I think [regarding] risk management what we're trying to look for are sensible approaches, grounded approaches, to manage risks while they occur.

David is explaining that the experienced group leader has the potential to manage a higher risk level than a graduate. It is through the more experienced group leaders practical experience that they can make good risk management decisions in a complex educational environment with competing requirements.

Outdoor Educators' Personal Traits

Personal traits are patterns of behaviour, emotion, and thought that may be seen as personal tendencies. The traits identified by the interviewees represent personal skills and characteristics that they consider are beneficial for outdoor educators.

The theme outdoor educator personal traits was an unexpected outcome of the interviews. The finding was unexpected because traits were not identified in the literature review, nor were they a focus of the research questions or interview guides. The finding was prominent as all the interviewees identified patterns of behaviour, thought, or emotion that they considered positive for an outdoor educator to possess. During the interviews traits were discussed in parallel to the knowledge, skills, and practical experience required of outdoor educators.

The interviewees discussed outdoor educator interpersonal traits, intrapersonal traits, and general traits. Interpersonal traits include traits benefiting relationships and communication between people, while intrapersonal traits were positive traits of mind, thinking and self-awareness (Table 17). General traits describe a group of beneficial traits but do not describe an individual behaviour, they are a more general concept encompassing several traits.

Table 17

Subtheme Relating to Outdoor Educators' Traits

Subtheme	References	<i>n</i>
Intrapersonal traits	21	6
Interpersonal traits	8	5
General traits	8	4

Intrapersonal traits was the most common subtheme across the interviewees and refers to the display of positive attitudes, passion, self-awareness, confidence, common sense, a preparedness to learn, maturity, and humility.

Displaying a passion for outdoor education and being positive were both seen as favourable states of mind for employment. David stated that he was interested if a potential employee had “a genuine passion” for outdoor education because he believed this was a key factor for workplace success. Adam said that he would “hire for attitude and train for skills” when selecting staff because he could easily teach workplace skills while attitude is much harder to teach.

Two of the interviewees (David and Ros) talked about self-awareness in detail. David explained a leader understanding themselves and their own leadership capacities is integral to managing groups in the outdoors. Ros spoke about self-awareness and the effect lack of self-awareness causes:

I actually think that self-knowledge is probably one of the most important things, if you don't know yourself then you shouldn't be taking people out there. And that means knowing where you're strong, knowing where you're weak, knowing how you engage with people. I think a lot of the bad Outdoor Education I see is from people that let ego get in the way of knowing themselves.

In summary, interpersonal traits refer to traits that benefit relationships and communication between people, including the empathy, an interest in people, credibility, and social intelligence.

General traits refer to a trait that describes a group of traits but does not point to one particular behaviour, thought, or action that can be attributed to just one trait. Four of the interviewees spoke of metatraits and referred to a person being 'well-rounded' and displaying 'life experience'. Ros spoke of a leader having a range of personal attributes, saying that "it's the whole, the well-rounded person I guess is the key." In addition to being well-rounded, the interviewees also emphasised the importance of having an interest in people, a trait involving connecting with others on a personal level and understanding their needs and motivations. It also involves being able to communicate effectively and build strong relationships. Credibility was another trait mentioned that involves being trustworthy, honest, and reliable. It is important for building trust with others and establishing a strong reputation. Finally, social intelligence was highlighted as an important trait for leaders, involving reading social cues, understanding group dynamics, and navigating complex interpersonal situations. Overall, the interviewees emphasised the importance of having a diverse set of traits that allow leaders to connect with others, build trust, and navigate complex social situations.

Influences on Outdoor Education

The third most referenced theme refers to the perceived influence of society and its institutions on the outdoor education sector, school curriculum, and teaching method. Reference quantity has been used to sort the four subthemes relating to order of prominence (Table 18).

Table 18

Subthemes Relating to Influences on Outdoor Education

Subtheme	References	n
Schools and client	46	5
Education system	20	5
Outdoor industry	9	5
Society	9	4

Schools and Client. The influence of clients on outdoor education was the most common subtheme across the interviewees and consisted of two facets: schools and clients. The schools facet was the most prominent, having 41 references compared to five for the facet client general. The dominance of schools compared to other clients is not surprising, considering the selection criteria for the interviewees favouring outdoor education providers for schools.

The interviewees highlighted the influence of schools on outdoor education programs. Curriculum content was identified as a significant factor informing the schools' expectations of outdoor education programs. While discussing the role of the outdoor educator, David highlighted the influence of curriculum:

I'm not sure that they [the outdoor educator] really understand the importance of approaching this like a teacher, because you are a teacher. You are being engaged with learning outcomes with a curriculum, this is coming from a school, it's integrated into their curriculum. The school are looking for us to develop this towards where the kids are heading next, this is part of the sequence of programs.

The VCAA administers the school curriculum for the Victorian State Government. At the time of the interviews, Victoria was using the AusVELS curriculum for the first 11 years of schooling. During the final 2 years of schooling, curricula from the VCE, or Victorian Certificate of Applied Learning (VCAL) were offered. While discussing influences on outdoor education, John had the following to say regarding curriculum:

It really depends, I mean if we talk about at VCE level, then I guess that's dictated by the curriculum authority. And, of course, the rest, that's a work in progress at the moment in terms of what may or may not happen with the national curriculum.

John's comments regarding "what may or may not happen" relate to a curriculum debate at the time regarding outdoor education, the proposed national curriculum, and the future of the state-based AusVELS. The outdoor education curriculum debate in 2010 centred around whether to include outdoor education as a subject for secondary students in a new national curriculum (P. Martin & Hewison, 2010). The AusVELS, VCE and VCAL curricula are administered by the VCAA. Consequently, the VCAA has an indirect influence on outdoor education through its role in curriculum administration across secondary education.

The interviewees also observed that the social context and demographics associated with a school were an influencing factor on curriculum and learning outcomes. Ros explained how the 'social context' of the school could alter the delivery of environmental philosophy between programs:

Certainly, some of the schools were very ecologically against tree felling and deforestation [however] in areas where you worked in schools where they were logging then yeah you don't teach that logging is bad. So, taking on board once again the social context of the students is that you don't put them in a position where they are going to be in conflict with their parents.

Ros' example offers insight into how an outdoor educator may modify the delivery of content based on the perceived influence of social context, even though the outdoor education experience outcomes, activities, location, and staff might be consistent across different schools.

The interviewees identified different people influencing outdoor education programs within a school's community and these have been categorised into three groups: management (principles and the school council), faculty (educators, teachers, outdoor education teachers, outdoor educators), and associates (parents, families, and alumni). There was a high level of agreement among the interviewees that all these groups had an influence on outdoor education. There was also evidence to suggest a complex interaction of influence between the groups. For example, while three of the interviewees mentioned the influence of parent expectations on outdoor education outcomes and safety, David noted that parental expectations are not a direct influence:

For us the parent is one removed, and the real client is the school. And so, for us in [our organisation] that's what will define outdoor education. However, because we have such a long relationship what we're able to do is influence that client.

The influence of individuals, particularly educators, who advocate for outdoor education was identified by interviewees. When asked what influences an outdoor education program, John explained that the outdoor educator's personality, knowledge, skill, and determination have a significant impact on a school's outdoor education program:

To use an example, [private boys' schools] have a long-standing tradition of bushwalking, and have their own bushwalking club that is named after [former key person]. A lot of their old boys come back to help out on programs ... and help out during camps week in leading bushwalks and mentoring and stuff like that. Another example, [private girls' school], has a strong history, the same outdoor education coordinator. [The coordinator] has been there since [date in the 90s] ... and has a strong tradition of outdoor ed, that's heavily supported by their current principal.

The private schools John discusses employ outdoor education organisations to deliver components of their outdoor education programs. John identifies not only the positive pivotal influence of the outdoor educator based at the school, but also the influence of alumni, current students, and the principal. Adam also observed that individual school staff can influence the extent to which an outdoor program is 'purposefully driven' (exceeds expectations of the school community) or is merely a 'must do' component of the school experience:

There are some schools where there's an individual in there that just drives and drives and drives an outdoor rec/ed program. (However) some of them—quite a proportion of them—just I'm absolutely sure, are just driven by "we must do a camp, year-in, year-out".

The client general facet refers to interviewee comments about the influence of clients on outdoor education that could not be attributed to a client type. A common statement in this respect was that outdoor education experiences are primarily constructed based on the outcomes desired by the client.

Education System. This refers to the influences of the government constructed system of education on outdoor education, specifically via curriculum, and via the Department of Employment, Education, and Training.

Similar to the schools and client subtheme, the curriculum facet was identified as a significant influence on outdoor education experiences. According to the interviewees the formalisation of outdoor education in the curriculum has had positive outcomes, including providing a distinctive choice for outdoor education within the spectrum of units offered in senior schooling, and offering Outdoor Education and Environmental Studies at VCE level to support vocational and university entry. Negative outcomes of formalisation in curriculum have included a prescriptiveness that can limit outdoor education program learning outcomes. Ros identified the positive outcomes associated with the formalisation of the VCE Outdoor Education and

Environmental Studies curriculum. Ros said she “thought that [VCE Outdoor Education and Environmental Studies] was a really valuable development of curriculum into schools that engaged with what young people wanted and it was practice-based, and it was really useful”.

The DEECD and its leadership were identified as having influence on outdoor education, specifically via their changing objectives, funding, and staff. John highlighted that “back in the 70s and 80s” DEECD provided service functions, including the department’s school camps division that provided resources for the administration and provision of residential and journey-based outdoor education. John explained that, when the school camps branch closed, a gap opened in professional development and support for schools. As a result, John believed this change influenced the establishment of the Victorian Outdoor Education Association.

Interviewees believed that the DEECD regional leadership had the same level of influence as principals and school boards. This is a significant identification because it is the regional leadership of the DEECD that provides the policy interface between the department and school operations. Therefore, indicating that the DEECD regional leadership can have significant impact on the knowledge, skills and practical experience requirements of outdoor educators

Outdoor Industry. This subtheme captures the influence of outdoor education providers and the trend of freelance outdoor educator employment (casual and seasonal). The interviewees perceived outdoor education providers as having an increased influence on outdoor education since the establishment of a small group of commercial outdoor education providers who now dominate the private provider market. The interviewees identified two negative influences of this change: first, the addition of an external (non-school-based) profit-margin limiting outdoor education service provision; and second, the disconnection of outdoor education provision from the school community and local environment as a by-product of outsourcing. Ros

outlined her observation regarding the negative influence of outsourcing outdoor education:

outdoor education is no longer contextualised within the school. ... The fact that students have lost the capacity to go into their local environment is because, all of a sudden, instead [of being local], they go into the high country, or they are going to the Snowy River.

The interviewees also acknowledged that outdoor education providers have a positive influence on outdoor education. David explained that his organisation had been able to grow long-standing relationships with schools and develop strong partnerships in which outdoor education practice is both explored and evolving. According to Ros, “the convenience of getting a whole year level out at once and ... outsourcing the consequences, the legal liability and the responsibility” were two benefits of schools engaging “really big” outdoor education providers.

The interviewees identified the influence of casual, sessional, and seasonal employment (freelancing) on outdoor education. Ros outlined that, over the course of her career, she had been employed primarily as a freelancer. She outlined that freelancing involves moving from employer to employer, between location, across client groups, and with differing outdoor education objectives. The interviewees did not discuss the effects of such a transient workforce on the quality of outdoor education services.

Society. This references the influence that society has on outdoor education programs and the construction of outdoor education learning objectives to benefit society. The interviewees explained that society’s influence on outdoor education is complex and multilayered. Society was perceived as influencing the whole context of outdoor education, including schools, teachers, parents, employers, governance bodies, and outdoor educators themselves. For example, Adrian endeavoured to draw a comparison between two schools and society’s complex influences:

You can have [Example] High School and you can have [Example] Secondary College which are both public schools, both having teachers, and principals, and both are from the same socio-economic environment, and have completely different focuses and the expectations for their [outdoor education] experiences. Now that's driven by society, that's driven by the teachers within the different environments, it's also driven by the education department.

Here, Adrian recognises society's broad influence on the expectations of a client school regarding outdoor education experiences and specific drivers, namely the school-based decision makers and their environment, and the influence of government departments. However, Adrian and the other interviewees also spoke in general terms, using the term 'society' to describe an all-encompassing influence, rather than specific components that influenced outdoor education.

Outdoor Education Student Learning Outcomes

The fourth most referenced theme that refers to the learning outcomes of students participating in outdoor education experiences. Reference quantity was used to sort the six outdoor outcomes' subthemes in order of prominence (Table 19).

Personal development was the most prominent learning outcome identified through the semistructured interviews, while outdoor activities was the least prominent.

Table 19

Subthemes Relating to Outdoor Education Outcomes

Subtheme	References	n
Personal development	21	5
Community and group development	16	6
School curriculum links	16	3
Wellbeing	11	5
Environmental education	10	3
Outdoor activities	8	4

Personal Development. This sub-theme relates to outcomes incorporating interpersonal development, intrapersonal development, and life lessons, especially lessons relating to diligence and organisation. The interviewees defined intrapersonal development as a student's understanding of their inner self. The interviewees contended that intrapersonal outcomes are developed through the physical and internal journeys associated with outdoor education. These outcomes include resilience, thinking skills, personal problem-solving, and personal reflection. David perceived intrapersonal development to be a learning journey of self:

... learning is a journey of the self, a realisation of who you are and how you relate to others and the place that you find yourself in. So, I think it is really about enabling young people to commence a realisation of their own journey in life, and their core values or beliefs that they hold to, the frame the way that they see the world.

The interviewees identified personal development as outcomes relating to the development of prosocial individuals who possess communication skills, empathy, and understanding. These skills were also related to students' development as leaders.

The interviewees often explained intrapersonal and interpersonal outcomes collectively, suggesting that the learning outcomes are closely integrated. For example, Shane reflected on the learning of a student on an outdoor education program, emphasising the student's internal development and the development of their prosocial behaviour: "he was more tolerant, he was more resilient, he was more aware of his role within the group that he was working with each day."

Community and Group Development. This sub-theme refers to student learning outcomes relating to the temporary communities created during outdoor education programs. David referred to temporary communities as a "short-lived community" bound by the duration of the program.

Group work, a sense of belonging, and socialisation were identified as outcomes associated with community and group development. Group work was seen

to provide a context in which interpersonal and intrapersonal learning could take place. John reflected on a conversation he had with a student after an outdoor education program that highlighted group work outcomes:

He said they all got along well and helped each other out. When one particular boy had challenges, he said it was no big deal. They all just helped him out. This is the part of the camp I was most pleased with, the socialisation, relaxation and teamwork required for these camps to work well cannot be underestimated.

The prosocial behaviours identified in John's example highlight that empathy and understanding of an individual's needs by other group members are key components of the community experience. The high importance John placed on outcomes such as socialisation and teamwork was common across the interviewees.

The sense of belonging experienced by students and their general socialisation were generic descriptions used to identify outdoor education's community and group development benefits. While reflecting on one of the industry positions she held, Ros noted that students "were really struggling to have a sense of belonging or connection" and that the community developed through outdoor education activities provided a positive response to this problem. The terms socialisation, social, and community were used regularly and by all interviewees to highlight the broad outcomes of learning associated with living in temporary communities.

While group work, a sense of belonging, and socialisation were identified as outcomes relevant to outdoor education programs, David felt that the essence of community and group development was greater than its parts:

Outdoor ed is not just about teamwork and leadership which would be the normal sort of approach, I think it's much more about community and how we live and engage with others. How we adapt ourselves ... without compromising our own values and beliefs and being true to who we are.

School Curriculum Links. This sub-theme refers to the formal connections that interviewees identified between outdoor education programs and other school subject areas, and to areas that interviewees identified as not connected. The interviewees identified that links existed between the AusVELS subject areas of physical education, history, and geography. David recounted a conversation with PE teachers identifying agreement on the benefits of cross-curriculum teaching that had emerged on a paddling program. David pointed out that, in his experience, schools do not engage an outdoor education provider to deliver a program that has a curriculum focus on a particular subject area instead, cross-curricula outcomes are sought.

The diversity of outcomes associated with outdoor education identified by interviewees implies a hidden cross-curriculum, a loosely agreed set of curriculum outcomes that do not sit neatly within one subject. Because there is no dedicated P–10 AusVELS outdoor education curriculum, the outdoor learning outcomes are embedded in other subject areas. These cross-curricular outcomes are then used to justify the outdoor education program and its outcomes to schools.

The interviewees identified curriculum areas they believed were not achieved through the outdoor education experiences they provided. Adrian identified science, environmental education, health and physical education, geography, and connection to place as areas not linked to his organisation's outdoor education experiences, however he noted they were a “by-product ... not necessarily a focus.”

Wellbeing. This sub-theme refers to two wellbeing outcomes (psychological, physical) that interviewees primarily described as activities undertaken on programs. Psychological wellbeing activities included relaxation, meditation, learning to be, slowing down, and spiritual contemplation. Physical wellbeing activities included healthy eating and physical activity. Five out of the six interviewees commented on either or both psychological and physical wellbeing as an important outcome of outdoor education experiences

Environmental Education. This sub-theme comprises two areas: environmental awareness and environmental knowledge. Environmental awareness refers to outcomes regarding sustainability and sense of place. Environmental knowledge refers to students developing an understanding of the physical, biological, and ecological environments associated with outdoor education programs. David identified how he framed outdoor education programs to achieve environmental awareness. He recognised that outcomes relating to environmental awareness are deeply connected to how a student builds a relationship to a place. David explained that “one of the things I resonate with is dwelling as opposed to journeying, and what that brings about when we dwell, when we truly engage with the landscape, as opposed to being a tourist”.

Outdoor Activities. The outdoor activities sub-theme was the least referenced outdoor education outcome, which was not surprising because many of the interviewees referred to outdoor activities as a tool for other outcomes. Bushwalking, canoeing, rock climbing, skiing, mountain biking, and whitewater rafting were common outdoor activities mentioned by the interviewees, along with OLATS. John pointed out that OLATS are an important component of basic skills in outdoor education for students: “Just simple things about how they get themselves organised, organised for packing, organised for carrying, organised for cooking and tent pitching ... All those sorts of things are key”.

Qualifications, Standards, Guidelines and Legislation

This theme refers to local, state, and federal government acts, legislation, laws, bylaws, licences, and mandatory compliance requirements relating to outdoor education programs and workplaces. Qualifications was the most prominent subtheme (Table 20). Interviewees identified qualifications offered by peak activity bodies and formal education providers within and external to the AQF (Department of Education Skills and Employment, n.d.-a). Operational requirements for organisations conducting

outdoor education on public land enforced through the associated government agencies are included in this theme. These requirements are captured in the standards, guidelines and legislation subtheme.

Table 20

Subthemes Relating to Qualifications, Standards, Guidelines and Legislation

Subtheme	References	<i>n</i>
Qualifications	26	6
Standards, guidelines and legislation	22	4

Qualifications. Acknowledged by every interviewee and the most referenced was the subtheme qualifications. Adventure activity qualifications were highly valued by interviewees. The interviewees all indicated that activity qualifications are required when recruiting people to deliver adventure activities to students. The interviewees generally held the expectation that outdoor educators require a formal qualification in adventure activities. Explaining his recruitment process, John stated he was “looking for certificates for various activities and stuff like that.” On the other hand, Ros also pointed out that it was her understanding that “for many years ... you don’t actually have to have any qualifications to take people outdoors”. Ros’s statement highlighted a point of contention among the interviewees; that they sought formal qualifications while also seeming to allow exceptions.

Some of the interviewees spoke of their own study experiences and acknowledged the value of university degrees for preparing students for careers in outdoor education. David, John, and Ros spoke of the in-depth knowledge regarding outdoor education that can be developed through a University Degree. In contrast, Ros pointed out that it was difficult for her to develop technical skills in adventure activities when she was studying, which she viewed as an obvious disadvantage for future employment. Only David mentioned VE Diplomas. He believed that some of his staff who had completed a diploma did not have the training to understand the educational

significance of their role as a group leader. Similar to adventure activity qualifications, neither university nor VE qualifications were identified as a requirement to work as an outdoor educator by the interviewees.

Standards, Guidelines and Legislation. Documents within this sub-theme refers to documents that guided or informed practice in relation to outdoor education programs. The interviewees identified the AAS, Building codes, Worksafe guidelines, and Education Department guidelines as relevant standards and guidelines relating to outdoor education.

The AAS were perceived as an important set of industry standards for outdoor education organisations and leaders to follow. Shane stated that "You can't work outside of the Australian Activity Standards" as they are directly related to land management and insurance compliance. Every interviewee conveyed the same sentiment about compliance, despite the AAS being 'voluntary' for led outdoor adventure activities with dependent participants (Outdoor Council of Australia, n.d.-a).

Building codes related to the building of residential venues and facilities for adventure activities. Residential camping facilities must comply with Australian Standards for the planning, construction, and operation of commercial facilities. Nonetheless, Adrian observed that the standards for adventure activity facility construction (such as Challenge Ropes Courses) are often not legislated. In the absence of legislation, guidance relies on industry best practices and their endorsement by Australian and international peak bodies.

Worksafe guidelines refers to the requirement to comply with occupational health and safety responsibilities standards. Work safety is a mandatory responsibility of all Australian employers and employees, and is legally codified at both state and federal levels (WorkSafe Victoria, n.d.). Shane perceived that compliance with work safety responsibilities was based on "risk aversion" and was "changing the whole environment" of outdoor education. This important statement by Shane shows a

contradiction compared to the importance placed on the safety of students by the interviewees.

Education Department guidelines include those pertaining to the planning, organisation, implementation, and review of outdoor program experiences (Department of Education and Training, n.d.-c). Education Department guidelines also include the knowledge, skills, and practical experience expected of leaders facilitating outdoor education programs (Department of Education and Training, n.d.-a)

Legislation relates to state or federally legislated (mandatory) compliance requirements for outdoor education organisations and leaders. Interviewees identified legislation relating to child safety, including working with children and national criminal police checks, and work safety, including occupational health and safety legislation. The interviewees did not discuss specific legislation for adventure activities or program delivery, such as laws relating to marine safety, land access, driving and transport, food safety, and chemical storage. Legislation was spoken of in general terms, as something requiring compliance.

Merging of Qualitative Findings

Findings from the comparison and merging of the two qualitative phases are presented in three parts within this section. The first presents findings regarding the knowledge and skills required of HE outdoor education graduates. The second part presents findings regarding practical experience. The third presents findings relating to the relationship between practical experience and the knowledge and skills required of HE outdoor education graduates.

Two themes relating to the knowledge, skills, and practical experience of outdoor educators inductively emerged from the data merging. Outdoor educator knowledge and skills is the first theme and consists of 13 subthemes that from here on will be termed as *elements* of knowledge and skills. Practical experience is the second theme and contains two subthemes (practical experience learning outcomes and

andragogy) that from here on will be termed as *components* of practical experience.

The comparing and merging process was undertaken guided by the process outlined in the methodology.

Findings Regarding the Knowledge and Skills Required of Higher Education

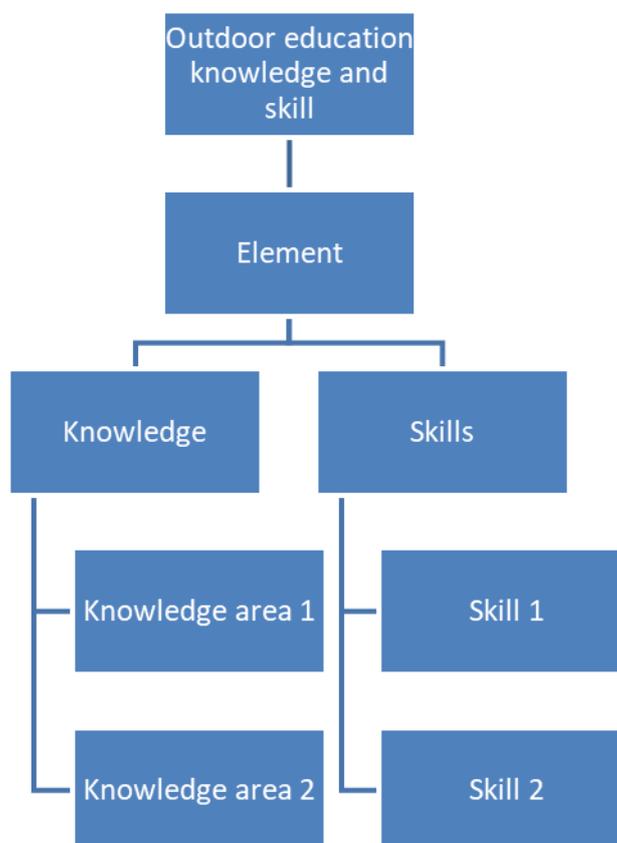
Outdoor Education Graduates

The knowledge and skills required of outdoor education graduates developed through comparing and merging codes found in Phases 1 and 2 of the study are presented in this section. Thirteen elements of knowledge and skills were identified as requirements for HE outdoor education graduates. The elements are the definable category in which the knowledge and skills requirements reside, for example, the elements of safety, and human/nature relationships.

The AQF definitions of what is knowledge and what is skill were used to categorise codes into knowledge or skill. The AQF was applied as it is the current structure of postsecondary education in Australia, which is the context of this study (Department of Education Skills and Employment, n.d.-a). According to the AQF:

Knowledge refers to what a graduate knows and understands and it can be described in terms of depth, breadth, kinds of knowledge and complexity ... Skills refer to what a graduate can do. They can be described in terms of kinds and complexity and include cognitive skills, technical skills, communication skills, creative skills, interpersonal skills and generic skills. (Department of Education Skills and Employment, n.d.-a, pp. 91-101)

Each element has associated knowledge and skills. A visual representation/conceptualisation of the elements, knowledge, and skills structure for HE outdoor education graduates is provided in Figure 10. The core concept (outdoor education knowledge and skills) sits at the highest level, the elements at the second level, and the knowledge and skills groups are equally presented at the third level beneath the elements. The specific knowledge and skills are presented at the fourth level.

Figure 10*Elements, Knowledge, and Skills Structure*

The elements are presented in Table 21 with the associated knowledge and skills. The 13 elements include community and group development, environmental science, health and wellbeing, human/nature relationships, outdoor education leadership, outdoor educator personal traits, outdoor living and journeying, participant personal development, place-based knowledge, risk management, safety, technical outdoor activity instruction, and technical outdoor activity skills. 12 elements emerged from Phase 1 the study, while the element outdoor educator personal traits emerged only from the semi-structured interviews (Phase 2). The decision by the researcher to categorise outdoor educator personal traits as a knowledge and skills element was due to the interviewees discussing the identified patterns of behaviours, thoughts, and emotions (traits) within the context of outdoor educator knowledge and skills. The researcher found that the line was blurred regarding what the interviewee identified as

a trait characteristic and what was teachable knowledge and skill. For example, empathy was explained by the interviewees as the cognition of someone else's circumstances achieved through applying skills including communication and observation, as well as an emotional experience that promotes caring behaviour in the leader. Although trait characteristics may be difficult to define, the intrapersonal and interpersonal knowledge and skills that manifest in the behaviour associated with a trait are definable and teachable.

Table 21

Elements, Knowledge, and Skills Required of Higher Education Outdoor Education Graduates

Element	Knowledge	Skills
Community and group development	Theories and concepts regarding community development, stages of group development, temporary communities, relationship building and maintenance.	Facilitating community, group development, and associated learning outcomes. Facilitating group goal setting, group decision-making strategies, conflict resolution and strategies, and developing empathy for others.
Environmental science	Environmental science theory and principles including basic ecological principles, landscapes, flora, fauna, human impacts, and land management.	Frameworks to interpret natural environments Communicating scientific principles to a group.
Health and wellbeing	Theory and principles of health and wellbeing. Concepts of challenge, risk, safety, human development, nutrition knowledge, physical health, and mental health.	Communicating principles and facilitating practices concerning health and wellbeing during outdoor education programs regarding: behaviours to enhance and promote safety in young people, healthy menu planning, cooking and food preparation, physical activity planning and facilitation, safe social practices, positive mental health practices (relaxation, meditation), encouraging the benefits of active living.

Element	Knowledge	Skills
Human/nature relationships	<p>Understanding of the theories and concepts regarding ekistic relationships and their relationship to outdoor education.</p> <p>Personal and social responses to risk and nature, perceptions of environmental impact, concepts of caring for the environment, indigenous connections to land, environmental philosophy, and ethics.</p>	<p>Facilitation of ekistic relationship through outdoor education programs.</p> <p>Facilitation of theoretical, philosophical, and ethical concepts.</p> <p>Practical technical skills for sustainability and conservation practices.</p>
Outdoor education leadership	<p>Understanding of pedagogical theories, learning theory, leadership theory, curriculum, outdoor education career outcomes for students, ethics, responsibilities of leaders, and group dynamics in an outdoor environment.</p>	<p>Applying teaching techniques (communication, facilitation, assessment) to achieve outdoor education outcomes.</p> <p>Preprogram planning and design, leadership (decision-making, problem-solving, conflict resolution, logistics, coordination), reflective practice for self-awareness, professional conduct, managing community relationships, managing client relationship, and developing experience-based judgement.</p>
Outdoor educator personal traits	<p>Intrapersonal awareness and maturity are observable in behaviour beneficial to self, students, and the workplace.</p>	<p>Interpersonal adroitness benefits self, students, and the workplace.</p>
Outdoor living and journeying	<p>Personal awareness to live and travel safely and with minimum harm in outdoor environments.</p>	<p>Personal technical ability in lightweight travel (particularly bushwalking and camping), bushcraft, minimum environmental impact skills, adventure activity skills suited to the environment (mountains, rivers, deserts, oceans, lakes).</p>
Participant personal development	<p>Understanding of personal development theory including theories and concepts regarding identity, resilience, leadership, challenge, and facilitation.</p>	<p>Facilitation abilities to develop intrapersonal and interpersonal outcomes for students relating to personal challenge, prosocial behaviours, resilience, personal knowing, affective awareness, goal setting, value development, problem-solving, assertiveness, communication, leadership, and tolerance.</p>
Place-based knowledge	<p>Understanding the geography of a place and historical and contemporary narratives associated with the location.</p>	<p>Ability to research and interpret landscape and facilitate learning about natural history, human history, and the current and previous management of a place.</p>

Element	Knowledge	Skills
Risk management	Understanding risk management theories, legal responsibilities, and risk management frameworks.	Capacities include assessing risk, planning risk treatment, documenting risk management plans, emergency response planning, and evacuation procedures.
Safety	Understanding of safety policies, procedures, and response protocols.	Aptitude in wilderness first aid, activity and environment specific rescue skills, group crisis management, search and rescue, mental health first aid.
Technical outdoor activity instruction	Understanding theories of adventure activity education, guiding, and instructing outdoor adventure activities.	Ability to manage a group to effectively teach the technical skills of an outdoor activity, session planning, providing safety briefings for an activity, applying a variety of instructional techniques, selecting teaching and learning locations, planning technical skill progressions, and communicating environmental impact reduction techniques relating to the activity.
Technical outdoor activity skills	Awareness of personal abilities in the context of the outdoor adventure activities being undertaken on an outdoor education program.	Technical ability regarding the outdoor adventure activities being undertaken in an outdoor education program to a level of competence in which the leader can participate safely and efficiently.

The researcher recognised the need to distinguish between safety and risk management due to their distinct conceptualisations and implications within findings. Safety refers to the practical skills and measures implemented to prevent physical or emotional harm to participants. It involves ensuring a secure environment and adhering to established guidelines and procedures. On the other hand, risk management encompasses the theoretical understanding of potential risks and the strategic management practices employed to minimise and mitigate those risks. The separation of safety and risk management emerged due to the examination and analysis of the research findings. Specific references were to differentiate between these two concepts, as supported by evidence from the documents and interviews. For instance, examples from semi-structured interviews highlighted how safety knowledge and skills are associated with practical aspects of ensuring participant wellbeing, while risk

management involves applying theoretical risk assessment principles during outdoor education programs.

By treating safety and risk management as distinct elements, the study aimed to provide a more comprehensive and nuanced understanding of their contributions and interconnectedness in outdoor education. This approach allows for a focused exploration of the specific knowledge and skills required for ensuring participant safety and managing potential risks effectively. By addressing these elements separately, the study aims to contribute to the development of comprehensive and targeted strategies for promoting safety and effective risk management practices in the outdoor education sector.

Evidence obtained from data analysis clearly indicated the necessity to treat human/nature relationships and place-based knowledge as separate elements. Human/nature relationships encompass the personal and experiential aspects of how school students and outdoor educators engage with and emotionally connect to nature. In contrast, place-based knowledge involves the application of various perspectives, such as experiential knowledge, environmental and natural history, and ecological, social, and economic perspectives, to develop a deeper understanding of a specific place. The approach not only highlights the significance of these concepts in environmental sustainability and the wellbeing of human societies but also emphasises the value of local context and intricate relationships between humans, their culture, and the natural world. Treating human/nature relationships and place-based knowledge as separate elements enables a nuanced examination of the pedagogical considerations and distinct differences associated with human/nature relationships and place-based knowledge within the framework of the study. Outdoor Education Knowledge and Skills Elements Embedded into the Questionnaire.

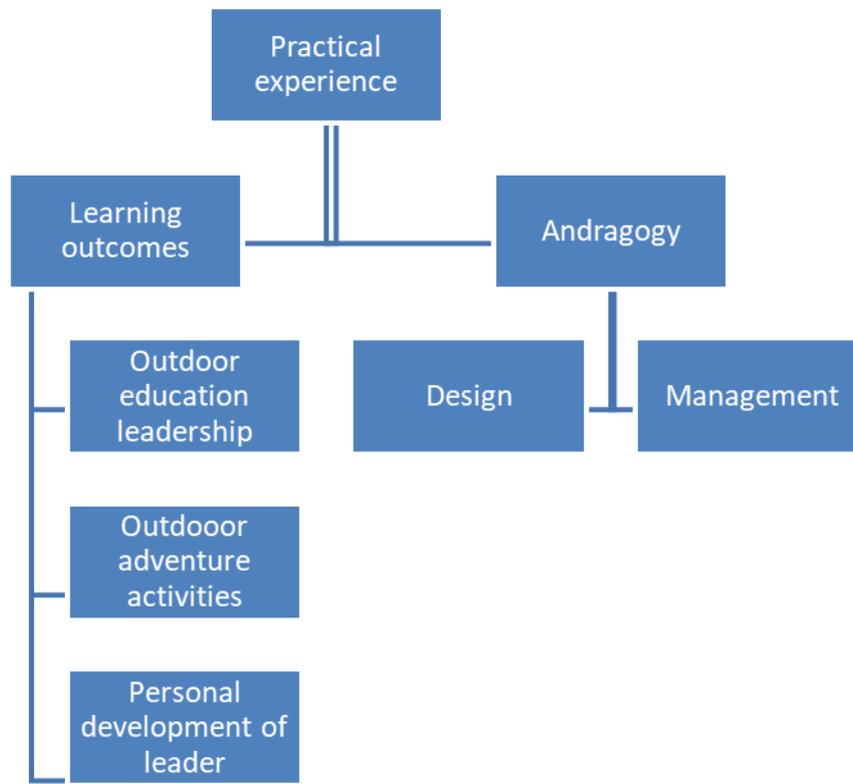
One purpose of comparing and merging the qualitative data was to identify and define variables regarding the knowledge and skills required for inclusion in a quantitative survey. Twelve of the outdoor education knowledge and skills elements

were defined into statements for inclusion as variables within Likert scales. The definitions used in the questionnaire and derived from Table 21 can be seen in Appendix Q. The 13th element, outdoor educator personal traits, was not included in the Likert questions. Because the element only emerged from Phase 2, the researcher deemed it pertinent to further define the element through collecting qualitative data using a short answer question. Outdoor educator personal traits were defined within that question as observed actions, attitudes, and behaviours (Appendix O, Block 4).

Findings on the Nature of the Relationship between Practical Experience and Higher Education Outdoor Education Graduate Knowledge and Skills

An understanding of the relationship between practical experience and knowledge and skills of outdoor education emerged inductively from the comparison and merging of codes from Phases 1 and 2 of the study. Practical experience (core theme) refers to what, how, where, and why of practical field experience in the development of the knowledge and skills required of HE outdoor education graduates. Two components of practical experience were identified: learning outcomes and andragogy. Learning outcomes comprise three learning outcome groups for HE outdoor education graduates: outdoor education, outdoor adventure activities, and personal development of the leader. Andragogy comprises two teaching and learning areas: design and management. Andragogy is the theory and practice of educating adults (Knowles et al., 2020).

The structure of practical experience findings is shown in Figure 11. Practical experience is the top level. Level 2 consists of two components learning outcomes and andragogy. Level 3 consists of the learning outcomes: outdoor education leadership, outdoor adventure activities, personal development of the leader, and the andragogy areas of design and management.

Figure 11*Components of Practical Experience****Practical Experience Learning Outcomes***

Three learning outcome groups were identified: outdoor education leadership, outdoor adventure activities, and personal development of leader. The practical experience learning outcomes that emerged from the document themes are identified in Table 12, and interview themes in Table 15. The learning outcomes and their associated knowledge and skills are presented in Table 22. Outdoor education was identified as non-adventure activity learnings where specific knowledge and skills are developed through field-based learning. Outdoor adventure activities relate to the development of specific knowledge and skills gained through field-based learning. The knowledge and skills include the capacity to undertake and lead an adventurous activity safely, plus a deep understanding of the activity environment. The need for this experience was noted as a requirement for three to four activities recognised on the list of adventure activities identified in Appendix X. The personal development of the leader

relates to the development of a leader's personal skills. The leader's personal skills were identified as developing through participation in outdoor education experiences as a participant during formal learning, as a leader in the workplace, and through personal outdoor experiences.

Table 22

Practical Experience Learning Outcomes

Learning outcomes	Knowledge and skills
Outdoor education	Knowledge and skills development such as community and group development knowledge, teaching and learning skills, safety skills, risk management knowledge, leadership, understanding the context of outdoor education, place-based knowledge, outdoor living and travel skills, interpersonal development experience, and client type experience.
Outdoor adventure activities	Instructional and technical skills of outdoor adventure activities. For example bushwalking, skiing, canoeing, rock climbing, whitewater rafting, high ropes
Personal development of leader	Intrapersonal and interpersonal development, such as maturity, confidence, problem-solving, and self-sufficiency.

Practical Experience Andragogy

Practical experience andragogy emerged as the second component of outdoor educators' practical experience and refers to the ways in which practical experience is designed, delivered, and managed to achieve practical experience learning outcomes. Two areas relating to practical experience andragogy emerged from the findings: learning design and learning management (Table 23). The design and management components are based on Knowles et al. (2020) four principles of adult education: adults need to be involved in the planning and evaluation of their education, experience provides the basis for the learning activities, adults are interested in learning that has immediate relevance and impact to their life, and adult learning is problem solution centred rather merely content-oriented.

Table 23*Practical Experience Andragogy*

Andragogy	Description
Design	<p>MODE: Including education and training provider simulations, personal experience, workplace probation, work placement, apprenticeship, internships, and seasonal work.</p> <p>SCOPE: Including organisation context, program type, natural environment, different types of groups, weather conditions, ecosystems, physical and psychological and emotional levels of comfort, and varying challenges.</p> <p>AMOUNT: Duration, frequency, and cumulative time.</p>
Management	<p>Administration and organisation</p> <p>Validation</p> <p>HE educator/training staff qualifications</p>

Learning design refers to the concrete variables connected to both the educational philosophy of practical experience and the pragmatics of design. Mode, scope, and amount are features of design and each feature is presented in capitals in Table 23, with examples. Findings revealed that society (defined by the social ecology of HE outdoor education undergraduates, see Figure 5) perceives that the design of a practical experience (mode, scope and amount) has an impact on the perceived competence of an HE outdoor education graduate.

The mode defines the varying types of practical experience, from formal education to informal personal trips. Mode is also the different relationships an outdoor education undergraduate may have with a practical experience context, such as personal experience, intern, and employee. Scope refers to the variables of practical experience within the mode. These variables influence the learning outcomes and include the learning environment, natural environment, challenge levels, and variability of experiences. The amount refers to the duration, frequency, and cumulative time of practical experience.

Management of practical experience refers to the administration and organisation of practical experiences to optimise learning outcomes. Management also

includes risk management, validation, and the moderation of formal tertiary practical experiences.

Data analysis revealed valuable insights into the nature of the relationship between practical experience and the knowledge and skills of HE outdoor education graduates. Through an inductive analysis, two key components of practical experience emerged: learning outcomes and andragogy. The data indicated that learning outcomes in practical experience can be categorised into three distinct groups: outdoor education leadership, outdoor adventure activities, and personal development of the leader. These findings were derived from the document and interview themes, demonstrating the alignment between theoretical frameworks and real-world experiences. For instance, outdoor education was identified as a non-adventure activity focused on developing specific knowledge and skills through field-based learning. Similarly, outdoor adventure activities were found to enhance expertise in various pursuits, encompassing instructional and technical skills, and a comprehensive understanding of the activity environment. The personal development of the leader was linked to the cultivation of intrapersonal and interpersonal skills, such as maturity, confidence, problem-solving, and self-sufficiency.

Furthermore, the analysis revealed the significance of practical experience andragogy, that encompasses the design, delivery, and management of practical experiences. Two distinct areas within andragogy emerged from the data: learning design and learning management. Learning design refers to the concrete variables associated with the educational philosophy and practical considerations of the experience. The mode, scope, and amount of practical experience were identified as crucial factors influencing the perceived competence of HE outdoor education graduates. The mode represented different types of practical experiences, ranging from formal education to personal trips, while scope referred to the variables within each mode that influenced learning outcomes—the duration, frequency, and cumulative time of practical experience constituted the amount. On the other hand, learning

management encompassed the administrative and organisational aspects of practical experiences, including risk management, validation, and the moderation of formal tertiary practical experiences.

The analysis of the data clearly demonstrated the substantial impact of practical experience on the acquisition of knowledge and skills among HE outdoor education graduates. By examining the learning outcomes and andragogy components, the data provided a comprehensive understanding of the nature of the relationship between practical experience and the development of essential attributes in the field. The findings underscored the vital role of practical experience in equipping graduates with the necessary competencies to thrive as outdoor educators.

Practical Experience Embedded Into the Questionnaire

One purpose of comparing and merging the qualitative data was to identify and define variables relating to practical experience for inclusion in a quantitative survey. In the survey, the term practical experience was defined using the definitions derived in Table 22, Table 23, and the literature review, and the definition in Appendix R. The practical experience variables were identified using definitions derived in Table 22 and Table 23. For example, the practical experience learning outcomes of outdoor adventure activities was defined as instructional and technical skills of outdoor adventure activities noted in Table 22.

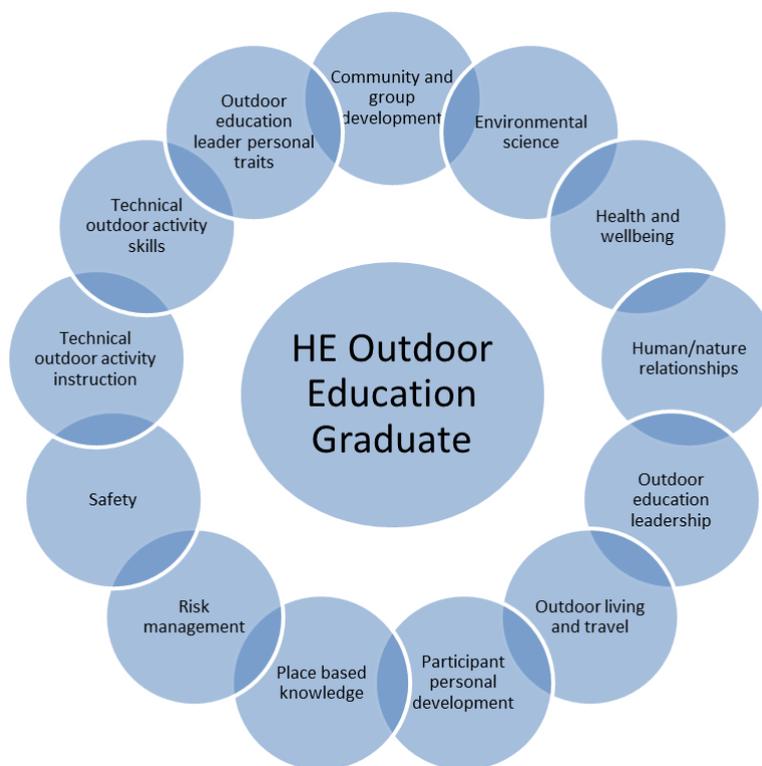
Chapter Review

The qualitative findings address the first two research questions. Thirteen knowledge and skill elements required by HE outdoor education graduates were identified through merging findings from the documentary analysis ($n = 218$) and semistructured interviews ($n = 6$) (Figure 12). The elements identified are community and group development, environmental science, health and wellbeing, human/nature relationships, outdoor education leadership, outdoor educator personal traits, outdoor living and journeying, participant personal development, place-based knowledge, risk

management, safety, technical outdoor activity instruction, and technical outdoor activity skills.

Figure 12

Elements of Knowledge and Skill Required of Higher Education Outdoor Education Graduates



In addition to the requirements of knowledge and skills for HE outdoor education graduates, five practical experience themes grouped into components of learning outcomes and andragogy were identified (Figure 11). The three learning outcomes components for HE outdoor education graduates were, outdoor education leadership, outdoor adventure activities, and the personal development of leader (Table 22). The andragogy component includes the design and management of practical experience (Table 23). Findings from the two qualitative phases were used to inform the development of Phase 3, the quantitative online questionnaire. The results from Phase 3 are presented in the following chapter. The results from Phase 3 build

upon the findings from the qualitative phases and generalise the findings to a large sample group ($n = 134$).

Chapter 6. Quantitative Results

The results from the quantitative phase of this mixed methods study, the online questionnaire, are presented in this chapter. First, the chapter reports on the preparation of data and information regarding the sample group. Second, it presents the results of the analysis for demographics, graduate outdoor educators, and between-group demographic comparison.

Preparation of Data

Four steps of quantitative data analysis were applied to the study. These included: data entry, data inspection that included locating and amending errors in the data, managing missing data, and identifying outliers, data exploration and description that focused on describing the resultant data using ranges, proportions, and measures of central tendency, and conducting statistical tests that involved comparing groups using the nonparametric Mann-Whitney U Test.

Data Entry (Step 1)

Participants entered data directly into the Qualtrics online survey software. After closure of the survey response period, the researcher visually inspected the raw Qualtrics file for glaring errors; none were detected. The researcher then imported the data into SPSS software and assigned identifying information to questionnaire response variables.

Data Inspection (Step 2)

Data inspection involved assessing the data quality for anomalies and then applying treatments, taking three actions: a) screening and cleaning data, b) locating and amending errors in the data, and c) identifying and managing missing data.

Screening and Cleaning

The data was visually inspected in the SPSS data viewer to visually identify input errors that may have occurred during data entry, none were identified.

Locating and Amending Errors in the Data

After visual inspection, variables were assessed by descriptive analysis. This analysis produced a maximum and minimum value for each variable to assess if data fell in the expected range of responses. All data fell within the expected range for each variable.

Missing Data

The researcher inspected the data for missing data due to participants not responding to a question. The researcher identified an increase in nonresponses to questions as participants advanced further through the questionnaire. Missing data was treated as per the methodology. Participants were excluded from analyses if missing data was evident from 50% or more of their total questionnaire. In addition, if a participant completed more than 50% of the total questionnaire yet missed entering data for some survey items, the participant was excluded from the analysis for that question item.

Data Exploration and Description (Step 3)

Outliers were checked, despite the use of categorical and nominal data, in case there were survey, software, or data entry errors. Data description is presented in the results of analyses on demographics and HE outdoor educator graduates.

Conducting Statistical Test (Step 4)

The Mann-Whitney U Test was applied to compare the difference between the three comparison variables. The three comparison variables were organisational seniority, education, and work type.

No statistical significance was detected. Consistent with the study methodology, no effect size was calculated because no statistical significance was detected. Due to no statistical significance being detected, results from the statistical test are not presented in the results of analyses: a between-group demographic comparison.

Sample

Three hundred and ninety-eight participants entered the questionnaire landing page, of whom 167 did not answer the consent question and exited the questionnaire incomplete, and seven answered 'no' to the consent question and exited the questionnaire. As per the study selection criteria, 16 participants employed by organisations that did not provide outdoor education services to school-aged participants in Australia were removed. A further 85 participants had completed less than 50% of the questionnaire and were removed. Three sets of demographic data, 'organisational seniority' (managers versus non-managers), 'education' (VE qualification versus HE qualification), and 'work type' (residential camping versus bush camping journey) were used to create six groups (two groups per set). To establish two groups based on HR responsibility required for a between-group statistical analysis, three participants who did not respond regarding their HR management responsibility were removed from the study. Removal involved isolation of the excluded participant's data from analysis into a separate database. Data was retained for recording purposes. A total of 134 participants were left in the sample.

Results of Analyses: Demographics

Demographics, including outdoor education employer information, is presented in this section. Descriptive analysis was used to describe the participants' demographics and their organisation. All participants ($n = 134$) completed the demographic and organisation questions.

Participant Gender, Age, Education, and Employment

Results show there was a significant difference between participant gender, with two thirds identifying as 'male' (68%, $n = 91$), and one third as 'female' (32%, $n = 43$) (Table 24). No participants identified as 'other'. The majority of participants (84%, $n = 112$) were aged between 21 and 50 years. The most-reported age was '21–30 years' (39%, $n = 52$), followed by '41–50 years' (22%, $n = 30$), and '31–40 years' (21%, $n = 28$).

Education attained was reported by participants, providing insight into the highest general AQF award level achieved. HE sector qualifications (undergraduate or postgraduate) were achieved by 79% of participants ($n = 106$). The most common HE qualification was an undergraduate 'Bachelor's degree' (43%, $n = 58$), followed by 'HE postgraduate degree' (36%, $n = 48$). A fifth of participants (21, $n = 28$) had completed a VE award as their highest qualification.

Outdoor educators can attain qualifications from courses across the AQF, including VE certificate programs focusing primarily on outdoor recreation and HE courses focused on outdoor education. Most participants (57%, $n = 76$) had attained a HE outdoor education/recreation qualification (AQF Levels 7–9). While 43% of participants ($n = 59$) had undertaken VE courses (AQF 1–6). The four highest outdoor education/recreation qualifications attained were 'Bachelor's degree' (32.8%, $n = 44$), followed by 'Diploma' (17.6%, $n = 24$), 'Postgraduate Certificate or Diploma' (17.6%, $n = 24$), and 'Certificate IV' (16.0%, $n = 21$). Finally, each participant's HR management role provided insight into their management level within their organisation; almost three quarters of participants identified as 'managers' (72.4%, $n = 97$).

Table 24*Demographic Results*

Demographic	<i>n</i>	%
Gender		
Male	91	67.9
Female	43	32.1
Other		0.0
Age		
18–20 years	2	1.5
21–30 years	52	38.8
31–40 years	28	20.9
41–50 years	30	22.4
51–60 years	19	14.2
60–65 years	2	1.5
Under 18 years	0	0.0
Over 65 years	1	0.7
Highest general education		
Secondary education	0	0.0
A VE course	28	20.9
A HE bachelor level course	58	43.3
A HE postgraduate level course	48	35.8
Highest Outdoor education/Recreation course		
Secondary school outdoor education/recreation course	1	0.8
Certificate I	0	0.0
Certificate II	2	1.6
Certificate III	9	6.4
Certificate IV	21	16.0
Diploma	24	17.6
Advanced Diploma or Associate Degree	1	0.8
Bachelor Degree	44	32.8

Demographic	<i>n</i>	%
Postgraduate Certificate or Diploma	24	17.6
Honours Degree	3	2.4
Masters	5	4.0
PhD	0	0.0
Staff management experience		
Manager	97	72.4
Nonmanager	37	27.6

Organisation of Respondents

The remainder of this section provides organisational information relating to where participants were employed. Results regarding the organisation's program and client type, location, and size provide insight into the outdoor education sector, and representation of the outdoor education subsectors within the sample group.

Outdoor Education Program and Client Type

The type of outdoor education program provided by participants' organisations, and their client type, are sorted in descending order by percentage (Table 25). The top three programs provided were 'multiday bush camping journey' (48 %, $n = 64$), 'multiday residential camp' (29%, $n = 40$), and 'single-day one-off experience' (14%, $n = 19$). 'Urban outdoor education experiences', 'other', and 'international expeditions' combined accounted for only 9% ($n = 12$) of outdoor education programs provided by participants. The most frequent client type were 'secondary school groups' (67%, $n = 89$), constituting two thirds of responses, followed by 'primary school groups' (18%, $n = 24$), 'non-school groups' (13%, $n = 18$), and 'other school groups' (3%, $n = 4$).

Table 25*Organisation's Outdoor Education Program and Client Type*

Program and client type	n	%
Program type		
Multiday bush camping journey	64	48.0
Multiday residential camp	40	29.4
Single-day one-off experience	19	13.8
Urban outdoor education experiences	6	4.2
Other	3	2.4
International expeditions	3	2.2
Client type		
Secondary school groups	89	66.5
Primary school groups	24	17.5
Non-school groups	18	13.3
Other school groups	4	2.7

Participant Organisational Locations

The organisation location indicates the primary location in which the participant works in Australia according to state or territory. Table 26 indicates that 'Victoria' was the location for most organisations (40%, $n = 54$), followed by 'New South Wales' (17.3%, $n = 23$), 'Western Australia' (15.0%, $n = 20$), and 'South Australia' (11.3%, $n = 15$). These four states accounted for 84% ($n = 113$) of participant organisational locations. The majority (58%, $n = 78$) of organisations operated only in their home state/territory.

Table 26*Location of Outdoor Education Organisations by State*

Primary state and other states of operation	n	%
State/territory organisation is primarily based		
Victoria	54	40.6
New South Wales	23	17.3
Western Australia	20	15.0
South Australia	15	11.3
Tasmania	8	6.0
Queensland	7	5.3
Northern Territory	3	2.3
Australian Capital Territory	3	2.3
Organisation operates in other states/territories		
No		58.2
Yes		41.8

Organisation Size

Employee numbers were used as a measure of the participants' organisation's size. The number of ongoing and casual/seasonal employees was collected. Table 27 shows that two thirds of organisations employed between one and 19 ongoing employees (68%, $n = 91$), while organisations with 'one to four' ongoing employees (44%, $n = 58$) were in the majority, followed by 'five to 19' (24%, $n = 32$), and '20–29' employees (7% $n = 9$). Three sets of data were collected relating to the participants' perceptions of their organisation's levels of activity and use of casual employees: standard, quiet, and busy time. During their 'standard time', the majority of organisations employed between one and 19 casual employees (54%, $n = 73$), however, the top unique response for standard time was 'non-employing', totalling just less than one third of responses (30%, $n = 40$). During their 'quiet time', more than half of all organisations were 'non-employing' casual employees (57%, $n = 76$), with 'one to four' (22%, $n = 29$) and 'five to 19' casual employees (14%, $n = 19$) being the next highest. During their 'busy time', half of all organisations employed between one and

19 casual employees (54%, $n = 73$). The greatest number of organisations employed 'five to 19' casual employees (34%, $n = 45$); followed by 'one to four' (20%, $n = 27$).

Table 27

Number of Employees

Employee type and employee numbers	n	%
Number of Ongoing employees		
Non-employing	8	6.0
1–4 employees	58	43.6
5–19 employees	32	24.1
20–29 employees	9	6.8
30–39 employees	3	2.3
40–49 employees	3	2.3
50–99 employees	6	4.5
100–149 employees	3	2.3
150–199 employees	4	3.0
200+ employees	7	5.3
Number of casual employees during standard time		
Non-employing	40	30.1
1–4 employees	37	27.8
5–19 employees	35	26.3
20–29 employees	6	4.5
30–39 employees	5	3.8
40–49 employees	2	1.5
50–99 employees	5	3.8
100–149 employees	0	0.0
150–199 employees	2	1.5
200+ employees	1	0.8
Number of casual employees during quietest time		
Non-employing	76	56.7
1–4 employees	29	21.6
5–19 employees	19	14.2
20–29 employees	3	2.2
30–39 employees	1	0.7
40–49 employees	0	0.0
50–99 employees	3	2.2
100–149 employees	0	0.0

Employee type and employee numbers	n	%
150–199 employees	3	2.2
200+ employees	0	0.0
Number of casual employees during busiest time		
Non-employing	15	11.3
1–4 employees	27	20.3
5–19 employees	45	33.8
20–29 employees	15	11.3
30–39 employees	4	3.0
40–49 employees	4	3.0
50–99 employees	13	9.8
100–149 employees	6	4.5
150–199 employees	1	0.8
200+ employees	3	2.3

Results of Analyses: Higher Education Outdoor Education Graduates

The following section presents results regarding the knowledge, skills, and practical experience required of HE outdoor education graduates from the perspective of outdoor education practitioners (respondents). The section is structured in four parts: 1) knowledge and skills required for graduates, 2) practical experience for graduates, 3) HE mode of teaching and learning, and 4) additional write-in comments. Within this section the term 'participants' refers to the sample group of outdoor education practitioners ($n = 134$) described in the methodology.

Graduate Knowledge and Skill

Outdoor education graduates require knowledge and skills to perform the role and responsibilities of an entry level outdoor educator. The following section presents results regarding participant perceptions of graduate requirements relating to the elements of outdoor education knowledge and skill, personal traits, and outdoor education outcomes.

Elements of Outdoor Education Knowledge and Skill

The 12 elements of outdoor education knowledge and skill measured were valued positively by respondents ($n = 134$). When averaged, a large percentage of participants ($M = 91\%$, $n = 122$) perceived all elements to be important (Table 28). Elements associated with safety and group management were rated highest (most important). Specifically, 'safety' (84% , $n = 112$), 'risk management' (72% , $n = 97$), and 'outdoor education leadership' (41.8% , $n = 56$) were perceived as very important.

The outdoor education knowledge and skills elements of 'health and wellbeing' (46% , $n = 61$) and 'participant personal development' (46% , $n = 61$) were perceived as equally important. This middle-rated group of elements included 'technical outdoor activity skills' (45% , $n = 60$), 'technical outdoor activity instruction' (44% , $n = 59$), 'community and group development' (42% , $n = 56$), 'human/nature relationships' (38% , $n = 51$), and 'outdoor living and journeying' (37% , $n = 50$).

Elements associated with knowledge of natural environments (for example knowing the physical landscape, flora, fauna, land management), 'place-based knowledge' (40% , $n = 53$), and 'environmental science' (37% , $n = 50$), were the lowest rated (somewhat important). The 'environmental science' (21.6% , $n = 29$), and 'place-based knowledge' (8.2% , $n = 11$) elements also had the highest neutral responses (neither unimportant nor important).

Table 28*Level of Importance of Outdoor Education Knowledge and Skills for Graduates*

12 Knowledge and skill elements	Outdoor practitioners (n = 134)						
	Very Unimportant	Unimportant	Somewhat unimportant	Neither unimportant nor important	Somewhat Important	Important	Very Important
	%						
Technical outdoor activity skills	0.0	0.7	2.2	0.0	22.4	44.0	30.6
Technical outdoor activity instruction	0.0	0.7	0.7	3.0	20.1	44.8	30.6
Outdoor living and journeying	0.0	0.7	0.7	7.5	27.6	37.3	26.1
Safety	0.7	0.0	0.0	0.7	2.2	12.7	83.6
Risk management	0.0	0.0	0.7	0.7	2.2	23.9	72.4
Outdoor education leadership	0.7	0.0	0.0	2.2	13.4	41.8	41.8
Health and wellbeing	0.7	0.0	1.5	7.5	17.2	45.5	27.6
Participant personal development	0.7	0.7	0.7	3.0	17.2	45.5	32.1
Community and group development	0.0	1.5	3.0	5.2	23.1	41.8	25.4
Place-based knowledge	0.0	1.5	6.0	8.2	39.6	27.6	17.2
Environmental science	0.0	5.2	4.5	21.6	37.3	22.4	9.0
Human/Nature relationships	0.7	0.0	3.7	10.4	23.9	38.1	23.1

Respondents were asked of any other (additional) areas of knowledge and skills further to the 12 elements in Table 28. Table 29 presents the qualitative responses collected from respondents. Just over half of the participants ($n = 71$) contributed a total of 106 knowledge and skills responses. All the additional knowledge and skills responses were aligned by the researcher with the 12 elements of outdoor education knowledge and skill. No new elements emerged.

Table 28

Additional Knowledge and Skills Identified by Outdoor Practitioners

12 knowledge and skill elements	Additional responses
Technical outdoor activity skills	
Technical outdoor activity instruction	
Outdoor living and journeying	Practical fieldwork skills Weather interpretation Survival skills
Safety	Crisis management First aid Mental health first aid Wilderness first aid
Risk management	Legal issues
Outdoor education leadership	Client relationship management Communication Conflict facilitation Curriculum Environmental education Environmental interpretation Ethics Experiential learning Facilitation Group management Interpersonal skills Intrapersonal skills Leadership skills Leadership styles Logistics and planning Managing diverse groups Pedagogy People skills Practitioner presentation Program planning Relationship management

12 knowledge and skill elements	Additional responses
	Soft skills
	Teaching skills
	Use of assessment tools
Health and wellbeing	
Participant personal development	Personal development
	Relationship development
	Resilience
	Traits
	Emotional intelligence
Community and group development	Advocacy skills
	Team building
Place-based knowledge	
Environmental science	
Human/Nature relationships	Australian history and culture
	Conservation values and ethics
	Sustainability

Table 30 presents participants' ranking of the relative level of importance of the 12 elements of outdoor education knowledge and skills for graduates, with the results sorted from most to least important. The results show that participants ranked 'safety' (M = 2.4) and 'risk management' (M = 3.9) highly. The nature-oriented elements were ranked lower. These results confirm the perceptions identified in Table 28 that the elements aligned with safety and leadership are valued more highly than those associated with nature.

Table 29*Outdoor Practitioners Ranking of Knowledge and Skills for Graduates*

Rank	12 knowledge and skill elements	Rank score mean
1	Safety	2.4
2	Risk management	3.9
3	Outdoor education leadership	4.8
4	Technical outdoor activity skills	5.5
5	Participant personal development	5.8
6	Technical outdoor activity instruction	6.1
7	Health and wellbeing	6.3
8	Community and Group development	7.6
9	Outdoor living and journeying	8.1
10	Human/Nature relationships	8.1
11	Place-based knowledge	9.5
12	Environmental science	10.1

Note. Mean is sorted from most to least importance.

Outdoor Educator Personal Traits

Participants were asked to nominate the personal traits they believed were needed by HE outdoor education graduates. The participants could write-in up to five personal traits. Coding identified 107 traits. Table 31 presents the 10 most mentioned personal traits. The results show that being 'empathetic' (24.2%, $n = 32$) and a good 'communicator' (15.6%, $n = 21$) are highly valued, indicating that people with traits that can connect with participants and colleagues are highly desirable. The top 10 can be broken into three areas: first, leadership including being 'empathetic', a positive 'communicator', 'patience', and the general trait of being a 'leader'; second, pragmatic knowledge that includes being 'safe and 'knowledgeable'; and third, traits related to generic personal capacity including being confident, passionate, adaptable, and resilient.

Table 30*Personal Traits Required by Graduates*

Personal traits	%
Empathetic	24.2
Communicator	15.6
Knowledgeable	13.3
Confident	12.5
Leader	12.5
Patience	12.5
Passionate	11.7
Adaptable	10.9
Resilience	10.9
Safe	10.9

Personality traits were groups based on the personality trait themes identified in the qualitative phase of the study: interpersonal traits, intrapersonal traits, and metatraits. During the categorisation process, physical traits emerged inductively as a fourth category. Table 32 shows the results for each category where five or more participants (>3.91%) agreed on a trait. Results show that the Intrapersonal category received the most agreement among participants, with 21 traits identified by five or more respondents. The Interpersonal category had the second highest level of agreement with 12 traits, the metatraits category followed with four traits, and the newly emergent physical trait category had two traits: practical (7.81%, $n = 10$) and awareness (7.03%, $n = 9$).

Table 31*Personal Traits Required by Graduates by Category*

Category	Trait	%	n
Intrapersonal			
	Knowledgeable	13.28	18
	Confident	12.50	17
	Passionate	11.72	16
	Adaptable	10.94	15
	Resilience	10.94	15
	Safe	10.94	15
	Positive	10.16	14
	Calm	9.38	13
	Organised	9.38	13
	Willing to learn	9.38	13
	Enthusiastic	8.59	12
	Flexible	8.59	12
	Initiative	8.59	12
	Problem solver	6.25	8
	Self-aware	6.25	8
	Decisive	5.47	7
	Humility	5.47	7
	Integrity	5.47	7
	Commitment	4.69	6
	Open-minded	3.91	5
	Self-efficacy	3.91	5
Interpersonal			
	Empathetic	24.22	32
	Communicator	15.63	21
	Patience	12.50	17
	Compassionate	9.38	13
	Approachable	8.59	12
	Humorous	8.59	12
	Team-player	8.59	12
	Caring	6.25	8
	Reliable	5.47	7
	Relational	4.69	6
	Friendly	3.91	5
	Motivational	3.91	5

Category	Trait	%	n
Meta	Leader	12.50	17
	Teacher	10.16	14
	Professional	5.47	7
	Worker	4.69	6
Physical	Practical	7.81	10
	Energetic	3.91	5
	Awareness	7.03	9

Outdoor Education Student Learning Outcomes

Table 33 shows that every outdoor education student learning outcome presented was perceived to be important to some degree by many participants ($n = 134$). Those learning outcomes associated with the prosocial development of students were perceived to be 'very important' by respondents, and included 'participant personal development' (55.9%, $n = 75$) and 'community and group development' (41.7%, $n = 56$). 'Outdoor living and journeying' (44.9%, $n = 60$), 'health and wellbeing' (44.1%, $n = 59$), and 'human/nature relationships' (37%, $n = 50$) were perceived as 'important'. Those perceived as 'somewhat important', the lowest in comparison to the former learning outcomes, included 'place-based knowledge' (42%, $n = 57$) and 'environmental science' (40.9%, $n = 55$). 'Technical outdoor activity skills' was perceived as the lowest relative importance, with 42 (31.5%) participants placing it in the somewhat important score. 'Technical outdoor activity skills' accumulated the highest aggregated unimportant result (22%, $n = 30$), while 'environmental science' had the highest neutral result (neither unimportant nor important) with 19.7% ($n = 26$).

Table 32

Level of Importance of Outdoor Education Learning Outcomes

Learning outcomes	Perceived importance						
	Very Unimportant	Unimportant	Somewhat unimportant	Neither unimportant nor important	Somewhat Important	Important	Very Important
Technical outdoor activity skills	0.0	1.6	7.9	12.6	31.5	25.2	21.3
Outdoor living and journeying	0.0	0.8	0.0	7.1	24.4	44.9	22.8
Health and wellbeing	0.0	0.0	0.0	4.7	18.9	44.1	32.3
Participant personal development	0.0	0.0	0.0	3.9	10.2	29.9	55.9
Community and group development	0.0	0.0	0.0	5.5	12.6	40.2	41.7
Place-based knowledge	0.0	0.8	5.5	9.4	42.5	29.9	11.8
Environmental science	0.0	0.0	5.5	19.7	40.9	24.4	9.4
Human/Nature relationships	0.0	1.6	0.0	5.5	23.6	37.0	32.3

Data shows that participants' perceptions about the importance of learning outcomes may be conflicted. Where participants were forced to rank the relative level of importance of outdoor education learning outcomes (Table 34), their responses show two differences in perception when compared to the Likert results (Table 33). First, when ranked, the 'health and wellbeing' learning outcome moved from a middle-ranking in the Likert scale to the second most important ($M = 3.72$), although it was ranked only marginally higher than 'community and group development' ($M=3.80$). Second, 'technical outdoor activity skills', that ranked the lowest overall in the Likert scale, moved up the ranking to sixth position ($M = 4.64$). When ranked 'Personal development' ranked highest ($M = 2.17$) confirming the importance of prosocial learning outcomes. While those learning outcomes associated with geographical and scientific ways of knowing a natural place ('place-based knowledge' ($M = 6.37$) and 'environmental science' ($M = 6.67$)) ranked lowest.

Table 33

Respondents' Ranking of Outdoor Education Learning Outcomes

Rank	Learning outcomes	Rank score mean
1	Personal development	2.17
2	Health and wellbeing	3.72
3	Community and group development	3.80
4	Human/nature relationships	4.28
5	Outdoor living and journeying	4.35
6	Technical outdoor activity skills	4.64
7	Place-based knowledge	6.37
8	Environmental science	6.67

Note. Sorted by mean from most to least importance.

Practical Experience for Graduates

Practical experience is a learning mode through which outdoor education graduates may develop the required knowledge and skills to undertake the role of a group leader. The following section presents the responses on practical experience for

graduates, addressing the following matters: perceived importance, type of practical experience, duration, frequency and amount required, adventure activities and practical experience, and the elements of knowledge and skills, and practical experience.

Perceived Importance of Practical Experience for Graduates

Participants agreed that practical experience is important for HE graduate outdoor educators. Participants rated 'practical experience' (72.4%, $n = 97$) as 'very important' and 'course-based work placement' (36.6%, $n = 49$) as 'important' for HE graduate outdoor educators (Table 35). While 'a logbook of practical experience' was considered 'somewhat important' by just over one third of participants (34.3%, $n = 46$). Logbooks also drew the largest neutral responses (neither unimportant or important) (10.4%, $n = 14$), and the largest combined 'unimportant' responses (6.7%, $n = 9$).

Table 34*Level of Importance of Practical Experience, Logbooks, and Work Placements for Graduates*

Work experience elements	Sample (<i>n</i> = 134)						
	Very unimportant	Unimportant	Somewhat unimportant	Neither unimportant nor important	Somewhat important	Important	Very important
Practical experience for outdoor education graduates	2.2	0.0	0.0	0.0	3.7	21.6	72.4
A logbook of practical experience	2.2	0.0	4.5	10.4	34.3	31.3	17.2
Course-based work placements	1.5	0.0	1.5	0.7	23.9	36.6	35.8

Type of Practical Experience

Respondents agreed that outdoor educators require field-based practical experiences that develop technical skills and replicate the common outdoor education program modalities. Results showed that 'outdoor activity skill development' (97%, $n = 130$) and 'technical safety training courses' (83.6%, $n = 112$) were the top two types of practical field experience preferred by participants (Table 36). The common outdoor education modalities of 'lightweight journeying' (60.5%, $n = 81$), 'bush base camps' (55.2%, $n = 74$), and 'residential camping' (30.6%, $n = 41$) were ranked in the middle. The least preferred field-based practical experience types were 'urban outdoor experiences' (19.4%, $n = 26$), followed by 'international expeditions' (11.9%, $n = 16$)

Participants identified other types of practical field experience beyond those provided in Table 37. 'Other types' was a survey response option, via which participants could add up to three additional types of field-based practical experiences. There were 62 additional responses provided by 58% of participants ($n = 43$) and these are coded under four emergent types of field-based experiences: 'environmental knowledge and skill development', 'outdoor educator skill development', 'workplace experience', and 'personal outdoor experiences' (Table 37). The responses provide insight into the participants' perception about the scope of field-based experience types and the associated learning outcomes and knowledge and skills developed.

Table 35

Type of Field-Based Practical Experience Required by Outdoor Educators.

Field-based experience	%
Outdoor activity skill development	97.0
Technical safety training courses	83.6
Lightweight journeying	60.5
Bush base camps	55.2
Residential camping	30.6
Urban outdoor experiences	19.4
International expeditions	11.9

Table 36

Other Types of Field-Based Experiences Identified

Environmental knowledge and skill development Response	Outdoor educator skill development Response	Workplace experience Response	Personal outdoor experiences Response
Environmental interpretation field trips	Debriefs	Experience as a leader of a dependent group	Experience with failure
Environmental studies	Facilitation experience	Real client experiences in an outdoor environment	Personal adventure experiences
Knowledge of ecology	Facilitation skills and debriefed skills	Single and multiple day work with groups	Personal expeditions, not course or work
Place-based knowledge	Group facilitation	Work with an organisation that has bills and insurance to pay. Real-world experience	Personal experience
Sustainability lifestyle	Group leadership	Working with young adults	Personal journeys/trips that go beyond what any school journey would call for
	Group management		Personal outdoor skills
	Instruction experience		Personal trips
	Leadership training		Personal challenging experience
	Leading/facilitating groups		Real-world experience
	Planning and coordination experience		Real-world scenarios—experience when things go wrong
	Teaching		

Duration, Frequency, and Amount of Practical Experience.

Outdoor educators can gain experience on field-based trips of differing durations, such as day trips and multiday trips, and their learning outcomes can vary with trip length. For example, the planning, logistics and facilitation of a day experience are vastly different for a multiday experience (2 days to several months) because the provision of food, accommodation, travel, and care for students becomes more complex over time. For this reason, participants were asked to provide the preferred number of field-based trips of varying durations that an outdoor educator would need to have undertaken to be deemed sufficiently experienced for employment. Table 38 presents the frequency (M) of trips for each trip duration and the day range (DR).

The results show that respondents preferred practical experience involving shorter trip duration (< 7 days) undertaken more frequently, in comparison to longer trip duration (> 7 days) (Table 38). Respondents perceived that 'day trips' (M = 10.8, DR = 11) required the greatest number of experiences, followed by '2–3 day, multiday trips' (M = 6.6, DR = 14–21) and '3–7 day, multiday trips' (M = 6.3, DR = 18–42). As the trip length increased, the frequency required for practical experience reduced. The highest number of days engaged by trip by duration occurs in '3–7 day, multiday trips' (M = 6.3, DR = 18–42), followed by '2–3 day, multiday trips' (M = 6.6, DR = 14–21). The total accumulated DR (total amount) was between 64 and 119 days of practical field experience.

Table 37*Practical Field Experiences Required by an Outdoor Education Graduate According to Trip**Duration*

Duration	Frequency (M)	Day range (DR)
Day trips	10.8	11
2–3 day, multiday trips	6.6	14–21
3–7 day, multiday trips	6.3	18–42
1–2 week trips	1.9	7–14
2–3 week trips	0.8	14–21
More than 3 week trip	0.2	0–21
Total DR		64 -119

Note. DR is the range of days for the trip duration variable.

When asked to rank field-based trip by durations, multiday trips of less than 7 days were most preferred (Table 39). The most preferred trip length was '3–7 multiday trips' (M = 2.1), followed by '2–3 multiday trips' (M = 2.5), then day trips (Table 39). Trip durations spanning multiple weeks (> 7 days) occupied the bottom 50% of rankings, with 'more than 3 week trip' (M = 5.4) ranked lowest.

Table 38*Ranking of Relative Importance of Field-Based Trip Lengths for Graduates*

Rank	Trip lengths	Rank score mean
1	3–7 multiday trips	2.1
2	2–3 multiday trips	2.5
3	day trips	3.3
4	1–2 week trips	3.4
5	2–3 week trips	4.3
6	More than 3 week trip	5.4

Note. Sorted by mean rank from most to least preferred.

Adventure Activities and Practical Experience

Respondents perceived the presented adventure activities each required 10 or 20 days of practical experience as an activity leader to be prepared to lead groups. (Table 40). Five of the adventure activities were perceived by the majority of participants ($n = 134$) to require 20 days of practical experience leading, including 'rock climbing' (31.8%, $n = 43$), 'abseiling' (33.8%, $n = 45$), 'bushwalking' (35.7%, $n = 48$), 'river rafting' (28.1%, $n = 38$), and 'caving' (29.1%, $n = 39$). The remaining adventure activities were perceived as requiring 10 days experience leading, and they included 'cycle touring' (32.8%, $n = 44$), 'challenge ropes' (57.5%, $n = 77$), and 'canoeing' (39.5%, $n = 53$). However, 'cycle touring' and 'canoeing' scored highly in the 10- and 20-day measure, indicating a trend towards 20 days.

For most of the activity variables a trend can be observed whereby the next two highest responses are directly adjacent to the majority response, indicating a range of agreement among participants about the required days above and below the majority response. For example, 'rock climbing' received responses of 23.3% for 10 days, 31.8% for 20 days, and 19.4% for 30 days. These three measures for 'rock climbing' represent 74% ($n = 100$) of participant responses.

Table 39*Days of Practical Experience Leading Required for Adventure Activities*

Adventure activities	Number of days							
	NA	0 days	10 days	20 days	30 days	40 days	50 days	50+ days
Rock climbing (top rope)	10.1	0.0	23.3	31.8	19.4	6.2	2.3	7.0
Abseiling (single pitch)	8.5	0.0	27.7	33.8	16.2	5.4	2.3	6.2
Bushwalking (multiday semi-remote areas)	4.7	0.0	16.3	35.7	22.5	10.1	7.0	3.9
River rafting (up to grade 3)	13.3	0.0	7.0	28.1	22.7	14.8	8.6	5.5
Caving	18.1	0.8	24.4	29.1	12.6	5.5	6.3	3.1
Cycle touring (multiday semi-remote areas)	15.2	4.0	32.8	31.2	11.2	2.4	0.8	2.4
Challenge ropes	8.7	2.4	57.5	21.3	7.1	1.6	1.6	0.0
Canoeing (inland flat water)	5.4	3.1	39.5	31.8	13.2	3.9	2.3	0.8

Table 41 presents the activities participants nominated as adventure activities not listed in the previous item that would also require practical experience to lead. This item was optional, and participants could add up to three items. Twenty-five responses were recorded, identifying nine activities. Participants mostly nominated the 'sea kayaking', 'skiing and ski touring', and 'mountain biking'. Participants who contributed responses represented less than 1% of total participants.

Table 40

Other Adventure Activities Nominated by Respondents

Adventure activities	Responses
Sea Kayaking	5
Skiing and Ski Touring	4
Mountain biking	4
Group activities	3
White Water kayaking	2
Canyoning	2
Lead rock climbing	2
Snorkelling	2
Sailing	1

Elements of Knowledge, Skills, and Practical Experience

Respondents were asked to consider how many days of practical experience are required to be competent in the non-adventure activity elements of knowledge and skills. Most responses were recorded across two measures: 10 days and 20 days (Table 42). Those activities perceived as requiring 10 days included 'health and wellbeing' (27.5%, $n = 37$), 'place-based knowledge' (34.4%, $n = 46$), 'environmental science' (29.8%, $n = 40$), and 'human/nature relationships' (27.5%, $n = 37$). Those activities requiring 20 days of practical experience included 'outdoor living and journeying' (26.0%, $n = 35$), 'risk management' (22.9%, $n = 31$), 'outdoor education leadership' (22.9%, $n = 31$), 'participant personal development' (26.7%, $n = 36$), and 'community and group development' (26.7%, $n = 36$).

There was a moderate level of agreement among the participants about how many days of practical experience are required to become competent in the nine non-adventure activity elements. Four of these elements recorded scores above 10% ($n = 13$) for four elements: 'outdoor living and journeying'; 'risk management'; 'outdoor education leadership'; and 'participant personal development' (Table 42). The remaining five elements ('health and wellbeing', 'community and group development', 'place-based knowledge', 'environmental science', and 'human/nature relationships') were more heavily weighted in their scores towards that of the majority, suggesting a higher level of agreement.

Table 41

Number of Days Leading Required for Graduates to Attain the Identified Knowledge and Skills

Skill and knowledge elements	Number of days							
	NA	0 days	10 days	20 days	30 days	40 days	50 days	50+ days
Outdoor living and journeying	5.3	0.0	14.5	26.0	16.0	16.0	5.3	16.8
Risk management	2.3	0.8	14.5	22.9	21.4	12.2	9.2	16.8
Outdoor education leadership	2.3	0.0	12.2	22.9	17.6	19.8	11.5	13.7
Health and wellbeing	6.1	2.3	27.5	24.4	16.8	9.9	3.1	9.9
Participant personal development	4.6	1.5	13.7	26.7	22.1	12.2	7.6	11.5
Community and group development	3.8	3.1	18.3	26.7	20.6	14.5	3.8	9.2
Place-based knowledge	6.9	3.8	34.4	18.3	15.3	5.3	4.6	11.5
Environmental science	9.9	5.3	29.8	18.3	14.5	7.6	5.3	9.2
Human/nature relationships	5.3	2.3	27.5	21.4	16.8	12.2	4.6	9.9

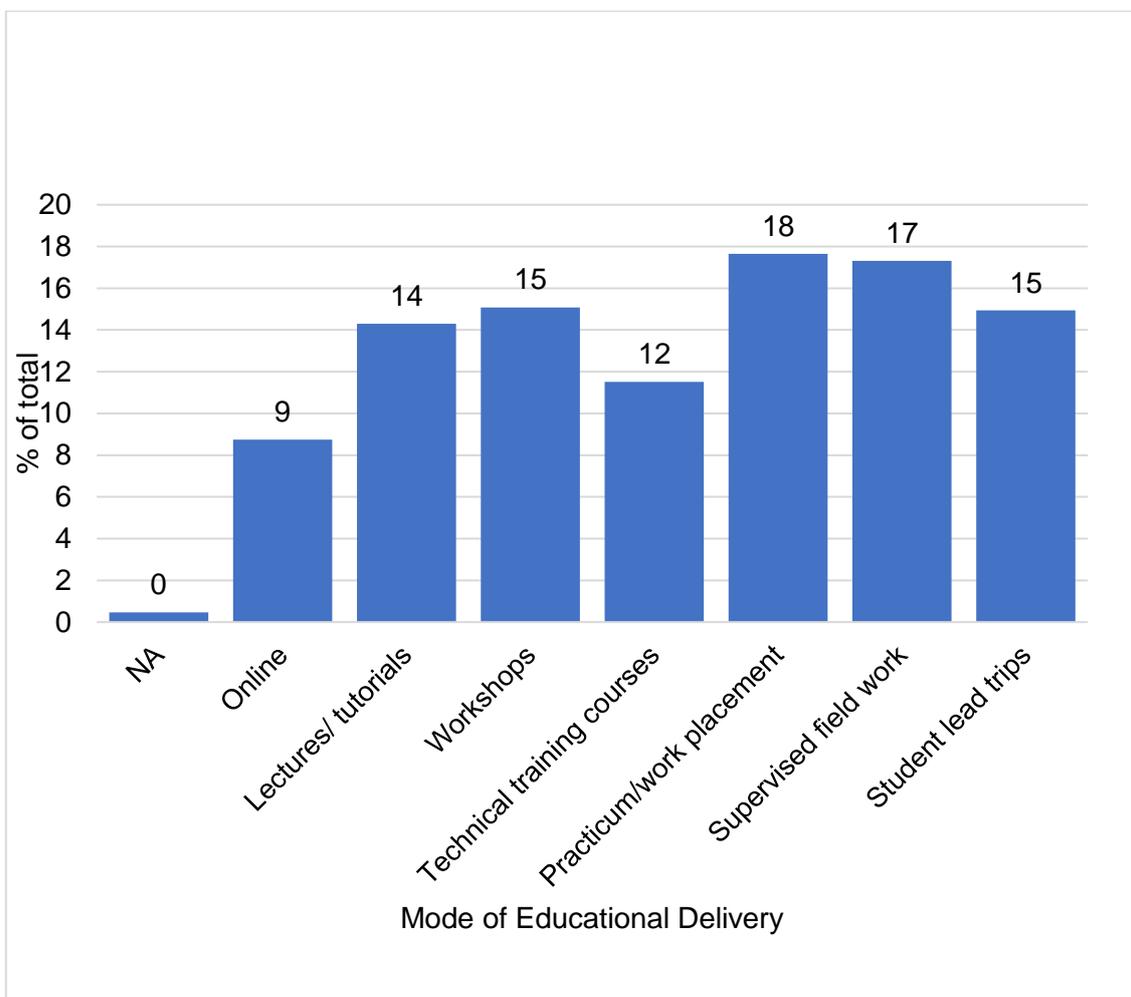
Modes of Educational Delivery for Undergraduates

Respondents were given the opportunity to select the modes of delivery they felt most appropriate for teaching the 12 elements of knowledge and skill. Seven modes of delivery were offered as choices and respondents could select more than one mode for each of the 12 elements.

Figure 13 shows that 'practicum/work placement' was the most selected educational mode overall, followed, in order, by institutionally delivered modes of 'supervised fieldwork', 'student-led trips', and 'workshops'.

Figure 13

Preferred Mode of Educational Delivery



Consistent with the results seen in Figure 13, Table 43 shows that most participants nominated practicum/work placement as appropriate to teach most knowledge and skill elements. The second most preferred mode by participants was 'lecturers and tutorials'. 'Technical training courses' was the single highest preferred education mode for delivering the 'technical outdoor activity' skills element.

Table 42*Preferred Undergraduate Educational Delivery Modes for Each Knowledge and Skill Element*

Skill and knowledge elements	Delivery mode							
	NA	Online	Lectures/ tutorials	Workshops	Technical training courses	Practicum/ work placement	Supervised field work	Student-led trips
Health and wellbeing	2.3	50.8	76.9	76.9	29.2	57.7	56.2	52.3
Community and group development	2.3	29.2	56.9	60.8	30.8	79.2	71.5	68.5
Environmental science	4.6	65.4	86.2	70.0	36.2	60.0	60.0	50.8
Human/nature relationships	3.1	42.3	71.5	67.7	30.0	73.1	71.5	72.3
Outdoor living and journeying	0.8	15.4	36.2	37.7	43.8	73.1	73.8	85.4
Outdoor education leadership	1.5	30.0	66.2	68.5	43.1	86.2	89.2	73.8
Participant personal development	0.8	32.3	56.2	68.5	44.6	82.3	76.9	72.3
Place-based knowledge	3.1	46.9	53.8	55.4	28.5	75.4	74.6	73.8
Risk management	2.3	56.2	86.2	78.5	66.2	74.6	68.5	52.3
Safety	1.5	52.3	79.2	76.9	73.8	77.7	75.4	53.8
Technical outdoor activity instruction	0.8	10.0	33.8	54.6	73.8	89.2	87.7	55.4
Technical outdoor activity skills	0.8	16.9	30.0	57.7	90.0	76.2	81.5	54.6

Additional Write-in Comments on Knowledge, Skills, and Practical Experience of Outdoor Educators

At the conclusion of the questionnaire, participants were asked if they wished to offer additional comments on the knowledge, skills, and practical experience of outdoor educators, or other aspects in the questionnaire. Thirty-two participants answered, with the shortest response being three words, and the longest being 180 words (see Appendix Z).

Table 44 presents the word frequency of the top 10 words provided in responses to the open-ended question. In total, 2,042 words were searched, including common words (e.g., education), with stemming words (e.g., educators) and synonyms (e.g., pedagogy). The weighted percentage ascribed to each word is the frequency of the word, relative to the total words, adjusted to accommodate if an associated stemming or synonym is in more than one word group (QSR, n.d.). The results show that words relating to education and outdoors, skills were most common. Appendix Z presents these words in the context of their full-text responses, and participants provided comments and feedback regarding their perceptions of:

- The effectiveness of the questionnaire in gathering data representative of the 'perceived' issues in outdoor education and knowledge and skill acquisition (positive and negative assessments);
- Further specific knowledge and skills required of outdoor educators;
- Further practical experiences required of outdoor educators;
- Issues and concerns regarding the effectiveness of HE and VE programs; and
- Employer hiring preferences.

Table 43*Word Frequency*

Word	Count	Weighted percentage (%)	Similar words
education	43	2.86	develop, development, educate, education, educational, educators, instructing, pedagogy, prepared, school, teach, teaches, teaching, training
outdoor	29	2.60	open, outdoor, outdoors
skills	30	2.30	good, practical, practice, proficient, skill, skilled, skills
leader	22	1.94	leader, leaders, leadership
personal	21	1.94	individual, person, personal, personality, personally, someone
experience	23	1.65	experience, experiences, get, know, receive, see, seeing
field	19	1.61	area, areas, field, fields, study, subject
programme	16	1.47	curriculum, program, programme, programmes, programs, syllabus
see	31	1.40	attended, checked, ensure, ensuring, find, hear, learn, learning, learnings, look, looked, see, seeing, understands, view
lead	21	1.29	guide, guides, lead, leadership, leading, leave, pass, passed, results, running, takes

Results of Analyses: Between-Group Demographic Comparison

The results of the between-group comparisons of demographic independent variables are presented in the following section. Three sets of demographic data ‘organisational seniority’ (managers versus non-managers), ‘education’ (VE qualification versus HE qualification), and ‘work type’ (residential camping versus bush camping journey) were used to create six groups (two groups per set). The between-group demographic comparison addresses demographic independent variables, knowledge and skills required for graduates, practical experience for graduates, and HE modes of teaching and learning.

Within each section, results are presented for the three between-group comparisons as subsections. To ensure differentiation of reporting between the groups, the whole sample is referred to as ‘participants’ ($n = 134$) while the comparison groups are referred to by their subset name, for example ‘managers’ ($n = 97$). As identified in

the thesis section Conducting Statistical Test (Step 4) no statistical significance was detected via the Mann-Whitney U Test therefore statistical test results are not presented.

Demographic Independent Variables: Organisational Seniority, Education, and Work Type

Three sets of demographic data, each broken into two groups, were utilised to make demographic comparisons of dependent variables (Table 45). Firstly, 'organisational seniority' that was based on staff management experience. Secondly, 'education' that was based on the highest AQF level outdoor education/recreation course completed. Finally, 'work type' that was based on the main type of experience/work undertaken by the participant's organisation. Table 45 presents each demographic variable, their subsets and respective sample size '*n*' and '%', with the population size '*N*'.

Table 44

Demographic Variables and Comparison Groups.

Demographic variable	Group 1	Group 2	<i>N</i>
Organisational Seniority	Manager (72%, <i>n</i> = 97)	Non-Manager (28%, <i>n</i> = 37)	134
Education	VE AQF Levels 1–6 (43%, <i>n</i> = 54)	HE AQF Levels 7–10 (57%, <i>n</i> = 71)	125
Work Type	Residential Camping (34%, <i>n</i> = 36)	Bush camping journeys (66%, <i>n</i> = 69)	105

The 'organisational seniority' independent variable (*N* = 134) and its subsets were based on the participant's experience in human resource management (HR) and outdoor education. Participants who identified as having expertise in HR management were identified as managers (72%, *n* = 97), conversely, those who did not were identified as non-managers (28%, *n* = 37). Three participants did not identify as either and were removed from the analysis.

The 'education' independent variable ($N = 125$) and its subsets were based on the participant's highest level of outdoor education/recreation-related education. Two groups were created by collapsing the 10 AQF levels. Group one comprised AQF Levels 1–6 (43%, $n = 54$), and Group 2 AQF Levels 7 to 10 (57%, $n = 71$). The two groups were established to compare those with VE qualifications to those with HE qualifications. VE ceases in the Australian AQF at level 5/6, then at AQF Level 6/7 university education commences. Level 6 can span VE and HE, but the qualifications are distinguishable as associate diplomas (VE), and associate degrees (HE). As associate degrees tend to be more practical and vocationally oriented, and because only one participant was a Level 6 associate degree graduate, this participant was included in the AQF Levels 1–6 group.

The 'work type' independent variable ($N = 105$) and its subsets were based on whether the participant's workplace predominately provided outdoor education experiences through either residential camping (34%, $n = 36$) or bush camping journeys (66%, $n = 69$). In the questionnaire, participants could choose from five types of outdoor education service provision or 'other'. These types fell naturally into two broad categories (residential camping, bush camping journeys) based on the modality of the program delivery. These two categories of outdoor education programs often require different levels and types of knowledge and skills and therefore offer an opportunity to compare perceptions in differing contexts.

Graduate Knowledge and Skill: Between-Group Demographic Comparison

HE outdoor education graduates require knowledge and skills to perform the role and responsibilities of an entry level outdoor educator. The following section presents the between-group results relating to HE outdoor education graduate requirements, including: the elements of outdoor education knowledge and skill; personal traits; and outdoor education outcomes.

Elements of Outdoor Education Knowledge and Skill

Organisational Seniority. Mixed results were found between the Likert scale and forced ranking of importance for the outdoor education knowledge and skill elements. The Likert scale showed little difference between managers and non-managers perceptions of the level of importance of the outdoor education knowledge and skill elements for graduates, nothing of statistical significance (Table 46). The only descriptive difference was 'outdoor education leadership' that was perceived to be 'very important' by managers compared to 'important' by non-managers.

Results from the forced ranking revealed that managers perceive the technical elements as important while non-managers perceive the outdoor education outcome elements as equally important. Managers ranked 'technical outdoor activity skills' and 'technical outdoor activity instruction' higher than non-managers. In contrast, non-managers ranked the outdoor education outcome elements 'participant personal development' and 'health and wellbeing' higher than the technical elements. Overall, managers and non-managers agreed that the most important elements, in descending order, were 'safety', 'risk management' and 'outdoor education leadership' (Table 47). The groups also agreed that 'place-based knowledge' and 'environmental science' were of the least importance.

Education. When comparing the responses of participants with VE qualifications to participants with HE qualifications a difference is observable between the groups' for 'evaluation of the importance of 'technical outdoor activity skills' (Table 48). The VE qualification group rated 'technical outdoor activity skills' as having higher importance than the HE qualification group.

Results show that the VE group ranked all the technical and leadership elements as more important than the outdoor education outcome elements. The relative ranking of each of the elements in Table 49 shows agreement between the education groups on the first four ranked items and their order of importance: 'safety',

'risk management', 'outdoor education leadership', and 'technical outdoor activity skills'. There was little direct agreement in the ranking of the remaining items. Elements mostly vary by only one rank with 'technical outdoor activity instruction' varying by two (VE participants ranking it fifth and HE participants ranking it seventh). Both groups ranked 'place-based knowledge' and 'environmental science' as the knowledge and skills upon which they placed the lowest importance.

Work Type. No statistical differences existed between the level of importance perceived by residential camping and bush camping journey groups (Table 50). There was also a high level of agreement between the groups in their relative rankings of elements (Table 51). 'Safety', 'risk management', and 'outdoor education leadership' occupied the top three ranked skills and knowledge for both groups. Ranks four to seven included 'participant personal development', 'technical outdoor activity skills', 'health and wellbeing', and 'technical outdoor activity instruction' with only one rank separating the groups from complete agreement. The lowest ranked knowledge and skills (in descending order of importance) were 'community and group development', 'outdoor living and journeying', 'human/nature relationships', 'place-based knowledge', and 'environmental science'.

Table 45*Organisational Seniority Comparison of Outdoor Education Knowledge and Skill Elements for Graduates*

Knowledge and skill element	Manager (<i>n</i> = 97)							Non-manager (<i>n</i> = 37)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Technical outdoor activity skills	0.0	0.0	1.0	0.0	21.6	43.3	34.0	0.0	2.7	5.4	0.0	24.3	45.9	21.6
Technical outdoor activity instruction	0.0	0.0	0.0	3.1	18.6	44.3	34.0	0.0	2.7	2.7	2.7	24.3	45.9	21.6
Outdoor living and journeying	0.0	0.0	0.0	9.3	28.9	36.1	25.8	0.0	2.7	2.7	2.7	24.3	40.5	27.0
Safety	0.0	0.0	0.0	1.0	2.1	14.4	82.5	2.7	0.0	0.0	0.0	2.7	8.1	86.5
Risk management	0.0	0.0	0.0	1.0	2.1	26.8	70.1	0.0	0.0	2.7	0.0	2.7	16.2	78.4
Outdoor education leadership	0.0	0.0	0.0	3.1	16.5	36.1	44.3	2.7	0.0	0.0	0.0	5.4	56.8	35.1
Health and wellbeing	0.0	0.0	2.1	9.3	19.6	44.3	24.7	2.7	0.0	0.0	2.7	10.8	48.6	35.1
Participant personal development	0.0	1.0	1.0	3.1	17.5	45.4	32.0	2.7	0.0	0.0	2.7	16.2	45.9	32.4
Community and group development	0.0	2.1	2.1	6.2	23.7	41.2	24.7	0.0	0.0	5.4	2.7	21.6	43.2	27.0
Place-based knowledge	0.0	1.0	7.2	8.2	38.1	27.8	17.5	0.0	2.7	2.7	8.1	43.2	27.0	16.2
Environmental science	0.0	5.2	4.1	20.6	40.2	20.6	9.3	0.0	5.4	5.4	24.3	29.7	27.0	8.1
Human/nature relationships	1.0	0.0	1.0	12.4	26.8	39.2	19.6	0.0	0.0	10.8	5.4	16.2	35.1	32.4

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat important, I = Important, VI = Very important.

Table 46

Organisational Seniority Comparison of Rankings of Outdoor Education Knowledge and Skill Elements for Higher Education Graduates

Manager (n = 97)			Non-Manager (n = 37)		
Rank	Knowledge and skill element	Rank score mean	Rank	Knowledge and skill element	Rank score mean
1	Safety	2.59	1	Safety	1.97
2	Risk management	3.81	2	Risk management	4.00
3	Outdoor education leadership	4.64	3	Outdoor education leadership	5.08
4	Technical outdoor activity skills	5.30	4	Participant personal development	5.14
5	Technical outdoor activity instruction	5.91	5	Health and wellbeing	5.59
6	Participant personal development	6.00	6	Technical outdoor activity skills	5.89
7	Health and wellbeing	6.57	7	Technical outdoor activity instruction	6.57
8	Community and group development	7.37	8	Outdoor living and journeying	7.92
9	Human/nature relationships	8.06	9	Community and group development	8.11
10	Outdoor living and journeying	8.10	10	Human/nature relationships	8.16
11	Place-based knowledge	9.56	11	Place-based knowledge	9.35
12	Environmental science	10.09	12	Environmental science	10.22

Note. Sorted from most to least importance by mean.

Table 47*Education Level Comparison of Outdoor Education Knowledge and Skill Elements for HE Graduates.*

Knowledge and skill element	VE qualification (n = 54)							HE qualification (n = 71)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Technical outdoor activity skills	0.0	0.0	0.0	0.0	16.7	40.7	42.6	0.0	0.0	4.2	0.0	22.5	49.3	23.9
Technical outdoor activity instruction	0.0	0.0	0.0	1.9	22.2	38.9	37.0	0.0	0.0	1.4	2.8	18.3	49.3	28.2
Outdoor living and journeying	0.0	0.0	0.0	5.6	35.2	38.9	20.4	0.0	0.0	1.4	8.5	21.1	38.0	31.0
Safety	0.0	0.0	0.0	1.9	1.9	13.0	83.3	1.4	0.0	0.0	0.0	0.0	12.7	85.9
Risk management	0.0	0.0	0.0	1.9	0.0	25.9	72.2	0.0	0.0	1.4	0.0	1.4	23.9	73.2
Outdoor education leadership	0.0	0.0	0.0	1.9	13.0	42.6	42.6	1.4	0.0	0.0	2.8	11.3	40.8	43.7
Health and wellbeing	0.0	0.0	1.9	9.3	14.8	51.9	22.2	1.4	0.0	1.4	5.6	18.3	42.3	31.0
Participant personal development	0.0	0.0	1.9	3.7	14.8	46.3	33.3	1.4	1.4	0.0	2.8	19.7	46.5	28.2
Community and group development	0.0	3.7	1.9	3.7	22.2	46.3	22.2	0.0	0.0	4.2	5.6	23.9	42.3	23.9
Place-based knowledge	0.0	3.7	9.3	7.4	31.5	25.9	22.2	0.0	0.0	2.8	9.9	43.7	31.0	12.7
Environmental science	0.0	7.4	5.6	20.4	31.5	22.2	13.0	0.0	2.8	2.8	21.1	42.3	25.4	5.6
Human/nature relationships	0.0	0.0	3.7	14.8	20.4	37.0	24.1	1.4	0.0	2.8	7.0	28.2	39.4	21.1

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat important, I = Important, VI = Very important.

Table 48*Education Level Comparison of Rankings of Outdoor Education Knowledge and Skill Elements for Higher Education Graduates*

VE qualification (n = 54)			HE qualification (n = 71)		
Rank	Knowledge and skill element	Rank score mean	Rank	Knowledge and skill element	Rank score mean
1	Safety	2.37	1	Safety	2.34
2	Risk management	3.96	2	Risk management	3.69
3	Outdoor education leadership	4.80	3	Outdoor education leadership	4.54
4	Technical outdoor activity skills	4.81	4	Technical outdoor activity skills	5.96
5	Technical outdoor activity instruction	5.54	5	Participant personal development	5.97
6	Participant personal development	5.56	6	Health and wellbeing	6.18
7	Health and wellbeing	6.72	7	Technical outdoor activity instruction	6.51
8	Community and group development	7.50	8	Community and group development	7.65
9	Human/nature relationships	8.26	9	Outdoor living and journeying	7.94
10	Outdoor living and journeying	8.31	10	Human/nature relationships	7.97
11	Place-based knowledge	10.00	11	Place-based knowledge	9.15
12	Environmental science	10.17	12	Environmental science	10.10

Note. Sorted from most to least importance by mean.

Table 49

Work Type Comparison of the Importance of Outdoor Education Knowledge and Skill Elements for Higher Education Graduates

Knowledge and skill element	Residential camping (n = 36)							Bush camping journey (n = 69)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Technical outdoor activity skills	0.0	0.0	2.8	0.0	13.9	47.2	36.1	0.0	0.0	1.4	0.0	27.5	43.5	27.5
Technical outdoor activity instruction	0.0	0.0	0.0	0.0	19.4	44.4	36.1	0.0	0.0	1.4	5.8	18.8	44.9	29.0
Outdoor living and journeying	0.0	0.0	0.0	8.3	19.4	50.0	22.2	0.0	0.0	1.4	8.7	30.4	31.9	27.5
Safety	0.0	0.0	0.0	0.0	5.6	11.1	83.3	1.4	0.0	0.0	0.0	0.0	13.0	85.5
Risk management	0.0	0.0	0.0	0.0	2.8	22.2	75.0	0.0	0.0	1.4	0.0	1.4	27.5	69.6
Outdoor education leadership	0.0	0.0	0.0	2.8	5.6	47.2	44.4	1.4	0.0	0.0	2.9	14.5	42.0	39.1
Health and wellbeing	0.0	0.0	2.8	8.3	16.7	41.7	30.6	1.4	0.0	1.4	7.2	18.8	46.4	24.6
Participant personal development	0.0	0.0	0.0	5.6	22.2	41.7	30.6	1.4	1.4	0.0	1.4	18.8	47.8	29.0
Community and group development	0.0	2.8	2.8	2.8	19.4	47.2	25.0	0.0	0.0	4.3	7.2	27.5	33.3	27.5
Place-based knowledge	0.0	2.8	8.3	2.8	36.1	27.8	22.2	0.0	0.0	7.2	8.7	43.5	26.1	14.5
Environmental science	0.0	8.3	5.6	19.4	27.8	25.0	13.9	0.0	4.3	5.8	21.7	40.6	20.3	7.2
Human/nature relationships	0.0	0.0	5.6	8.3	25.0	47.2	13.9	1.4	0.0	4.3	13.0	24.6	30.4	26.1

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat important, I = Important, VI = Very important.

Table 50*Work Type Comparison of Rankings of Outdoor Education Knowledge and Skill Elements for Graduates*

Residential camping (<i>n</i> = 36)			Bush camping journey (<i>n</i> = 69)		
Rank	Knowledge and skill element	Rank score mean	Rank	Knowledge and skill element	Rank score mean
1	Safety	2.81	1	Safety	2.12
2	Risk management	3.94	2	Risk management	3.81
3	Outdoor education leadership	4.08	3	Outdoor education leadership	5.06
4	Participant personal development	5.78	4	Technical outdoor activity skills	5.43
5	Technical outdoor activity skills	5.83	5	Participant personal development	5.54
6	Health and wellbeing	6.25	6	Technical outdoor activity instruction	6.04
7	Technical outdoor activity instruction	6.33	7	Health and wellbeing	6.33
8	Community and group development	7.67	8	Community and group development	7.54
9	Outdoor living and journeying	8.19	9	Outdoor living and journeying	8.06
10	Human/nature relationships	8.22	10	Human/nature relationships	8.16
11	Place-based knowledge	9.22	11	Place-based knowledge	9.80
12	Environmental science	9.67	12	Environmental science	10.12

Note. Sorted from most to least importance by mean.

Outdoor Educator Personal Traits

Organisational Seniority. Managers and non-managers agreed that being empathetic was the most important trait for HE outdoor education graduates. Results show that both groups valued being 'empathetic', a good 'communicator', 'knowledgeable', 'patient', 'leaderly', and 'confident' (Table 52). Among the top 10 most mentioned traits, managers nominated being 'passionate' (13.7%, $n = 13$), 'adaptable' (13.7%, $n = 13$), 'resilient' (10.5%, $n = 10$), and 'positive' (10.5%, $n = 10$). In contrast, non-managers identified being 'safe' (21.2%, $n = 8$), 'enthusiastic' (21.2%, $n = 8$), 'teacherly' (18.2%, $n = 7$), and 'flexible' (15.2% $n = 6$).

Table 51

Organisational Seniority Comparison of Personal Traits Required by Graduates

Manager		Non-Manager	
Personal traits	%	Personal traits	%
Empathetic	21.1	Empathetic	33.3
Communicator	13.7	Communicator	21.2
Passionate	13.7	Safe	21.2
Adaptable	13.7	Enthusiastic	21.2
Knowledgeable	11.6	Knowledgeable	18.2
Leaderly	11.6	Confident	18.2
Patience	11.6	Teacherly	18.2
Confident	10.5	Leaderly	15.2
Resilience	10.5	Patience	15.2
Positive	10.5	Flexible	15.2

Education. The VE and HE groups agreed that being empathetic was the most important trait for HE outdoor education graduates (Table 53). While both groups valued being 'empathetic', a good 'communicator', a 'leader', and 'confident', they differed in their evaluation of other traits. The VE group highly valued being 'knowledgeable' (20.3%, $n = 11$), 'safe' (16.3%, $n = 9$), and 'adaptable' (14.7%, $n = 8$). In contrast, the HE group highly valued being 'passionate' (17.1%, $n = 12$), 'approachable' (15.7%, $n = 11$), and 'positive' (14.3%, $n = 10$).

Table 52*Educational Level Group Comparison of Personal Traits Required by Higher Education**Graduates*

VE qualification group		HE qualification group	
Personal traits	%	Personal traits	%
Empathetic	24.3	Empathetic	25.7
Communicator	20.1	Passionate	17.1
Knowledgeable	20.3	Approachable	15.7
Safe	16.3	Communicator	14.3
Adaptable	14.7	Positive	14.3
Resilience	14.2	Confident	12.9
Calm	14.5	Organised	12.9
Confident	12.6	Leaderly	11.4
Leaderly	12.7	Initiative	11.4
Patience	12.2	Team-player	11.4

Work Type. A high level of difference between the traits valued by each of the work type groups existed, with 60% of the traits differing (Table 54). There was general agreement between the groups about being 'empathetic', 'patient', a good 'communicator', and 'passionate'. The residential camping group valued being a good 'communicator' and 'knowledgeable' equal first (24.3%, $n = 9$), while the bush camping journeys group valued being 'empathetic' first (23.5%, $n = 16$). The residential camping group did not identify being 'empathetic' as their most highly valued trait.

Table 53*Work Type Group Comparison of Personal Traits Required by Graduates*

Residential camping group (<i>n</i> = 36)		Bush camping journeys group (<i>n</i> = 69)	
Personal traits	%	Personal traits	%
Communicator	24.2	Empathetic	23.5
Knowledgeable	24.2	Confident	16.2
Empathetic	21.2	Organised	14.7
Safe	21.2	Patience	13.2
Leaderly	18.2	Communicator	11.8
Passionate	15.2	Passionate	11.8
Adaptable	15.2	Teacherly	11.8
Positive	15.2	Compassionate	11.8
Willing to learn	15.2	Enthusiastic	11.8
Patience	12.1	Practical	11.8

Outdoor Education Student Learning Outcomes

Organisational Seniority. Overall, managers perceived the learning outcomes as less important than non-managers did. Managers rated the outdoor education learning outcomes as 'somewhat important' and 'important', with only 'participant personal development' (53.3%, *n* = 52) being perceived as very important (Table 55). In contrast, non-managers perceived the outcomes as important and very important, with only 'place-based knowledge' (42.9%, *n* = 16) and 'environmental science' (48.6%, *n* = 18) receiving a somewhat important rating. Despite the contrast, results showed no significant statistical difference regarding managers and non-managers perceptions of student learning outcomes.

Managers and non-managers agreed in the forced ranking that 'participant personal development' is the most important outdoor education learning outcome (Table 56). The groups also agreed on the three lowest ranked elements in the following descending order of importance: 'technical outdoor activity skills', 'place-based knowledge', then 'environmental science'. The remaining outcomes ranked in places two to five, occupying differing rankings, but never differing by more than one

position. The similarity in ranking suggests a high level of agreement between the groups.

Table 54*Organisational Seniority Comparison of Outdoor Education Student Learning Outcomes*

Learning outcomes	Manager (n = 97)							Non-Manager (n = 37)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Technical outdoor activity skills	0.0	1.1	5.4	13.0	34.8	20.7	25.0	0.0	2.9	14.3	11.4	22.9	37.1	11.4
Outdoor living and journeying	0.0	0.0	0.0	7.6	26.1	42.4	23.9	0.0	2.9	0.0	5.7	20.0	51.4	20.0
Health and wellbeing	0.0	0.0	0.0	5.4	19.6	45.7	29.3	0.0	0.0	0.0	2.9	17.1	40.0	40.0
Participant personal development	0.0	0.0	0.0	5.4	9.8	31.5	53.3	0.0	0.0	0.0	0.0	11.4	25.7	62.9
Community and group development	0.0	0.0	0.0	6.5	8.7	43.5	41.3	0.0	0.0	0.0	2.9	22.9	31.4	42.9
Place-based knowledge	0.0	0.0	2.2	12.0	42.4	30.4	13.0	0.0	2.9	14.3	2.9	42.9	28.6	8.6
Environmental science	0.0	0.0	3.3	23.9	38.0	27.2	7.6	0.0	0.0	11.4	8.6	48.6	17.1	14.3
Human/nature relationships	0.0	2.2	0.0	5.4	23.9	37.0	31.5	0.0	0.0	0.0	5.7	22.9	37.1	34.3

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat Important, I = Important, VI = Very Important.

Table 55*Organisational Seniority Comparison of Rankings of Student Learning Outcomes.*

Manager (n = 92)			Non-manager (n = 35)		
Rank	Learning outcomes	Rank score mean	Rank	Learning outcomes	Rank score mean
1	Personal development	2.15	1	Personal development	2.20
2	Community and group development	3.79	2	Health and wellbeing	3.49
3	Health and wellbeing	3.82	3	Community and group development	3.80
4	Human/nature relationships	4.17	4	Outdoor living and journeying	3.89
5	Outdoor living and journeying	4.53	5	Human/nature relationships	4.57
6	Technical outdoor activity skills	4.59	6	Technical outdoor activity skills	4.77
7	Place-based knowledge	6.28	7	Place-based knowledge	6.60
8	Environmental science	6.66	8	Environmental science	6.69

Note. Sorted from most to least importance by mean.

Education. Results revealed no statistical significance regarding the VE and HE education groups' perceptions of student learning outcomes (Table 57). The most notable descriptive difference was that the learning outcome 'technical outdoor activity skills' was perceived as 'very important' by the VE group (35.3%, $n = 19$) compared to 'somewhat important' by the HE group (34.3%, $n = 24$). The groups agreed on the remaining eight student learning outcomes. There was a considerable difference between the groups' ranking of learning outcomes for students by their level of importance (Table 58). The groups agreed on the most important learning outcome ('personal development') and the fifth ranked outcome ('outdoor living and journeying'). However, the groups differed in their ranking of the remaining learning outcomes by up to three rank items, indicating a marked difference in perceived importance. The largest differences were observed in the rankings of 'human/nature relationships' (ranked third by HE and sixth by VE) and the 'technical outdoor activity skills' (ranked fourth by VE and sixth by HE).

Table 56*Education Level Comparison of Student Learning Outcomes*

Learning outcomes	VE qualification (n = 54)							HE qualification (n = 71)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Technical outdoor activity skills	0.0	2.0	9.8	5.9	29.4	17.6	35.3	0.0	0.0	7.5	16.4	34.3	31.3	10.4
Outdoor living and journeying	0.0	0.0	0.0	7.8	27.5	39.2	25.5	0.0	0.0	0.0	6.0	22.4	49.3	22.4
Health and wellbeing	0.0	0.0	0.0	3.9	27.5	37.3	31.4	0.0	0.0	0.0	6.0	10.4	52.2	31.3
Participant personal development	0.0	0.0	0.0	3.9	9.8	25.5	60.8	0.0	0.0	0.0	4.5	10.4	34.3	50.7
Community and group development	0.0	0.0	0.0	5.9	11.8	37.3	45.1	0.0	0.0	0.0	6.0	11.9	44.8	37.3
Place-based knowledge	0.0	2.0	9.8	9.8	41.2	25.5	11.8	0.0	0.0	3.0	7.5	40.3	37.3	11.9
Environmental science	0.0	0.0	9.8	19.6	41.2	13.7	15.7	0.0	0.0	1.5	20.9	40.3	34.3	3.0
Human/nature relationships	0.0	2.0	0.0	3.9	29.4	33.3	31.4	0.0	1.5	0.0	6.0	17.9	43.3	31.3

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat Important, I = Important, VI = Very Important.

Table 57*Education Level Comparison of Rankings of Student Learning Outcomes*

VE qualification (n = 51)			HE qualification (n = 67)		
Rank	Learning outcomes	Rank score mean	Rank	Learning outcomes	Rank score mean
1	Personal development	2.04	1	Personal development	2.27
2	Community and group development	3.63	2	Health and wellbeing	3.60
3	Health and wellbeing	3.96	3	Human/nature relationships	3.93
4	Technical outdoor activity skills	4.14	4	Community and Group development	3.96
5	Outdoor living and journeying	4.35	5	Outdoor living and journeying	4.30
6	Human/nature relationships	4.78	6	Technical outdoor activity skills	4.99
7	Environmental science	6.55	7	Place-based knowledge	6.15
8	Place-based knowledge	6.55	8	Environmental science	6.82

Note. Sorted from most to least importance by mean.

Work Type. A high level of agreement existed across work type groups on the importance of student learning outcomes on the Likert scale (Table 59). The exception, with no statistical significance, was that the residential camping group rated 'health and wellbeing' as slightly more important than the bush camping journey group.

The relative ranking of the outdoor education learning outcomes showed some agreement and differences between the work type groups. The groups agreed that 'personal development' was the highest-ranked learning outcome, while 'place-based knowledge' and 'environmental science' were the lowest, in seventh and eighth place, respectively (Table 60). There was less agreement regarding the remaining outcomes with a difference between the groups of up to three rankings for the outcomes. While the bush camping journey group ranked 'health and wellbeing' (M=3.62) and 'human/nature relationships' (M = 3.85) second and third, the residential camping group ranked 'community and group development' (M = 3.44) second, and 'outdoor living and journeying' (M = 3.79) third.

Table 58*Work Type Comparison of Student Learning Outcomes*

Learning outcomes	Residential camping (n = 36)							Bush camping journey (n = 69)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Technical outdoor activity skills	0.0	2.9	5.9	5.9	38.2	20.6	26.5	0.0	0.0	9.2	12.3	32.3	29.2	16.9
Outdoor living and journeying	0.0	0.0	0.0	5.9	20.6	41.2	32.4	0.0	0.0	0.0	3.1	23.1	55.4	18.5
Health and wellbeing	0.0	0.0	0.0	2.9	20.6	38.2	38.2	0.0	0.0	0.0	4.6	20.0	47.7	27.7
Participant personal development	0.0	0.0	0.0	2.9	5.9	35.3	55.9	0.0	0.0	0.0	3.1	10.8	29.2	56.9
Community and group development	0.0	0.0	0.0	2.9	14.7	44.1	38.2	0.0	0.0	0.0	7.7	7.7	43.1	41.5
Place-based knowledge	0.0	2.9	5.9	5.9	38.2	32.4	14.7	0.0	0.0	4.6	12.3	43.1	29.2	10.8
Environmental science	0.0	0.0	11.8	11.8	44.1	23.5	8.8	0.0	0.0	3.1	21.5	35.4	29.2	10.8
Human/nature relationships	0.0	0.0	0.0	2.9	35.3	38.2	23.5	0.0	3.1	0.0	4.6	20.0	38.5	33.8

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat Important, I = Important, VI = Very Important.

Table 59*Work Type Comparison of Rankings of Student Learning Outcomes*

Residential Camping (n = 34)			Bush camping Journey (n = 65)		
Rank	Learning outcomes	Rank Score Mean	Rank	Learning outcomes	Rank Score Mean
1	Personal development	2.35	1	Personal development	1.98
2	Community and group development	3.44	2	Health and wellbeing	3.62
3	Outdoor living and journeying	3.79	3	Human/nature relationships	3.85
4	Health and wellbeing	4.26	4	Community and group development	4.05
5	Technical outdoor activity skills	4.53	5	Outdoor living and journeying	4.46
6	Human/nature relationships	4.79	6	Technical outdoor activity skills	4.74
7	Place-based knowledge	6.21	7	Place-based knowledge	6.58
8	Environmental science	6.62	8	Environmental science	6.72

Note. Sorted from most to least importance by mean.

Practical Experience for HE Outdoor Education Graduates: Between-Group Demographic Comparison

Results from questions posed in the questionnaire relating to the practical experience of HE outdoor education graduates are presented in the following section. Between-group demographic comparison for each question are noted.

Perceived Importance of Practical Experience for Higher Education Outdoor Education Graduates

Organisational Seniority. Managers and non-managers placed a high value on experience including 'practical experience', and 'work placements'. However, 'logbooks of practical experience' were less important (Table 61). The result regarding logbooks is noteworthy given that they are often used in the workplace, and during the education of HE outdoor education students to validate the level and currency of knowledge and skill.

Education. 'Practical experience' was highly valued by both the VE and HE groups. The VE education group placed a noticeably higher value on 'practical experience' than the HE group (Table 62). A higher proportion of the VE group (83.3%, $n = 45$) rated 'practical experience' as 'very important' when compared to the HE group (66.2%, $n = 47$). The groups agreed that 'course-based work placements' are important, and the VE group attributed more importance to 'logbooks' than did the HE group.

Work Type. 'Work type' was very important to both the bush camping journey and the residential groups. More of the bush camping journey group rated 'course-based work placements' as 'important' and more of the residential group rated it as 'very important'. 'Logbooks' were less valued by both groups, with more of the bush camping journey group rating them as 'important' and more of the residential group rating them as 'somewhat important'.

Table 60

Organisational Seniority Comparison of the Importance of Practical Experience, Logbooks of Practical Experience, and Work Placements for Higher Education Graduates

Work experience elements	Manager (<i>n</i> = 97)							Non-Manager (<i>n</i> = 37)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Practical experience for outdoor education leadership graduates	1.0	0.0	0.0	0.0	2.1	23.7	73.2	5.4	0.0	0.0	0.0	8.1	16.2	70.3
A logbook of practical experience	2.1	0.0	5.2	10.3	35.1	29.9	17.5	2.7	0.0	2.7	10.8	32.4	35.1	16.2
Course-based work placements	0.0	0.0	1.0	1.0	23.7	35.1	39.2	5.4	0.0	2.7	0.0	24.3	40.5	27.0

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat Important, I = Important, VI = Very Important.

Table 61

Education Level Comparison of the Importance of Practical Experience, Logbooks of Practical Experience, and Work Placements for Higher Education Graduates

Work experience element	VE Qualification (<i>n</i> = 54)							HE Qualification (<i>n</i> = 71)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Practical experience for outdoor education leadership graduates	0.0	0.0	0.0	0.0	1.9	14.8	83.3	4.2	0.0	0.0	0.0	5.6	23.9	66.2
A logbook of practical experience	1.9	0.0	7.4	13.0	27.8	27.8	22.2	2.8	0.0	2.8	9.9	40.8	28.2	15.5
Course-based work placements	0.0	0.0	3.7	0.0	20.4	38.9	37.0	2.8	0.0	0.0	1.4	26.8	32.4	36.6

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat Important, I = Important, VI = Very Important.

Table 62

Work Type Comparison of the Importance of Practical Experience, Logbooks of Practical Experience, and Work Placements for Higher Education Graduates

Work experience elements	Residential camping (<i>n</i> = 36)							Bush camping journey (<i>n</i> = 69)						
	VU	U	SU	N	SI	I	VI	VU	U	SU	N	SI	I	VI
Practical experience for outdoor education leadership graduates	2.8	0.0	0.0	0.0	2.8	11.1	83.3	2.9	0.0	0.0	0.0	2.9	24.6	69.6
A logbook of practical experience	2.8	0.0	2.8	8.3	36.1	33.3	16.7	1.4	0.0	7.2	11.6	29.0	30.4	20.3
Course-based work placements	0.0	0.0	0.0	0.0	22.2	52.8	25.0	2.9	0.0	1.4	1.4	24.6	29.0	40.6

Note. VU = Very unimportant, U = Unimportant, SU = Somewhat unimportant, N = Neither unimportant nor important, SI = Somewhat Important, I = Important, VI = Very Important.

Type of Practical Experience

Organisational Seniority. Managers and non-managers agreed on the type of field-based experience required of a HE outdoor education graduate (Table 64).

'Outdoor activity skill development' and 'technical safety training courses' were the most preferred types of practical experience by both groups and 'urban outdoor experiences' and 'international expeditions' were the least selected.

Education. A between-group comparison of participants' recommendations in the VE and HE groups on the types of field-based experience required of outdoor educators is presented in Table 64. The results for educational level show that VE and HE groups were mostly in agreement, with the exceptions of 'bush base camps' and 'lightweight journeying'. More of the VE group recommended 'bush base camps' than 'lightweight journeying', while the HE group made these recommendations in the reverse order of importance. Both groups preferred types of practical experience were 'outdoor activity skill development' and 'technical safety training' courses.

Work Type. A demographic between-group comparison of the residential camping and bush camping journey groups' recommendations on the field-based experience required of HE outdoor education graduates is presented in Table 64. The work type results show that residential camping and bush camping journey groups were mostly in agreement in their prioritisation of lightweight journeying. More of the bush camping journey group recommended 'bush base camps' than 'lightweight journeying', while the residential camping group recommendations were the reverse. In both groups, more respondents recommended 'outdoor activity skill development' and 'technical safety training courses' than any other experience type. It is interesting to observe that the residential camping group did not value 'residential camping experience' more highly than the other types, considering how specific that experience is to their work type.

Table 63

Demographic Group Comparison of Recommendations of the Types of Field-Based Experience Required of Higher Education Outdoor Education Graduates

Field experience type	Organisational seniority		Educational level		Work type	
	Manager (<i>n</i> = 94)	Non-manager (<i>n</i> = 37)	VE AQF Levels 1—6 (<i>n</i> = 53)	HE AQF Levels 7—10 (<i>n</i> = 69)	Residential Camping (<i>n</i> = 34)	Bush camping journeys (<i>n</i> = 68)
	%	%	%	%	%	%
Outdoor activity skill development	97	97	98	97	94	99
Lightweight journeying	56	73	54	66	72	57
Technical safety training courses	81	89	81	89	78	86
Bush base camps	48	73	56	54	56	58
Residential camping	30	32	28	31	28	33
Urban outdoor experiences	20	19	11	25	22	16
International expeditions	9	19	9	11	8	14

Duration, Frequency, and Amount of Practical Experience

Organisational Seniority. Managers and non-managers mostly agreed on the recommended number of practical field experiences a HE outdoor education graduate should ideally have by trip length (Table 65). One exception related to the second most frequently required trip length, with managers preferring more trips of 2–3 days ($M = 6.3$) and non-managers preferring more trips of 3–7 days ($M = 8.1$). When ranking the relative importance of field-based trip lengths, there was a high level of agreement between managers and non-managers (Table 66). The ranking results show the only disagreement was in the middle-rankings, with managers ranking day trips ($M = 3.2$) slightly higher than 1–2-week trips ($M = 3.3$), and non-managers ranking them in the reverse order.

Education. VE and HE qualified participants agreed on the number of practical field experiences a HE outdoor education graduate should have by trip length (Table 65) and in their ranking of the number of practical field experiences a HE outdoor education graduate should have by trip length (Table 66).

Work Type. When comparing participants' recommendations on the number of practical field experiences a HE outdoor education graduate should have by trip length, the residential camping and bush camping journey groups were mostly in agreement (Table 65), with one exception. The residential camping group recommended that more 3–7 day multiday trips were required than 2–3 day multiday trips, while the bush camping journey group recommended the opposite. Residential camping and bush camping journey groups were consistent in their rankings of the number of practical field experiences an outdoor education graduate should have by trip length (Table 66).

Table 64

Demographic Group Comparison of Recommendations of the Number of Practical Field Experiences a Higher Education Outdoor Education Graduate Should Have by Trip Length

Trip length	Organisational seniority		Educational level		Work type	
	Manager (<i>n</i> = 94)	Non-manager (<i>n</i> = 37)	VE AQF Levels 1—6 (<i>n</i> = 53)	HE AQF Levels 7—10 (<i>n</i> = 69)	Residential Camping (<i>n</i> = 34)	Bush camping journeys (<i>n</i> = 68)
	M	M	M	M	M	M
Day trips	11.7	8.3	11.1	10.3	9.3	11.3
2–3 day, multiday trips	6.3	7.2	6.7	6.7	4.0	7.7
3–7 day, multiday trips	5.6	8.1	6.7	6.3	4.2	7.4
1–2-week trips	1.7	2.5	1.8	1.9	2.0	2.1
2–3-week trips	0.7	0.9	0.7	0.8	0.7	0.8
more than 3-week trip	0.2	0.2	0.2	0.2	0.1	0.3

Table 65

Demographic Group Comparison of Ranking Relative Importance of Field-Based Trip Lengths Higher Education Graduates Have Prior to Employment as a Group Leader

Rank	Organisational seniority				Educational level				Work type			
	Manager (n = 97)		Non-manager (n = 37)		VE Qualification (n = 54)		HE Qualification (n = 71)		Residential Camping (n = 36)		Bush camping Journey (n = 69)	
	Item	Mean	Item	Mean	Item	Mean	Item	Mean	Item	Mean	Item	Mean
1	3–7 multiday trips	2.2	3–7 multiday trips	1.8	3–7 multiday trips	2.2	3–7 multiday trips	2.0	3–7 multiday trips	2.1	3–7 multiday trips	2.0
2	2–3 multiday trips	2.5	2–3 multiday trips	2.6	2–3 multiday trips	2.6	2–3 multiday trips	2.4	2–3 multiday trips	2.6	2–3 multiday trips	2.6
3	day trips	3.2	1–2 week trips	3.5	day trips	3.2	day trips	3.4	1–2 week trips	3.2	1–2 week trips	3.2
4	1–2 week trips	3.3	day trips	3.8	1–2 week trips	3.3	1–2 week trips	3.5	day trips	3.6	day trips	3.6
5	2–3 week trips	4.2	2–3 week trips	4.4	2–3 week trips	4.3	2–3 week trips	4.2	2–3 week trips	4.1	2–3 week trips	4.3
6	more than 3 week trip	5.6	more than 3 week trip	5.0	more than 3 week trip	5.4	more than 3 week trip	5.4	more than 3 week trip	5.4	more than 3 week trip	5.3

Note: Sorted by mean ranking from most to least preferred.

Adventure Activities and Practical Experience

Organisational Seniority. The organisational seniority groups made similar recommendations on approximately how many days of practical experience are needed for a HE outdoor education graduate to lead selected adventure activities with two exceptions (Table 67). These exceptions included non-managers recommended ten more days experience than managers for 'river rafting', while managers recommended ten days more experience than non-managers for 'cycle touring'.

Education. Little difference existed between the education level groups' recommendations of the number of practical experience days required for a HE outdoor education graduate to lead selected adventure activities (Table 68) was 1. The only exception was 'river rafting', with the VE group recommendations split between 20 and 30 days and the HE group preferring 20 days.

Work Type. The work type groups' recommendations on the approximate number of practical experience days for a HE outdoor education graduate to lead selected adventure activities is presented in Table 69. There were a few notable (though not statistically significant) differences between the groups. For example, in comparison to the bush camping journey group, the residential camping group recommended up to ten days less experience for 'abseiling' and 'caving', and ten days more for 'cycle touring'.

Table 66

Organisational Seniority Comparison of Practical Experience Days Necessary for Higher Education Graduates to Lead Selected Adventure Activities

Adventure activities	Manager (n = 94)								Non-Manager (n = 35)							
	Days								Days							
	NA %	0 %	10 %	20 %	30 %	40 %	50 %	50+ %	NA %	0 %	10 %	20 %	30 %	40 %	50 %	50+ %
Rock climbing (Top Rope)	8.5	0.0	25.5	30.9	19.1	6.4	2.1	7.4	14.3	0.0	17.1	34.3	20.0	5.7	2.9	5.7
Abseiling (Single Pitch)	7.4	0.0	29.5	35.8	14.7	6.3	0.0	6.3	11.4	0.0	22.9	28.6	20.0	2.9	8.6	5.7
Bushwalking (Multiday semi-remote areas)	4.3	0.0	19.1	37.2	20.2	8.5	8.5	2.1	5.7	0.0	8.6	31.4	28.6	14.3	2.9	8.6
River rafting (Up to Grade 3)	11.8	0.0	8.6	34.4	20.4	11.8	7.5	5.4	17.1	0.0	2.9	11.4	28.6	22.9	11.4	5.7
Caving	16.3	1.1	26.1	31.5	15.2	5.4	3.3	1.1	22.9	0.0	20.0	22.9	5.7	5.7	14.3	8.6
Cycle touring (Multiday semi-remote areas)	15.6	3.3	30.0	35.6	10.0	2.2	1.1	2.2	14.3	5.7	40.0	20.0	14.3	2.9	0.0	2.9
Challenge ropes	10.9	3.3	54.3	21.7	6.5	1.1	2.2	0.0	2.9	0.0	65.7	20.0	8.6	2.9	0.0	0.0
Canoeing (inland flat water)	5.3	4.3	40.4	30.9	12.8	3.2	2.1	1.1	5.7	0.0	37.1	34.3	14.3	5.7	2.9	0.0

Table 67

Educational Level Comparison of Practical Experience Days Necessary for Higher Education Graduates to Lead Selected Adventure Activities

Adventure activities	VE Qualification (n = 52)								HE Qualification (n = 69)							
	Days								Days							
	NA	0	10	20	30	40	50	50+	NA	0	10	20	30	40	50	50+
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Rock climbing (Top Rope)	7.7	0.0	25.0	36.5	19.2	5.8	1.9	3.8	11.6	0.0	18.8	30.4	20.3	7.2	2.9	8.7
Abseiling (Single Pitch)	5.7	0.0	24.5	43.4	15.1	5.7	1.9	3.8	10.1	0.0	26.1	30.4	17.4	5.8	1.4	8.7
Bushwalking (Multiday semi-remote areas)	3.8	0.0	13.2	43.4	22.6	7.5	5.7	3.8	4.3	0.0	14.5	31.9	24.6	13.0	8.7	2.9
River rafting (Up to Grade 3)	5.8	0.0	9.6	25.0	25.0	21.2	9.6	3.8	17.6	0.0	4.4	29.4	23.5	10.3	8.8	5.9
Caving	15.7	2.0	29.4	27.5	9.8	5.9	7.8	2.0	19.1	0.0	20.6	29.4	16.2	5.9	5.9	2.9
Cycle touring (Multiday semi-remote areas)	12.0	6.0	40.0	24.0	14.0	2.0	0.0	2.0	16.2	2.9	26.5	38.2	10.3	2.9	1.5	1.5
Challenge ropes	5.9	0.0	58.8	23.5	9.8	2.0	0.0	0.0	11.6	4.3	55.1	20.3	4.3	1.4	2.9	0.0
Canoeing (inland flat water)	5.7	3.8	39.6	35.8	9.4	3.8	0.0	1.9	2.9	2.9	39.1	30.4	15.9	4.3	4.3	0.0

Table 68

Work type Comparison of Practical Experience Days Necessary for Higher Education Graduates to Lead Selected Adventure Activities

Adventure activities	Residential camping (n = 34)								Bush camping journey (n = 67)							
	Days								Days							
	NA %	0 %	10 %	20 %	30 %	40 %	50 %	50+ %	NA %	0 %	10 %	20 %	30 %	40 %	50 %	50+ %
Rock climbing (Top Rope)	3.0%	0.0	30.3	33.3	18.2	3.0	3.0	9.1	9.0	0.0	19.4	34.3	19.4	6.0	3.0	9.0
Abseiling (Single Pitch)	2.9%	0.0	32.4	32.4	14.7	8.8	0.0	8.8	6.0	0.0	25.4	37.3	14.9	6.0	4.5	6.0
Bushwalking (Multiday semi-remote areas)	0.0%	0.0	18.2	33.3	24.2	6.1	15.2	3.0	3.0	0.0	14.9	37.3	20.9	14.9	4.5	4.5
River rafting (Up to Grade 3)	12.1 %	0.0	15.2	30.3	12.1	12.1	12.1	6.1	11.9	0.0	4.5	28.4	25.4	13.4	9.0	7.5
Caving	9.4%	3.1	34.4	28.1	6.3	12.5	6.3	0.0	20.9	0.0	22.4	31.3	14.9	0.0	4.5	6.0
Cycle touring (Multiday semi-remote areas)	9.7%	6.5	32.3	35.5	12.9	0.0	0.0	3.2	16.7	4.5	36.4	24.2	9.1	4.5	1.5	3.0
Challenge ropes	6.3%	0.0	62.5	18.8	6.3	3.1	3.1	0.0	6.1	4.5	56.1	24.2	6.1	1.5	1.5	0.0
Canoeing (inland flat water)	3.0%	3.0	39.4	36.4	9.1	6.1	3.0	0.0	4.5	4.5	40.3	34.3	11.9	1.5	1.5	1.5

Elements of Knowledge, Skill, and Practical Experience

Organisational Seniority. Noteworthy differences emerged when comparing the organisational seniority groups recommendations of how many days practical experience leading are needed to attain sufficient knowledge and skills to the level of an outdoor education group leader (Table 70). First, managers recommended that 40 days are needed to develop 'outdoor education leadership', while most non-managers recommended half that number. Outdoor education leadership is the knowledge and skill area where soft skills and outdoor education pedagogy sits. Second, non-managers recommended that the general 'outdoor living and journeying' skills and knowledge required 30 days in total, which was 10 days more experience than managers recommended. Third, and contrary to the hard and technical skills focus non-managers have non-managers recommended that 'human/nature relationships' require up to 20 days more than the duration recommended by managers.

Education. When comparing recommendations of the number of practical experience days leading groups were required to attain the knowledge and skills of an outdoor education group leader, two differences emerged (Table 71). Firstly, more of the HE group than the VE recommended 40, 50, and 50+ days for 'outdoor living and journeying'. Secondly for 'place-based knowledge' more of the VE group recommended zero or 10 days, while more of the HE group recommended 20 or 30 days. Although the HE group tended to recommend more days experience for 'risk management' and 'health and wellbeing' than the VE group, when looking at the most popular response, the difference was high. The groups agreed upon only three areas of knowledge and skills: 'outdoor education leadership', 'environmental science', and 'human/nature relationships'.

Work Type. When comparing the work type groups' recommendations on how many days of practical leading experience were needed to attain the knowledge and skills of an outdoor education group leader, several notable differences (not statistically

significant) emerged (Table 72). Most of the residential camping group recommended that 'outdoor living and journeying' required 50-plus days of experience, which is descriptively notably more than the bush camping journey group's most popular response of 20 days. Overall, most of the bush camping journey group's recommendations range between 10 and 30 days for every knowledge and skill area. In comparison, the residential camping group's recommendations were spread more broadly between 10 and 50-plus days, highlighting a greater variability of opinion among the residential camping group participants than among the bush camping journey group participants.

Table 69*Organisational Seniority Comparison of Practical Experience Days Necessary to Attain the Knowledge and Skill of an Outdoor Education Group Leader*

Knowledge and skill element	Manager (n = 97)									Non-Manager (n = 37)							
	Days									Days							
	NA	0	10	20	30	40	50	50+	NA	0	10	20	30	40	50	50+	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
Outdoor living and journeying	5.3	0.0	16.8	29.5	12.6	16.8	4.2	14.7	5.6	0.0	8.3	16.7	25.0	13.9	8.3	22.2	
Risk management	3.2	1.1	17.9	20.0	20.0	11.6	9.5	16.8	0.0	0.0	5.6	30.6	25.0	13.9	8.3	16.7	
Outdoor education leadership	3.2	0.0	14.7	18.9	17.9	21.1	11.6	12.6	0.0	0.0	5.6	33.3	16.7	16.7	11.1	16.7	
Health and wellbeing	7.4	2.1	29.5	23.2	14.7	10.5	3.2	9.5	2.8	2.8	22.2	27.8	22.2	8.3	2.8	11.1	
Participant personal development	6.3	2.1	12.6	29.5	16.8	13.7	6.3	12.6	0.0	0.0	16.7	19.4	36.1	8.3	11.1	8.3	
Community and group development	5.3	3.2	21.1	26.3	14.7	15.8	4.2	9.5	0.0	2.8	11.1	27.8	36.1	11.1	2.8	8.3	
Place-based knowledge	8.4	3.2	34.7	21.1	14.7	3.2	5.3	9.5	2.8	5.6	33.3	11.1	16.7	11.1	2.8	16.7	
Environmental science	10.5	6.3	31.6	17.9	12.6	8.4	5.3	7.4	8.3	2.8	25.0	19.4	19.4	5.6	5.6	13.9	
Human/nature relationships	7.4	2.1	29.5	21.1	14.7	11.6	6.3	7.4	0.0	2.8	22.2	22.2	22.2	13.9	0.0	16.7	

Table 70*Educational Comparison of Practical Experience Days Necessary to Attain the Knowledge and Skill of an Outdoor Education Group Leader*

Knowledge and skill element	VE Qualification (n = 53)									HE Qualification (n = 69)							
	Days									Days							
	NA	0	10	20	30	40	50	50+	NA	0	10	20	30	40	50	50+	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
Outdoor living and journeying	7.5	0.0	18.9	24.5	22.6	11.3	3.8	11.3	1.4	0.0	11.6	24.6	13.0	21.7	5.8	21.7	
Risk management	3.8	0.0	18.9	24.5	22.6	5.7	9.4	15.1	1.4	0.0	11.6	18.8	21.7	18.8	8.7	18.8	
Outdoor education leadership	3.8	0.0	15.1	20.8	18.9	18.9	5.7	17.0	1.4	0.0	10.1	23.2	17.4	20.3	15.9	11.6	
Health and wellbeing	5.7	3.8	30.2	24.5	13.2	13.2	1.9	7.5	7.2	1.4	26.1	21.7	21.7	7.2	2.9	11.6	
Participant personal development	5.7	3.8	13.2	20.8	26.4	13.2	3.8	13.2	4.3	0.0	15.9	31.9	14.5	13.0	10.1	10.1	
Community and group development	5.7	5.7	18.9	20.8	24.5	11.3	3.8	9.4	2.9	1.4	20.3	27.5	17.4	18.8	2.9	8.7	
Place-based knowledge	7.5	7.5	41.5	13.2	13.2	5.7	1.9	9.4	5.8	1.4	29.0	21.7	17.4	5.8	4.3	14.5	
Environmental science	11.3	9.4	34.0	15.1	7.5	7.5	3.8	11.3	7.2	1.4	29.0	18.8	20.3	8.7	5.8	8.7	
Human/nature relationships	5.7	3.8	34.0	18.9	17.0	7.5	1.9	11.3	5.8	0.0	24.6	21.7	17.4	14.5	5.8	10.1	

Table 71

Work Type Comparison of Practical Experience Days Necessary to Attain the Knowledge and Skill of an Outdoor Education Group Leader

Knowledge and skill element	Residential camping (n = 36)								Bush camping journey (n = 66)							
	Days								Days							
	NA %	0 %	10 %	20 %	30 %	40 %	50 %	50+ %	NA %	0 %	10 %	20 %	30 %	40 %	50 %	50+ %
Outdoor living and journeying	5.6	0.0	16.7	19.4	13.9	13.9	8.3	22.2	1.5	0.0	10.6	28.8	16.7	21.2	4.5	16.7
Risk management	0.0	2.8	11.1	16.7	25.0	16.7	11.1	16.7	1.5	0.0	12.1	25.8	19.7	12.1	10.6	18.2
Outdoor education leadership	0.0	0.0	8.3	13.9	16.7	25.0	19.4	16.7	1.5	0.0	9.1	28.8	19.7	16.7	9.1	15.2
Health and wellbeing	0.0	5.6	27.8	22.2	22.2	8.3	5.6	8.3	7.6	1.5	24.2	25.8	15.2	13.6	3.0	9.1
Participant personal development	0.0	2.8	11.1	36.1	22.2	8.3	5.6	13.9	4.5	1.5	12.1	22.7	22.7	13.6	12.1	10.6
Community and group development	0.0	2.8	11.1	36.1	25.0	8.3	8.3	8.3	4.5	4.5	19.7	19.7	21.2	16.7	3.0	10.6
Place-based knowledge	5.6	2.8	27.8	16.7	25.0	5.6	5.6	11.1	6.1	4.5	36.4	19.7	12.1	7.6	3.0	10.6
Environmental science	8.3	11.1	16.7	16.7	19.4	11.1	5.6	11.1	9.1	3.0	31.8	19.7	13.6	7.6	6.1	9.1
Human/nature relationships	0.0	2.8	22.2	27.8	22.2	11.1	2.8	11.1	7.6	1.5	31.8	19.7	12.1	12.1	6.1	9.1

Modes of Educational Delivery for Undergraduates: Between-Group

Demographic Comparison. The demographic groups' comparative results as they relate to the selection of appropriate HE educational delivery modes for each of the 12 outdoor education learning outcomes are presented in the following section.

Participants could select as many educational delivery modes as they believed relevant. The most preferred educational mode used for comparison and identified by each group is noted in Table 73 and Table 74.

Organisational Seniority. Similarities existed between managers' and non-managers' most preferred delivery modes (Table 73). An overall tendency existed from both groups towards practical oriented educational modes balanced with lectures/tutorials and workshops. However, managers reported a higher preference for online and lecture/tutorial modes for almost all knowledge and skill elements (excluding outdoor education leadership) when compared to non-managers.

Education. When comparing the perceptions of participants with VE qualifications to those with HE qualifications, differences were found relating to their most preferred delivery modes. However, overall, these differences were slight (Table 74). The most considerable variation related to delivery modes for 'human/nature relationships', with the VE group preferring lectures/tutorials overall and the HE group preferring student-led trips.

Work Type. The residential camping and bush camping journey work type groups reported similar most preferred delivery modes (Table 75). Although the most preferred mode varied for 'human/nature relationships', 'outdoor living and journeying', 'participant personal development', and 'place-based knowledge', the percentage of difference for each mode was not substantial.

Table 72*Organisational Seniority Education Level Comparison of Participants' Preferences for Undergraduate Educational Delivery Modes for Attaining the Knowledge and Skills*

Knowledge and skill element	Manager (n = 95)								Non-Manager (n = 36)							
	NA	Online	Lectures/ tutorials	Workshops	Technical training courses	Practicum/ work placement	Supervised field work	Student led trips	NA	Online	Lectures/ tutorials	Workshops	Technical training courses	Practicum/ work placement	Supervised field work	Student led trips
Health and wellbeing	2.1	53.2	77.7	76.6	31.9	57.4	55.3	53.2	2.8	44.4	75.0	77.8	22.2	58.3	58.3	50.0
Community and group development	2.1	31.9	61.7	59.6	34.0	77.7	72.3	74.5	2.8	22.2	44.4	63.9	22.2	83.3	69.4	52.8
Environmental science	3.2	68.1	90.4	74.5	40.4	59.6	63.8	56.4	8.3	58.3	75.0	58.3	25.0	61.1	50.0	36.1
Human/nature relationships	3.2	44.7	77.7	70.2	33.0	71.3	69.1	72.3	2.8	36.1	55.6	61.1	22.2	77.8	77.8	72.2
Outdoor living and journeying	1.1	17.0	40.4	40.4	44.7	75.5	75.5	85.1	0.0	11.1	25.0	30.6	41.7	66.7	69.4	86.1
Outdoor education leadership	1.1	28.7	69.1	69.1	44.7	87.2	89.4	77.7	2.8	33.3	58.3	66.7	38.9	83.3	88.9	63.9
Participant personal development	1.1	35.1	59.6	70.2	51.1	83.0	80.9	72.3	0.0	25.0	47.2	63.9	27.8	80.6	66.7	72.2
Place-based knowledge	2.1	47.9	56.4	60.6	29.8	76.6	76.6	75.5	5.6	44.4	47.2	41.7	25.0	72.2	69.4	69.4
Risk management	3.2	60.6	90.4	79.8	64.9	74.5	67.0	55.3	0.0	44.4	75.0	75.0	69.4	75.0	72.2	44.4
Safety	2.1	56.4	84.0	75.5	71.3	78.7	77.7	54.3	0.0	41.7	66.7	80.6	80.6	75.0	69.4	52.8
Technical outdoor activity instruction	1.1	11.7	34.0	53.2	75.5	89.4	87.2	55.3	0.0	5.6	33.3	58.3	69.4	88.9	88.9	55.6
Technical outdoor activity skills	1.1	20.2	33.0	59.6	92.6	76.6	79.8	54.3	0.0	8.3	22.2	52.8	83.3	75.0	86.1	55.6

Table 73*Education Comparison of Participants' Preferences for Undergraduate Educational Delivery Modes for Attaining the Knowledge and Skills*

Knowledge and skill element	VE Qualification (n = 53)								HE Qualification (n = 69)							
	NA	Online	Lectures/ tutorials	Workshops	Technical training courses	Practicum/ work placement	Supervised field work	Student led trips	NA	Online	Lectures/ tutorials	Workshops	Technical training courses	Practicum/ work placement	Supervised field work	Student led trips
Health and wellbeing	1.9	56.6	81.1	86.8	30.2	49.1	45.3	43.4	1.5	48.5	75.0	69.1	27.9	64.7	64.7	58.8
Community and group development	3.8	37.7	62.3	66.0	30.2	81.1	62.3	62.3	1.5	25.0	54.4	55.9	29.4	76.5	76.5	73.5
Environmental science	1.9	66.0	86.8	75.5	37.7	58.5	56.6	45.3	4.4	63.2	86.8	66.2	35.3	63.2	66.2	55.9
Human/nature relationships	1.9	49.1	79.2	71.7	34.0	75.5	66.0	67.9	4.4	33.8	66.2	61.8	27.9	72.1	75.0	79.4
Outdoor living and journeying	0.0	15.1	28.3	32.1	43.4	69.8	67.9	86.8	1.5	16.2	41.2	39.7	45.6	73.5	75.0	85.3
Outdoor education leadership	1.9	35.8	66.0	75.5	43.4	86.8	86.8	67.9	1.5	27.9	69.1	61.8	42.6	85.3	89.7	79.4
Participant personal development	0.0	39.6	62.3	79.2	41.5	79.2	67.9	67.9	1.5	27.9	52.9	58.8	45.6	83.8	80.9	75.0
Place-based knowledge	1.9	52.8	52.8	60.4	34.0	81.1	73.6	67.9	1.5	42.6	54.4	51.5	25.0	77.9	80.9	82.4
Risk management	1.9	54.7	83.0	71.7	64.2	73.6	66.0	41.5	2.9	57.4	89.7	83.8	69.1	76.5	67.6	60.3
Safety	0.0	54.7	75.5	79.2	66.0	79.2	75.5	45.3	2.9	52.9	83.8	73.5	80.9	76.5	72.1	58.8
Technical outdoor activity instruction	0.0	9.4	34.0	54.7	69.8	92.5	86.8	49.1	1.5	11.8	35.3	54.4	76.5	86.8	86.8	60.3
Technical outdoor activity skills	0.0	15.1	22.6	64.2	90.6	79.2	84.9	54.7	1.5	17.6	35.3	52.9	91.2	73.5	76.5	55.9

Table 74*Work Type Education Level Comparison of Participants' Preferences for Undergraduate Educational Delivery Modes for Attaining the Knowledge and Skills*

Knowledge and skill element	Residential camping (n = 35)								Bush camping journey (n = 35)							
	NA	Online	Lectures/ tutorials	Workshops	Technical training courses	Practicum/ work placement	Supervised field work	Student led trips	NA	Online	Lectures/ tutorials	Workshops	Technical training courses	Practicum/ work placement	Supervised field work	Student led trips
Health and wellbeing	2.9%	62.9%	82.9%	77.1%	28.6%	51.4%	45.7%	45.7%	1.5%	40.9%	74.2%	75.8%	28.8%	60.6%	59.1%	56.1%
Community and group development	2.9%	31.4%	74.3%	71.4%	40.0%	82.9%	74.3%	68.6%	1.5%	21.2%	48.5%	51.5%	22.7%	78.8%	71.2%	68.2%
Environmental science	2.9%	68.6%	91.4%	77.1%	40.0%	62.9%	68.6%	45.7%	3.0%	63.6%	84.8%	69.7%	34.8%	62.1%	57.6%	53.0%
Human/nature relationships	0.0%	54.3%	85.7%	77.1%	28.6%	80.0%	77.1%	65.7%	3.0%	39.4%	71.2%	63.6%	30.3%	69.7%	68.2%	72.7%
Outdoor living and journeying	0.0%	8.6%	37.1%	45.7%	48.6%	88.6%	82.9%	85.7%	0.0%	15.2%	30.3%	34.8%	40.9%	68.2%	72.7%	90.9%
Outdoor education leadership	2.9%	42.9%	80.0%	71.4%	45.7%	91.4%	94.3%	68.6%	0.0%	21.2%	53.0%	65.2%	39.4%	84.8%	87.9%	75.8%
Participant personal development	0.0%	42.9%	68.6%	74.3%	57.1%	82.9%	85.7%	77.1%	0.0%	25.8%	51.5%	63.6%	39.4%	78.8%	71.2%	66.7%
Placebased knowledge	2.9%	48.6%	65.7%	60.0%	37.1%	80.0%	74.3%	68.6%	0.0%	45.5%	45.5%	53.0%	25.8%	75.8%	74.2%	78.8%
Risk management	5.7%	60.0%	91.4%	77.1%	60.0%	68.6%	74.3%	54.3%	0.0%	51.5%	84.8%	78.8%	63.6%	77.3%	65.2%	50.0%
Safety	2.9%	60.0%	85.7%	77.1%	80.0%	74.3%	82.9%	48.6%	0.0%	45.5%	78.8%	78.8%	66.7%	77.3%	71.2%	51.5%
Technical outdoor activity instruction	0.0%	11.4%	45.7%	54.3%	77.1%	91.4%	88.6%	54.3%	0.0%	6.1%	24.2%	50.0%	72.7%	89.4%	86.4%	56.1%
Technical outdoor activity skills	0.0%	17.1%	31.4%	65.7%	94.3%	80.0%	94.3%	54.3%	0.0%	13.6%	25.8%	47.0%	87.9%	74.2%	75.8%	54.5%

Chapter Review

Outlining the results from the quantitative phase of this mixed methods study, the chapter presented the findings in two parts firstly the results from all participants ($n = 134$), secondly a between-group demographic comparison. The group demographic comparison consisted of six subgroups (two groups per set) regarding 'organisational seniority' (managers versus non-managers), 'education' (VE qualification versus HE qualification), and 'work type' (residential camping versus bush camping journey) (Table 45).

Demographically, participants were predominately 'male' (68%, $n = 91$) and aged between 21 and 50 years (84%, $n = 112$) (Table 24). Regarding education 79% ($n = 106$) of participants had achieved a HE qualification, with just over half of participants (57%, $n = 76$) attaining a HE outdoor education/recreation qualification (AQF Levels 7–9). In regard to the participant's organisation the top three program types were multiday bush camping journey (48 %, $n = 64$), multiday residential camp (29%, $n = 40$), and single-day one-off experience (14%, $n = 19$) (Table 25).

Findings revealed HE outdoor education graduates require 13 areas of knowledge and skill. Safety, risk management and outdoor education leadership were identified as the most important (Table 28). HE outdoor education graduates are required to deliver learning outcomes for students in their programs. Student learning outcomes of personal development, health and wellbeing, and community and group development outcomes were identified as the three most important (Table 33). The refinement of these 13 areas of knowledge and skill are discussed in detail in the discussion chapter.

Practical experience for outdoor educators was addressed next in the results. Participants agreed that practical experience is very important (72.4%, $n = 97$) for HE outdoor education graduates (Table 35). Most participants (96.3%, $n = 129$) agreed that 'practical course-based work placement' is important for graduate leaders. Results

also revealed that 'outdoor activity skill development' (97%, $n = 130$), 'technical safety training courses' (83.6%, $n = 112$) and 'lightweight journeying' (60.5%, $n = 81$), are the top three types of practical field experience preferred by participants (Table 36).

The duration, frequency, and amount of practical experience can vary on outdoor education programs and was reported next in this section. Participants preferred practical experience involving shorter trip duration (< 7 days) undertaken more frequently than longer trip duration (> 7 days) (Table 38). The most preferred field-based trip by duration were '3–7 multiday trips' ($M=2.1$), followed by '2–3 multiday trips' ($M = 2.5$), then day trips (Table 39). In regard to adventure activities and practical experience duration participants perceived HE outdoor education graduates require between 10 or 20 days of practical experience as an activity leader dependant on the activity (Table 40). For the elements of knowledge and skills, practitioners perceived that between 10 days and 20 days were required for each element (Table 42).

The modes of educational delivery for undergraduates were reported next. Overall 'practicum/work placement' was the most preferred educational mode followed by the institutionally delivered modes of 'supervised fieldwork', 'student-led trips', and 'workshops' in that order (Figure 13). When presented with the elements of knowledge and skills participants nominated 'practicum/work placement' as appropriate to teach most knowledge and skill elements with the second most preferred mode being 'lectures and tutorials' (Table 43).

Part 2 of the chapter presented results from the between-group demographic comparison. Although descriptive differences were identified between the demographic groups, none of these differences were of statistical significance.

The quantitative results chapter provided the results and analysis of Phase 3 the online questionnaire. The following chapter, the discussion, consolidates the literature reviewed, findings from the qualitative phases of the study and quantitative results from this chapter to explore the knowledge, skills, and practical experience required by students in HE who graduate to become outdoor educators.

Chapter 7. Discussion

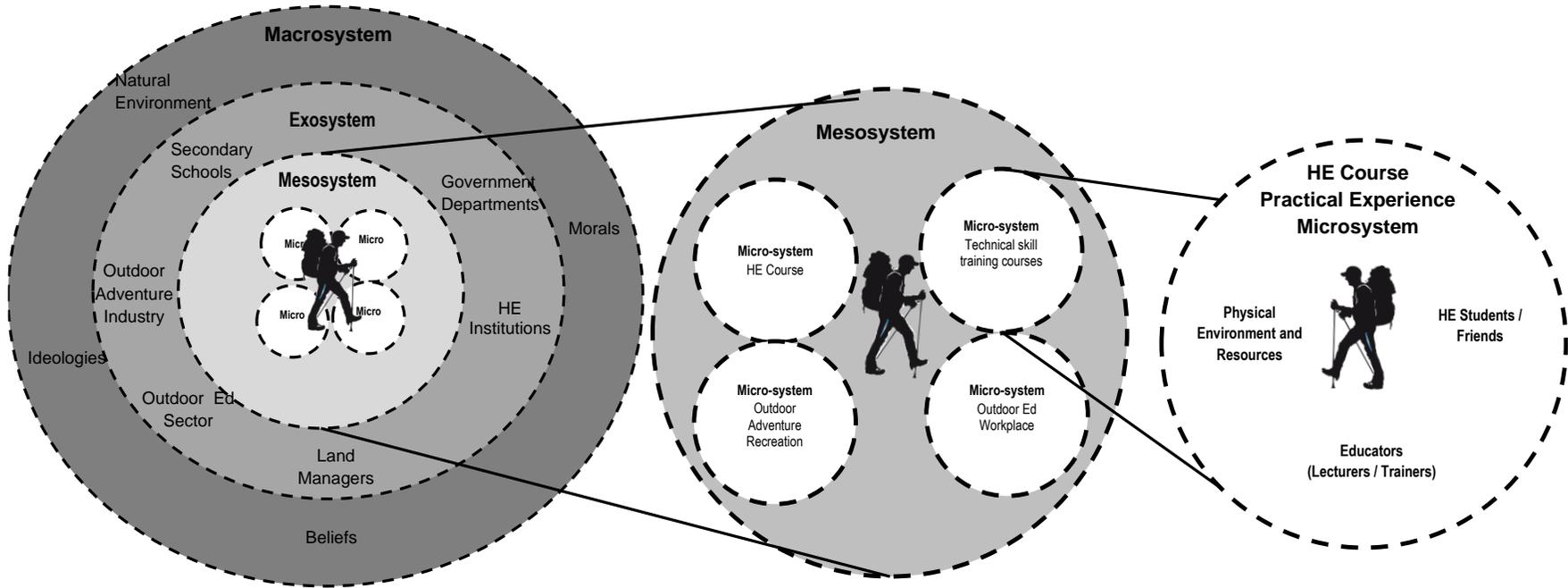
Discussion and answers to the three research questions that drive this study are presented in this chapter. The discussion consolidates the literature reviewed and findings from the study to explore the knowledge, skills, and practical experience required by students in HE who graduate to become outdoor educators. The three research questions are:

1. What knowledge and skills are required by Australian HE outdoor education graduates?
2. What is the nature of the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills?
3. How can these findings inform the HE sector in outdoor education courses and the outdoor education sector on knowledge, skills and practical experience?

Designed to investigate the research questions from the perspective of Australia's non-school-based outdoor education sector, this study includes government departments, outdoor education organisations and providers, and outdoor education practitioners. The theoretical framework, the bioecological theory of human development, was applied to understand the developmental ecology of HE outdoor education graduates relating to the knowledge and skills and associated practical experience required (Figure 14). Specifically, the four levels of the theoretical framework (micro-, meso-, exo- and macrosystems) detailed in Chapter 3 (Literature Review: Theoretical Framework) are used in this discussion to understand further the relationship between the knowledge and skills required of HE outdoor education graduates and practical experience.

Figure 14

The Developmental Ecology of HE Outdoor Education Graduates.



Three sections based on addressing each research question form the structure of this chapter. First, the knowledge and skills required of HE outdoor education graduates are discussed. Societal requirements in the exosystem and macrosystem that influence the knowledge and skills required by HE graduates are presented (Figure 14). Three domains (societal function domains) have been identified that collate the societal requirements of HE outdoor education graduates. The domains are the rudimentary that focus on the student physical and emotional safety, the foundation that provides education quality, and the specialisation that delivers education outcomes. The basis upon which the domains are categorised into the three societal function domains is considered in the discussion section 'Societal Functions of HE Outdoor Education Graduates'.

Identifying the societal functions and the three domains enabled the development of a Knowledge and Skills Framework (Figure 16) in which 13 elements of knowledge and skill are identified as necessary for graduates. The Knowledge and Skills Framework presents the knowledge and skills required while illustrating their relationships to the societal function.

The second section comprises the relationship between practical experience and HE outdoor education graduates' knowledge and skills. Understanding the microsystem and mesosystem of HE outdoor education graduates provides insight into how practical experience contributes to the development of knowledge and skills. For the first time, four practical experience microsystems for HE outdoor education graduates have been identified that contribute to the development of the knowledge and skills required to become an outdoor educator. These four microsystems include practical experience from HE courses, technical training courses, outdoor education workplaces, volunteering and paid employment, and personal outdoor adventure recreation experiences (Figure 17).

In the final section, current research findings are translated into recommendations for the HE and non-school-based outdoor education sectors.

Recommendations are made for HE course, and program design and guidelines are offered to the non-school-based outdoor education sector concerning the knowledge, skills and practical experience required by HE outdoor education graduates before beginning the role of an outdoor educator.

The primary focus of this thesis is to examine the knowledge, skills, and practical experiences required of HE outdoor education graduates. During the interviews conducted for this study, it became evident that distinguishing personal traits from teachable knowledge and skills posed challenges. Interviewees described trait characteristics in terms of cognitive processes and observable behaviours. Traits such as empathy, resilience, or adaptability are examples that were difficult for participants to define and measure accurately. It became evident that attempting to provide clear and objective definitions and assessment criteria for personal traits within the context of HE outdoor education graduates would have posed significant challenges. The theme personal traits has not been referred to in the discussion section. The focus of this study is to prioritise tangible and measurable elements focused on intrapersonal and interpersonal knowledge and skills that can be effectively taught and developed within HE programs.

What Knowledge and Skills are Required by Australian Higher Education Outdoor Education Graduates?

To address the first research question, two focus areas are required. The first discusses the three societal function domains of the knowledge and skills required by HE outdoor education graduates: the rudimentary domain, foundations domain, and specialisation domain. The second presents a Knowledge and Skills Framework developed from the 13 elements of knowledge and skill required by HE outdoor education graduates. The 13 elements emerged through the literature review and research findings and have been refined in this discussion. Each of these elements align with the three societal function domains.

Societal Functions of HE Outdoor Education Graduates

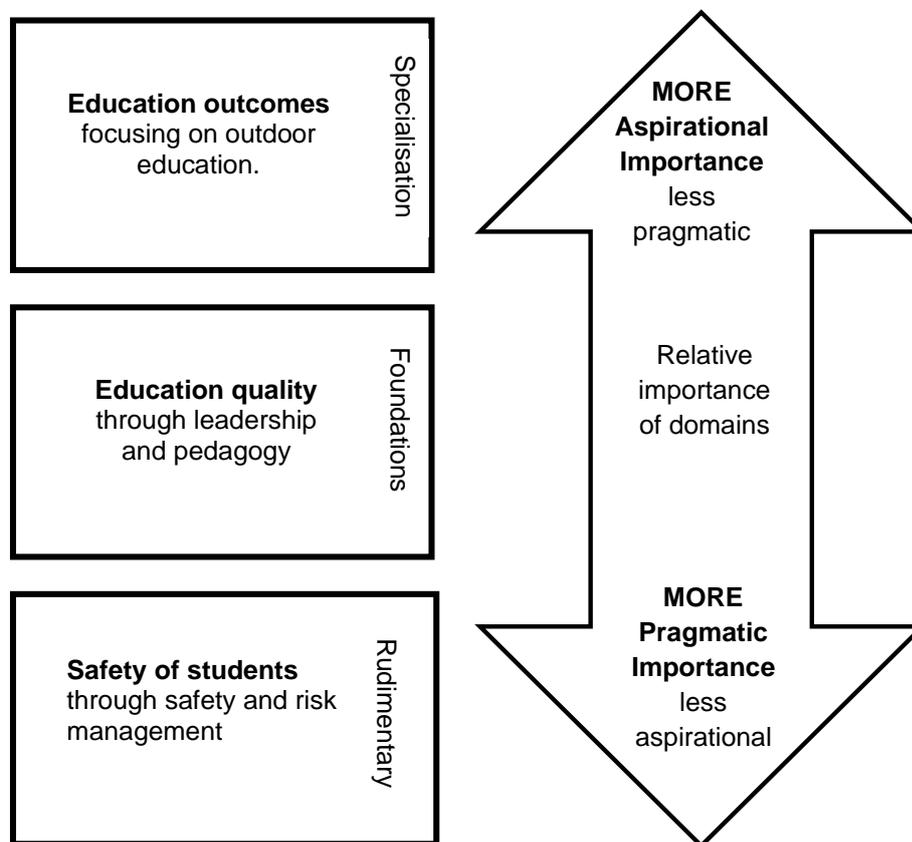
The primary role of education or 'primary societal function' has been described as "the education and training of the citizens of society" (Sundnes, 2014, pp. 41-42). Teachers and other professional educators are key actors who deliver learning experiences to students. From an outdoor education perspective, outdoor education's societal function is to provide educational experiences that support and expand upon those provided by these actors in the classroom. Outdoor education provides unique opportunities that benefit students physically, socially, psychologically, and emotionally (Andre et al., 2017; Coates & Pimlott-Wilson, 2019; Mutz & Müller, 2016; Sharma-Brymer & Bland, 2016). However, there are inherent risks associated with taking students into remote and natural settings, and students need to be kept safe. Providing a safe learning environment, while providing quality education experiences, is an overarching societal expectation of outdoor educators (Brookes, 2018; Haras, 2010). The following section explores how the societal function of HE outdoor education graduates informs the knowledge and skills they require.

To keep students safe while providing quality outdoor education, three societal function domains were identified through the current study (Figure 15): the rudimentary domain (student safety), the foundations domain (education quality), and the specialisation domain (education outcomes). These domains were found to have a relative importance to each other based on two core outcomes: the pragmatic (student safety) and the aspirational (education outcomes). The pragmatic refers to the practicalities of meeting primary human needs, such as food, shelter, and safety. The aspirational refers to the desire for a student to achieve a high level of educational outcomes, which is shared by parents (Bernard et al., 2019), students (Serneels & Dercon, 2021), teachers (Van den Broeck et al., 2020), and outdoor education practitioners (Van den Broeck et al., 2020).

Society values the three domains differently (Figure 15), a finding reinforcing the importance of understanding societal requirements and relationship between the three domains. Student safety and the rudimentary domain were found to be the most important to society. A high preference existed for outdoor educator knowledge regarding safety and risk as evidenced by results presented in Table 9, Table 16 and Table 30. The rudimentary domain acts as a base for the more aspirational education domains to be scaffolded. This scaffold is seen when comparing students' physical safety and development of their intrapersonal skills. For example, an outdoor education activity such as abseiling off a cliff-face, that focuses on students' managing the physical fear of loss, will provide opportunities for personal growth (Fang et al., 2021). Concerning society's function, this personal growth can only be achieved if physical risk is controlled. In this case, and as found through this study, safety is a more important societal function of outdoor education programs than personal development (Table 9, Table 16, Table 30). However, safety alone does not deliver on the potential of outdoor education; it enables it to happen. The remainder of this section will discuss the domains and societal function, from the most important pragmatically for safety, the rudimentary domain, to those of lesser pragmatic importance but more important for educational outcomes, the foundation and specialisation domains.

Figure 15

Societal Function Domains of Higher Education Outdoor Education Graduates



Student safety (focused on a student's physical, psychological, and emotional wellbeing while on outdoor education programs) was reinforced as the rudimentary domain of societal function for HE outdoor education graduates and of pragmatic importance to society. HE outdoor education graduates are responsible for ensuring student safety while delivering education outcomes (Kosseff, 2016; B. Martin et al., 2017). In the case of the current study, the wellbeing of school students engaged in adventurous outdoor experiences is a non-negotiable societal function of HE outdoor education graduates. In addition, the study revealed the exosystem of HE outdoor education graduates, which guides their knowledge and skills requirements, is dominated by standards and guidelines designed to ensure the safety of students

(Department of Education and Training, n.d.-c; Outdoor Council of Australia, n.d.-a; The Department of Land Water and Planning, n.d.). These findings are important with respect to the rudimentary domain because they indicate a minimum expectation for HE outdoor education graduates to possess knowledge and skills in safety when providing any outdoor experience to school students. Regarding practice, this study identified that the HE outdoor education graduate needs to have knowledge and skill in first aid, adventure activity-specific rescue, and the capacity to guide and instruct adventurous activities in remote locations.

Tension exists between safety and risk and the societal function expectation of learning through adventurous outdoor education experiences. Ensuring the physical, psychological, social, and emotional safety of young people engaged in adventure activities is of high importance to society. Risk, however, is an inherent component of outdoor adventure activities (Nichols, 2000), which is central to the outdoor education experience. Risk carries the simultaneous potential for loss and gain (Haras, 2010) and “without risk there is no potential for learning or growth” (Haras, 2010, p. 26). Consequently, without risk, learning outcomes can be diminished and the learning opportunity reduced. The outdoor education practitioners interviewed in this study described the necessity of providing safe outdoor education programs to deliver authentic outdoor education outcomes. This finding is important because it highlights that, while ensuring student safety is necessary in all outdoor education programs, achieving educational outcomes was identified as the primary purpose of providing outdoor education programs. For this reason, to meet societal function requirements, HE outdoor education graduates must possess the knowledge and skills to ensure student safety and be aware of risk’s role in outdoor education pedagogy and achieving learning outcomes.

Outdoor education providers rely on their staff to provide school students with safe outdoor experiences to meet society’s expectations and avoid adverse financial, legal, and brand outcomes. Outdoor education providers are also influenced by societal

function requirements that relate to the importance of student safety, risk, and education outcomes (Brookes, 2018). The safety guidelines and standards documents reviewed during this study were directed towards outdoor education providers or the schools that engage them. (Department of Education and Training, n.d.-c; Outdoor Education Australia, n.d.-a). Findings from the interviews and documents revealed the focus on risk management is increasingly on mitigating business loss. The higher importance that providers place on safety knowledge and skills, compared to outdoor education knowledge and skills, is likely due to the need for outdoor education providers to comply with standards and guidelines that respond to an increasingly risk averse society (Harper, 2017). As an outcome outdoor education providers are increasingly focused on the pragmatics of students' safety and organisational risk mitigation rather than taking risks. This may be at the expense of outdoor education learning outcomes. It is therefore not surprising that this study identified outdoor education providers believed that safety, risk, and outdoor education leadership were vital HE outdoor education graduate knowledge and skills, and that pedagogical knowledge and outdoor education learning outcomes were less important.

Education quality, focused on outdoor education, is recognised through the study as the foundations domain. The foundations domain is the transition point between the pragmatically focused rudimentary domain and the more aspirational specialisation domain. Education is one of the basic needs for human development (Sivakumar & Sarvalingam, 2010) and education quality has been connected to the knowledge and skills of educators (Goe, 2007). There are significant positive correlations between student achievement, education quality, and educator quality (Caena, 2011). Educator quality is connected to the depth of knowledge and skills the educator has attained, including pedagogy, reflective practice, enquiry approaches, and transformative teaching (Brooks, 2021). The knowledge and skills required of HE outdoor education graduates that relate to education quality, as identified in this study, are influenced by government departments and authorities (Department of Education

and Training, n.d.-c), professional registration bodies (Victorian Institute of Teaching, n.d.), and peak outdoor education associations (Outdoor Education Australia, n.d.-c). Addressing the societal function requirement of education quality requires HE outdoor education graduates to possess knowledge and skills in outdoor education pedagogy, teaching practices, outdoor leadership for education, professional/personal skills, and ethics.

The specialisation domain was recognised through this study as the education outcomes of outdoor education, and a domain of high aspirational importance. The specialisation domain is aspirational, as educational outcomes are the ultimate objective of society for a student's schooling, including the outdoor education programs they attend. Societal requirements for HE outdoor education graduate knowledge and skills in this domain fall into three distinct outdoor education outcome groups: prosocial development, nature awareness, and technical skill development. Since the end of the second world war, prosocial outcomes aligned with character building, leadership development, social education, and resilience have been identified as necessary for young people and society and capable of being provided through outdoor education (Nicol, 2002; Polley, 2021a). In the new millennium, teachers and principals in Australia (Lugg & Martin, 2001; Polley & Pickett, 2003) and New Zealand (Zink & Boyes, 2006) have identified personal and social skills as the most important outdoor education learning outcomes. To expand on this identification, findings from this study reveal that societal function expectations place most importance on outdoor education's prosocial outcomes, particularly participant personal development, health and wellbeing, and community and group development.

Contemporary perspectives on personal development, health, wellbeing, and community, linked to "a shared belief in how to achieve a well lived life" (Robertson et al., 2015, p. xi), are increasingly becoming a focus of outdoor education research and practice (Robertson et al., 2015). Similarly, this study has identified an expectation from society that outdoor educators will deliver health and wellbeing learning outcomes to

students. This is an important finding for HE outdoor education graduates because it identifies a continuing need for knowledge and skills relating to achieving prosocial outdoor education outcomes, including emerging requirements in the area such as health and wellbeing.

Societal function requirements for HE outdoor education graduates regarding nature awareness and environmental education outcomes were identified through the current study. Nature awareness includes aspirational outcomes associated with contemporary outdoor education programs and relies specifically on knowledge and skills in human/nature relationship, environmental science, and place-based knowledge (Grimwood et al., 2018; Prince & Cory-Wright, 2022; Zoncita, 2021). Knowledge and skills in nature awareness and its associated outcomes were identified in this study as an increasingly important component of delivering authentic outdoor education experiences, second only to prosocial development outcomes. Outdoor education practitioners interviewed identified the nurturing of human/nature relationships with students for human wellness and environmental sustainability as important. This finding implies that HE outdoor education graduates need to manage a complex learning environment by using specific knowledge and skills to provide adventurous outdoor activity learning outcomes that develop nature awareness and deliver prosocial benefits.

Technical skill development learning outcomes for school students were found to serve four purposes: safety; access to natural places; student engagement; and the development of adventure sports and bushcraft skills. Outdoor living, activity, and journey skills were identified as learning outcomes required to ensure safe participation in adventure activities in remote locations (Asfeldt et al., 2021; Holland et al., 2018). First, students need to have knowledge, skill, and performance capacity to live in the outdoors and participate in adventurous activities. Second, to access a remote natural place requires a set of technical knowledge and skills such as lightweight backpacking, food preparation and physical preparation. Third, outdoor adventure activities are

commonly used as a vehicle to deliver further learning outcomes, which, in practice, could mean engaging a group of students in an extended canoeing journey to explore a unique section of forest and have a temporary community experience. In this case the students need technical skills to participate in the canoe activity and the activity acts as a conduit for the development of nature awareness and the delivery of prosocial outcomes. Fourth, technical skill development allows participation in adventure activities as sport, for both recreation and health benefits, and engagement with bushcraft skills for creative and cultural expression. The extent to which adventure sport and bushcraft outcomes are provided is dependent on an outdoor education programs purpose and the knowledge and skills of the outdoor educator (Purc-Stephenson et al., 2019). These findings show that HE outdoor education graduates require a detailed understanding of the technical skills their students need to participate safely in outdoor education programs. Furthermore, these findings highlight the need for outdoor educators to be skilled outdoor guides and instructors with the capacity to teach students technical skills, including bushcraft. If instructors can do this teaching successfully, the outdoor activity becomes a method to deliver a range of outdoor education learning outcomes identified in this study, as well as an activity-based learning outcome (Mann et al., 2022).

There is a need to understand the societal function outcomes and associated domains before the knowledge and skills required of HE outdoor education graduates is understood. The importance of the societal function domains, rudimentary, foundations, and specialisation has been identified in this section. The next section presents a Knowledge and Skills Framework required of HE outdoor education graduates, which has been developed using these understandings of the societal functions and the three domains.

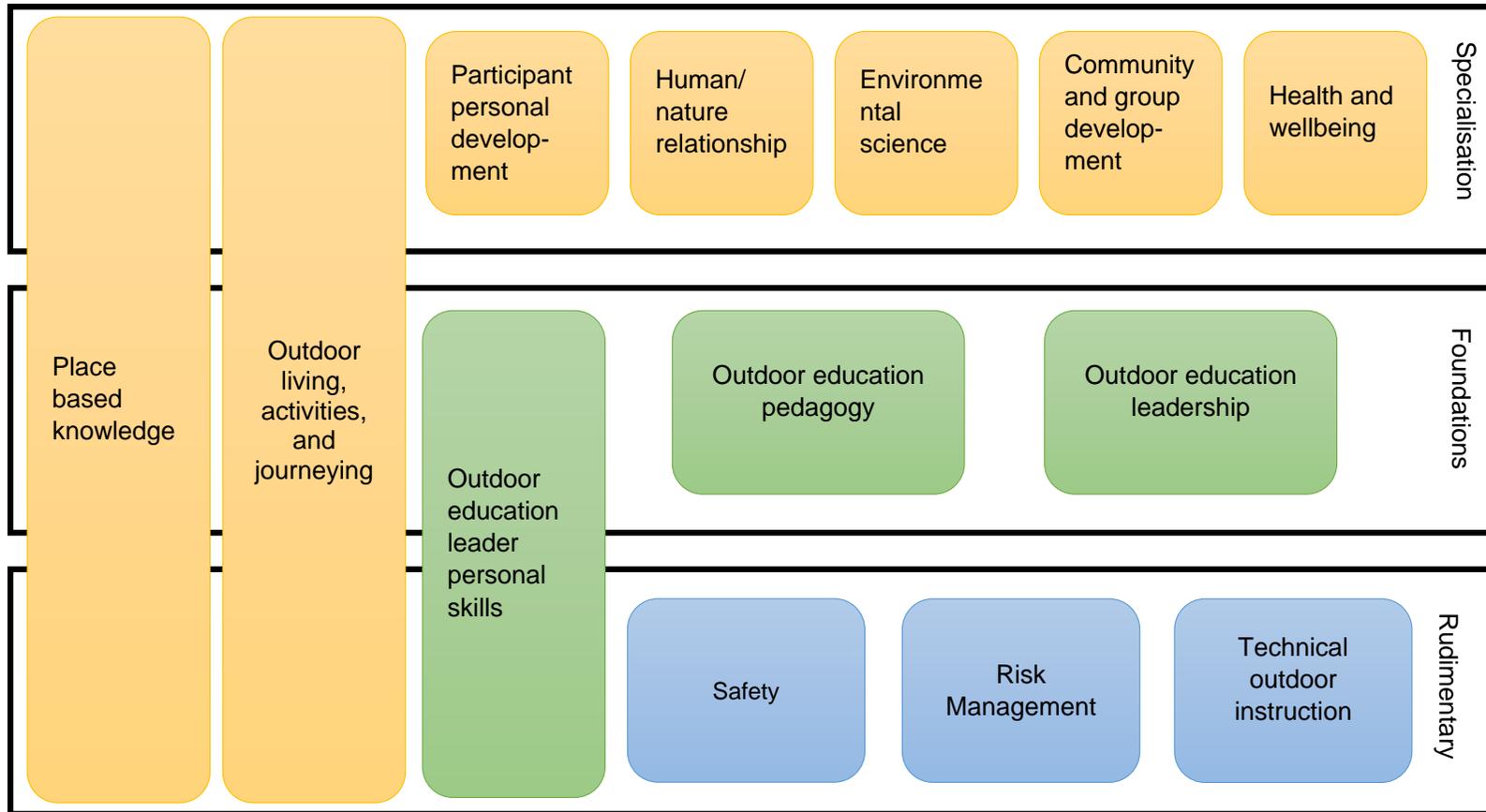
A Knowledge and Skills Framework for HE Outdoor Education Graduates

Thirteen knowledge and skills elements were identified through the literature review (Table 1, Table 2, Table 3) and as a result of this study. These elements enabled the development of a Knowledge and Skills Framework for HE outdoor education graduates (Figure 16). In the framework these elements address societal requirements associated with the three societal function domains: rudimentary, foundation, and specialisation. Each element aligns to a societal function domain, with three elements (place-based knowledge, outdoor living, activities and journeying, and outdoor educator's personal skills) spanning multiple domains because of the varied requirements relating to outdoor education knowledge and skill. For example, place-based knowledge requires a HE outdoor education graduate to apply safety and risk management knowledge and skills (rudimentary domain), based on the chosen pedagogical approach to an outdoor education program (foundations domain), to achieve student learning outcomes (specialisation domain).

The framework responds to the need for HE outdoor education graduates to understand interactions that occur between elements within and across domains. For example, within the rudimentary domain, managing an adventure activity requires knowledge and risk management skills that interact with knowledge and skills of technical outdoor instruction. With regard to cross-domain interactions, managing students to achieve education outcomes in the outdoors requires knowledge and skills in participant personal development (specialisation domain), outdoor education leadership (foundations domain), and safety (rudimentary domain). These findings regarding interactions are important for the knowledge and skills required of HE outdoor education graduates because they indicate that no singular knowledge and skill element or domain fulfils societal requirements for outdoor education programs.

Figure 16

Knowledge and Skills Framework.



Six rudimentary domain elements identify the knowledge and skills required of HE outdoor education graduates to ensure the safety (psychological, physical and social) of students participating in programs (Baker & O'Brien, 2020; Brookes, 2018; Priest & Gass, 2018). These six elements comprise safety: risk management, technical outdoor instruction, outdoor educator personal skill, outdoor living, activities, and journeying (OLAJ), and place-based knowledge. A detailed description of each element is provided in Appendix AA. The classification of these elements in the rudimentary domain is based on the importance for the safety of students identified in the societal function requirements in the current study. These knowledge and skill elements form the baseline required by HE outdoor education graduates to conduct outdoor education programs.

Five foundations domain elements identify the knowledge and skills required by HE outdoor education graduates to manage education quality, particularly the core education capabilities that affect education quality (Fauth et al., 2019; Hakim, 2015). The foundations elements comprise outdoor education pedagogy, outdoor education leadership; outdoor educator personal skills, OLAJ, and place-based knowledge (Appendix AA). The classification of these elements in the foundations domain is founded on a balance of the pragmatic requirement to ensure education quality with the aspirational goal to provide unique outdoor education learning outcomes. The foundations domain elements comprise the second level of knowledge and skills required by HE outdoor education graduates to conduct outdoor education programs. The foundations domain elements include the fundamentals of outdoor education as a professional tertiary education, a focus of study, informing a world view, based on an active research agenda (Dyment & Potter, 2014). Boyes (2004, p. 82) despite being made nearly two decades ago, supports that an outdoor educator requires “desirable personal characteristics, a solid experiential base, considerable subject content knowledge, knowledge of the context domains, and pedagogy” to fulfil their role, supports the findings from this study on foundation domain elements.

Seven specialisation domain elements identify the knowledge and skills HE outdoor education graduates require to provide specific education outcomes through outdoor education programs. P. Martin (2008a) identified that specialist education studies (outcomes) most distinguish outdoor educators' the knowledge and skills requirements from other educators. The specialisation domain elements comprise participant personal development, health and wellbeing, community and group development, human/nature relationship, environmental science, OLAJ, and place-based knowledge. A detailed description of each element is provided in Appendices AA. The classification of these elements in the specialisation domain is based on the aspirational importance attributed to providing education outcomes through outdoor adventure activities. The specialisation domain elements are the third level of knowledge and skills required by HE outdoor education graduates to conduct outdoor education programs. Previous lists and statements of knowledge and skills required of outdoor leaders and educators (Kosseff, 2016; B. Martin et al., 2017; Priest & Gass, 2018; Thomas et al., 2019) have inadequately articulated in terms of detail the capacity required to deliver education outcomes for students. This lack of clarity is reinforced in the general statement by Thomas et al. (2019, p. 176), that "outdoor educators use pedagogies that align their program's purpose and practice". The threshold statements for HE outdoor education graduates noted by Thomas et al. (2019) and discussed in Chapter 2. Literature Review lack specific and identifiable knowledge and skills related to the education outcomes for students on outdoor education programs. In contrast, the proposed specialisation domain provides a clear and concise framework and a list of student outdoor education outcomes which HE outdoor education graduates are required to have learned and developed the skills to teach. The benefit of this clarity is that HE outdoor education graduates can be better prepared to meet societal expectations of the education outcomes of outdoor education programs.

The Knowledge and Skills Framework elements are consistent with the literature in the field, which identifies the diverse, complex, and contextual knowledge

and skills required by outdoor educators (Brookes, 2018; Holmes, 2015; Kosseff, 2016). The complexity of outdoor education teaching requires HE outdoor education graduates to attain knowledge in outdoor education epistemology, pedagogy, technical knowledge, and vocational skills (Holmes, 2015). Building upon the work of Holmes (2015), this study has identified that HE graduates require knowledge and skills from across the three domains and 13 elements to competently deliver programs that provide educational outcomes.

One benefit of the Knowledge and Skills Framework is that it untangles the complexity of societal function requirements and organises the various knowledge and skills into well-defined societal domains and knowledge and skill elements. In these ways, the framework provides novice outdoor educators, including undergraduates in HE courses, with guidance on the knowledge and skills required to develop during their degree program to assist with employability upon graduation. Significant knowledge and skill growth has occurred for novice outdoor educators. Nevertheless, many novices are “confronted with gaps in their understanding of leadership, imperfections in interpersonal judgement and self-knowledge, and limitations in their ability to cope with the stresses of the role” (Enoksen & Lynch, 2018, p. 177). The Knowledge and Skills Framework can guide these novice outdoor educators to focus their learning and development on the 13 elements required by society. As a development principle, the knowledge and skills in the rudimentary domain should be attained first, followed by those in the foundation domain, and finally those in the specialisation domain. Developmental staging ensures HE outdoor education graduates can first meet societal requirements relating to safety. This scaffolding ensures the pragmatic requirements of work preparedness are attained prior to more highly developed knowledge and skills in education quality and learning outcomes. In doing so the framework can be a resource for the designers and deliverers of the HE outdoor education curriculum, to be applied as a scaffold that informs the development of an undergraduate novice to a person who is prepared for graduation that meets the needs of societal requirements.

To answer the first research question, two focus areas were used to enable an in-depth response to 'what knowledge and skills are required by Australian HE outdoor education graduates?' First, three societal function domains, with key outcomes, were used to identify knowledge and skills requirements (Figure 15). Second, a Knowledge and Skills Framework was developed to guide HE outdoor education students, graduates, and educators (Figure 16). This framework identifies 13 knowledge and skill elements connected to the societal function of HE outdoor education graduates. The connection between knowledge and skills and societal requirements is important to ensure societal needs are addressed. The following section discusses the relationship between HE outdoor education practical experience and the required knowledge and skills required.

What is the Nature of the Relationship Between Practical Experience and Australian Higher Education Outdoor Education Graduate Knowledge and Skills?

Outdoor educators require a high level of experience to execute their roles, namely safety officer, primary carer, educator, and manager (Brookes, 2018; B. Martin et al., 2017). In support of this requirement, this study finds practical experience is important for undergraduates in HE outdoor education during their time at university. For HE outdoor education graduates, practical experience can be defined as experiences that develop outdoor education knowledge and skills. These experiences include supervised work placement (internships or practicum), field work, skills courses, embedded technical training courses, and embedded practical qualifications (Barnes, 2004; Humberstone & Mannerings, 2004; Mann, 2003; Poff et al., 2001).

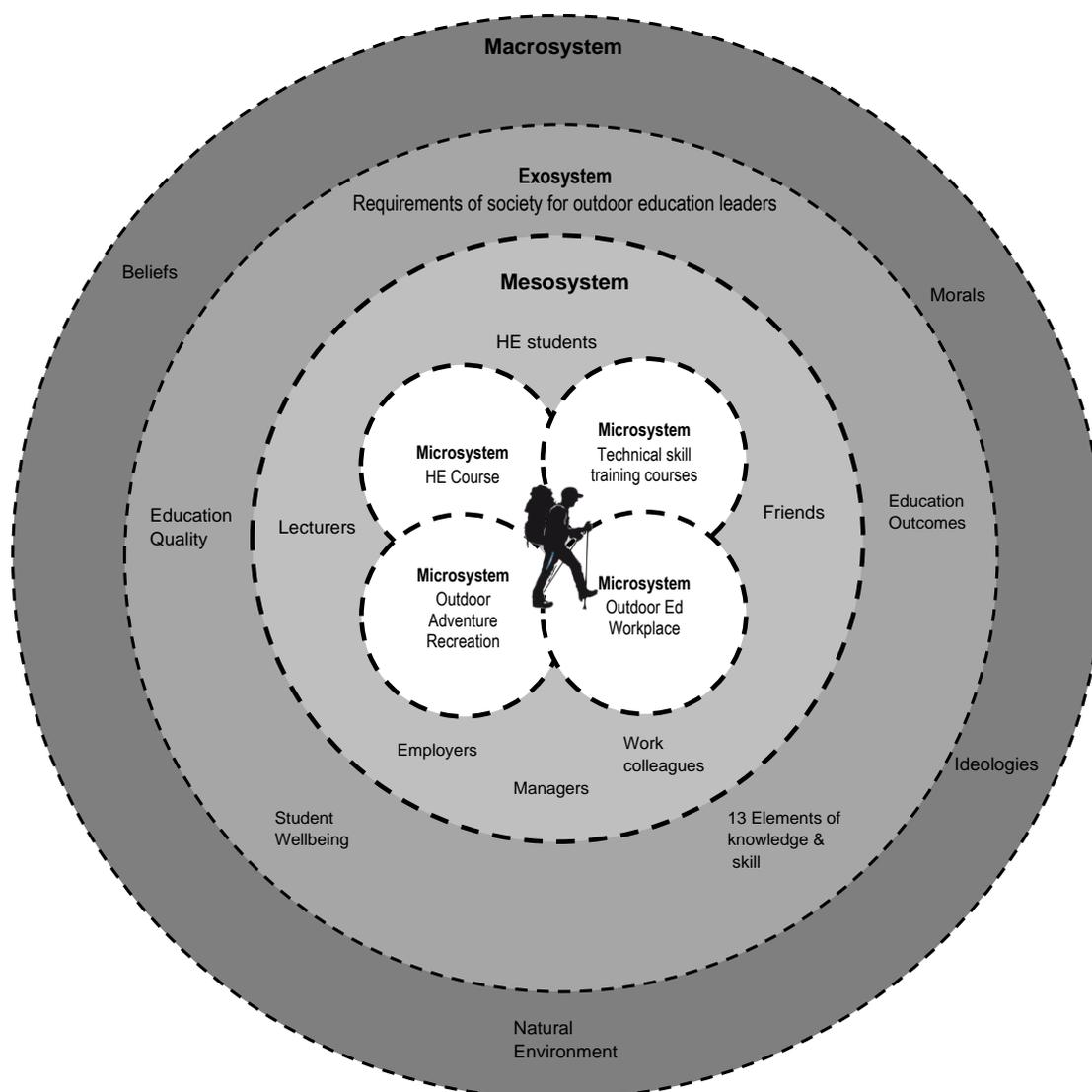
Four key practical experiences were identified in this study: HE outdoor education course experiences; outdoor education workplaces; technical training courses; and personal outdoor adventure recreation, that would assist in developing HE outdoor education graduate knowledge and skills. Identifying these elements highlighted the relationship between practical experience and HE outdoor education

graduate knowledge and skills. These experiences are recognised within the microsystem of HE outdoor education practical experience (Figure 17).

The bioecological theory of human development explains how people are influenced in knowledge and skills development through interaction with their surrounding social and physical environment (Bronfenbrenner, 2005). The application of the four levels (micro-, meso-, exo-, and macrosystems, detailed in Chapter 3. Literature Review: Theoretical Framework) enabled an ecological focus on practical experiences which suggests that practical experiences could build the competence of the HE outdoor education graduates.

Practical experiences enable HE outdoor education undergraduates to interact with environments similar to their workplace after graduation. The environments include simulated and real workplace microsystems, including HE outdoor education course experiences, outdoor education workplaces, and technical training courses (Figure 17). Based on bioecological theory, these interactions develop and build HE outdoor education graduates' understandings of learning in the outdoors and the role of the outdoor educator (Bronfenbrenner & Morris, 2006). They may also create and promote the development of personal knowledge and skills, which reflects the social and physical environment of the developing person (Bronfenbrenner & Morris, 2006). For HE outdoor education graduates, the practical experience environments and people they interact with impact the opportunity for knowledge and skills development. These impacts are mediated by a person's daily interactions with their intimate partners, family, friends, workplace, university, government, media, social ideologies, morals, and customs (Carol, 2008).

Figure 17

Higher Education Outdoor Education Practical Experience

Using the four ecological levels of the bioecological theory of human development (Bronfenbrenner, 2005), this study made four key findings about the nature of the relationship between practical experience and HE outdoor education graduates' knowledge and skills. First, in microsystems, a person interacts with proximal processes directly affecting their development (Bronfenbrenner & Morris, 2006; L. Smith, 2011). Microsystems, in the case of the current study, influence HE outdoor education graduates' exposure to various levels of practical experience which

may affect the development of their outdoor education knowledge and skill. There are four microsystems: HE outdoor education course experiences including lecturer-led field work, practicum, and student led field work, outdoor education workplaces, through paid employment, including internships, technical skills training courses such as first aid, rescue and adventure activity instructor programs, and personal outdoor adventure recreation.

Second, the mesosystem is identifiable by the people and social structures that interact with the microsystems, including lecturers, HE student peers, friends, employers, work colleagues, and managers. This finding supports research on HE student culture (Renn & Arnold, 2003), which finds the mesosystem is generated by people interacting with each other and places. The people and social structures in the mesosystem were found to create relationships between the practical experience microsystems and the varying knowledge and skills required of HE outdoor education graduates. Relationships in the mesosystem between practical experiences microsystems linked by people (for example in the current study between lecturer and employer) were identified as vital influences on HE outdoor education graduate knowledge and skills. For example, through course design, curriculum content and assessment lecturers can facilitate connections between the HE outdoor education course and outdoor education workplaces, technical skills training courses and personal outdoor adventure recreation.

Third, the exosystem, in which societal functions and requirements are most observable, influences people's reactions in the HE and outdoor education sectors (mesosystem) regarding how practical experience (microsystems) occurs (L. Smith, 2011). For example, in this study, a HE lecturer interprets the AAAS (Outdoor Council of Australia, n.d.-a), applies those standards to the curriculum outcomes in a HE course, and, as a result, influences the knowledge gained and skills developed by a student during coursework practical experience sessions. The connection between the knowledge and skills requirements in the exosystem influences people in the

mesosystem, who affect the four practical experiences evident in the microsystems; HE outdoor education course experiences, outdoor education workplaces, technical skills training courses, and personal outdoor adventure recreation (Figure 19).

Fourth, within the macrosystem, this study found that the natural environment and beliefs of society (societal function requirements), influenced the physical and social environments in which practical experience is conducted. The natural environment was identified as vital for creating the real-life context required for practical, experience-based learning. Society's beliefs about the role of HE outdoor education graduates for student safety, education quality, and education outcomes were identified as influencing both the exosystem and microsystems. The physical and social practical experience microsystem was found to be affected by the macrosystem through the natural environment as well as the societal function requirements determining the knowledge and skills required.

The influence of societal function requirements on practical experience and the nature of its relationship to the knowledge and skills through the ecosystem can be traced. People develop through direct interaction with proximal processes in the microsystem, and in turn, these proximal processes are affected by people in the mesosystem and by societal function requirements observable in the exosystem (Bronfenbrenner & Morris, 2006). For example, in this study, when an outdoor education lecturer (mesosystem) designs a unit of study on bushwalking, they will draw on industry standards and government requirements (exosystem) to establish the knowledge and skills outcomes for a practical experience component (microsystem). The lecturer will then use their personal interactions with other lecturers, technical skills course trainers, and outdoor education employers (mesosystem), to assist them in designing the unit. When delivering the practical experience (microsystem) component of the unit, the lecturer will select a teaching and learning approach that uses the unique experience of travelling through the bush on foot, in a self-contained group (proximal processes), to deliver the curriculum they have designed and in doing so

meet the learning objectives. It is through this practical experience that the HE outdoor education graduate is influenced by societal function requirements (exosystem). Societal function requirements are highly likely to influence safety, such as group sizes and the qualifications of staff, curriculum content, and the teaching and learning approach adopted by the lecturer. The bioecological processes influencing HE curriculum development and thus the experiences of the HE outdoor education graduate identified in the current study, provide new knowledge specific to the ecological relationship between practical experience and HE outdoor education graduate knowledge and skills development.

Agreement and conflict between microsystems occurs, and is a factor that influences human development (Härkönen, 2007). Microsystems agree when primarily they move towards the same outcomes; they conflict when they diverge towards different outcomes. HE outdoor education graduates will experience conflict between microsystems as identified in the study, based on the learning objective and educational approach indicative of the practical experience (microsystems) in which they are engaged. The educational approach in this study is determined by the AQF level and corresponding tertiary sector (VE or HE). VE is mostly provided through technical colleges focusing on vocational outcomes, while HE is provided through universities focusing on professional outcomes. A conflict arises when, for example, a HE student engages in a HE course practical experience focused on developing depth and breadth of knowledge in place-based pedagogy while on a river journey (Wattchow & Brown, 2011), then attends a Rafting Grade 3 Rivers technical training course (Department of Education Skills and Employment, n.d.-b) focused on technical competency development (VE). In this case, the HE outdoor education graduate must interpret diverging approaches to teaching and learning in the outdoors, including differences in perceptions of the importance of outdoor education learning outcomes and technical activity skill development (VE) in comparison to place-oriented learning (HE). Although in conflict, the diverging approaches of HE and VE was identified by

Holmes (2015) as an arbitrary one that can be managed through the HE course. In this context, this study makes an important finding: that forming an agreement between microsystems requires facilitation by an organising entity (for example, a university) to draw together experiences and learning from the practical experience microsystems into a single, coherent learning experience for HE outdoor education graduates. HE courses that manage student practical experience interaction with the four microsystems can facilitate agreement and educate students on how to negotiate practical experience microsystem conflict, which builds their knowledge and skills development.

It is important to understand that agreement and conflict between microsystems can affect human development (Härkönen, 2007). While the four practical experience microsystems agreed (moved towards a similar outcome) on the exosystem requirement for student safety in the current study, they conflicted on education quality and outdoor education outcomes (moved towards differing outcomes). The commonality of outdoor adventure activities and the associated social priority for participant safety underpins the agreement. However, there is a conflict with respect to education quality and education outcome requirements necessary for HE course and outdoor education workplaces microsystems which are not required for the outdoor adventure recreation and technical training courses microsystems. Important implications for the development of HE outdoor education graduates are present, exposing the impact of a societal function bias towards safety, particularly skills relating to physical safety, rather than education quality and outdoor education outcomes. Even though safety is a societal function of high importance, if HE courses and the outdoor education industry do not account for this bias, HE outdoor education graduates may not develop an appropriate balance of knowledge and skills to fulfil their overall societal function requirement to deliver not only student safety but also, quality education and education outcomes.

Industry, government and practitioners (exosystem) were found through this study to prefer HE outdoor education graduates to have engaged with all four practical experience microsystems to build knowledge and skills (Department of Education and Training, n.d.-c; Outdoor Council of Australia, n.d.-a, n.d.-f). This finding shows the importance of diverse practical experience for HE outdoor education graduates to develop the knowledge and skills to meet societal function requirements. Interaction across multiple practical experience microsystems presented three key advantages that align with existing literature (Galloway, 2007; Schreck et al., 2020; Scott et al., 2012; Thomas, 2015). First, HE outdoor education graduates are more likely to have developed a range of knowledge and skills from across the rudimentary, foundation and specialisation domains if they have engaged with all four practical experience microsystems. A variety of HE practical experiences provides opportunities for the development of knowledge and skills outcomes ranging from those more focused on vocational technical skills to those focused on the broader body of knowledge of outdoor education (Holmes, 2015).

Second, the knowledge and skills society requires of HE outdoor education graduates span a broad range which may include learning focused on studies lower than an AQF bachelor's degree level (Department of Education Skills and Employment, n.d.-a). The practical experience microsystems identified in the current study provided opportunities for learning outcomes to be attained in real contexts, such as workplaces, technical training courses required for workplace compliance, and simulated institutional field environments, which bypass the VE/HE AQF constraints. For example, a HE outdoor education student completing a wilderness first aid course (technical training course microsystem), through vocationally oriented studies at AQF Level 3, meets workplace requirements for employment. In contrast, a lecturer-led field experience (HE course microsystem) in outdoor education lesson delivery, conducted on a river journey at AQF Levels 6/7, provides the professional knowledge to meet social requirements relating to education quality and outdoor education outcomes.

Third, HE students require exposure to practical experience microsystems replicating the real world (Boyes & O'Hare, 2003). Personal outdoor adventure recreation activities and the outdoor education workplace are real-world microsystems identified in the study, which build situational awareness, and decision-making and problem-solving abilities. These three findings highlight the importance of the relationship between practical experience microsystem diversity and the development of the knowledge and skills required of HE outdoor education graduates.

The relationship between practical experience and HE outdoor education graduate knowledge and skills has been addressed in this section. The bioecological theory of human development was applied to explore this relationship using an interconnected social ecology that shapes HE outdoor education knowledge and skills development during practical experience. The study identified four practical experience microsystems affecting the development of HE graduates' knowledge and skills through proximal processes. These microsystems include HE outdoor education course experiences, outdoor education workplaces, technical training courses, and personal outdoor adventure recreation (Figure 17). Societal beliefs in the macrosystem regarding student safety, education quality, and education outcomes were identified along with their effects on the exosystem, mesosystem, and microsystem. Finally, the need for undergraduate HE outdoor education students to be exposed to a range of practical experiences to develop the required knowledge and skills was discussed.

How Can These Findings Inform the Higher Education Sector in Outdoor Education Courses and the Outdoor Education Sector on Knowledge, Skills, and Practical Experience?

The final research question is addressed in the following section and presented in two subsections. The first focuses on how this study's findings can inform the HE sector in outdoor education courses. To assist the application of the Knowledge and Skills Framework (Figure 16), the societal function (Figure 15) is discussed for HE

outdoor education courses. In addition, agreement and conflict within the Australian tertiary sector (VE/HE) about outdoor education knowledge and skills is discussed and recommendations are made to benefit the HE courses and HE outdoor education graduates. Finally, the benefits of practical experience for HE outdoor education graduates are discussed, and recommendations made for HE courses.

The second subsection focuses on how this study's findings can inform the outdoor education sector on the knowledge, skills, and practical experience required of HE outdoor education graduates. First, the subsection addresses how the Knowledge and Skills Framework resolves previous uncertainty around the knowledge, skills and practical experience required of HE outdoor education graduates in Australia. The discussion expands to include the benefits of applying the Knowledge and Skills Framework to the recruitment and selection of HE outdoor education graduates. The subsection then explores findings relating to HE outdoor education graduate knowledge and skills regarding the safety and technical skills required to meet industry standards and makes recommendations for the sector. Finally, the section explores findings relating to the benefits of employing HE outdoor education graduates to deliver education outcomes for school students.

The workplace, driven by real-world demands and practical considerations, offers valuable insights into the specific requirements necessary for outdoor education graduates. These insights inform the development of practical skills and competencies required to excel in the field. Simultaneously, the university, with its educational expertise, plays a crucial role in shaping the academic foundations and pedagogical approaches essential for effective outdoor education. Through a combination of theoretical knowledge, research-based practices, and teaching methodologies, the university equips students with the necessary cognitive and analytical skills to navigate the challenges of outdoor education.

How Can These Findings Inform the Higher Education Sector in Outdoor Education Courses?

In Australia, the HE sector provides outdoor education AQF bachelor's degree courses, with the aim of preparing HE students to deliver outdoor education programs upon graduation. Societal requirements of HE outdoor education graduates are to ensure the safety of students, deliver education quality, and deliver educational outcomes are noted in the current study (Figure 15). To meet these requirements, a specific outdoor education Knowledge and Skills Framework (Figure 16) has been designed to provide guidance to the HE sector on the knowledge and skills required of graduates to conduct outdoor education programs. The framework builds on previous frameworks by B. Martin et al. (2017) and Priest and Gass (2018) which were relevant to outdoor leadership but lacked the outdoor education context required by the HE sector to inform decisions relating to the knowledge and skills of HE outdoor education graduates. The framework also builds on the findings of P. Martin (2008a), which focused on senior (Years 10–12) secondary school Australian curriculum but did not consider broader societal and outdoor education industry requirements. The development of an integrated Knowledge and Skills Framework, informed by the study, groups 13 required elements into domains based on the societal function requirements for HE outdoor education graduates. The framework also provides three respective levels of knowledge and skills importance, with HE graduates expected to progress their knowledge and skills development through the rudimentary, foundations and specialisation domains. HE course coordinators may choose to adopt the framework as a basis for course design. Course coordinators could use the domains as a scaffolded learning framework and the elements as content areas for knowledge and skill. Consequently, the HE sector can now draw on a clear framework to inform curriculum for HE outdoor education courses.

HE outdoor education courses do not currently have national standards on required curriculum, assessment, teaching mode, and hours of practical experience. The absence of national standards partially explains the variations in curriculum, assessment, teaching and practical experience between science (Victoria University, n.d.-a), recreation (The University of Notre Dame Australia, n.d.), sport (Federation University, n.d.-b), education (Charles Sturt University, n.d.), and multidisciplinary programs (University of South Australia, n.d.). As the managers responding to this study noted, the absence of national standards also leads to HE outdoor education graduates possessing significantly different knowledge, skills, and experience. The Knowledge and Skills Framework (Figure 16) developed in this study clarifies the knowledge and skills required of HE outdoor graduates based on societal requirements. In the absence of national standards, Australian HE outdoor education courses would benefit from the adoption of this framework as a guide.

The Knowledge and Skills Framework (Figure 16) may have a negative impact on outdoor education courses. University courses are regularly reviewed based on their educational outcomes and financial viability. In Australia social change, economic reform, [and] educational reform has impacted outdoor education provision in schools and the number of tertiary outdoor education places provided in universities (Polley, 2021a). The Knowledge and Skills Framework (Figure 16) could be applied by universities to argue the lack of viability for a course. If a HE course cannot deliver the framework outcomes, or if to achieve them exceeds the university's budget, an argument may be developed to reduce a course's scope (hours of teaching provided) or even cut the course completely. HE course coordinators and HE administration need to be aware of this risk when applying the framework.

Tension exists between the delivery and assessment of knowledge and skills for HE outdoor education undergraduates and its place in the VE or HE levels of the AQF (Holmes, 2015). A confused and contested tertiary education system exists in Australia, particularly at AQF Levels 5–7, the point at which the VE and HE sectors

intersect (Fowler, 2017). This confusion is partially due to workplaces requiring professional knowledge and technical skills that span the AQF levels, and partially due to the differing educational systems between VE and HE (Jones et al., 2010). To alleviate this confusion, this study identified that HE outdoor education graduates need to attain knowledge and skills from across the AQF, ranging from level 3 to level 7. The core problem for HE outdoor education courses arises from the perceived misalignment between VE oriented technical skills development and a HE curriculum which broader knowledge approaches to learning (Holmes, 2015). This is an important finding for the HE sector; the AQF and education system are inhibiting factors affecting HE outdoor education courses' capacity to meet the societal function requirements of HE outdoor education graduates in technical skills development.

A societal bias towards the attainment of vocational skills through the VE sector and attainment of professional knowledge through the HE sector was identified through this study. Industry standards and guidelines in the exosystem were found to measure a HE outdoor education graduates' technical skill against the VE SIS training package. However, HE outdoor education courses often deliver curricula that develop technical skills, such as canoeing (VE AQF Levels 2–4), and outdoor education knowledge, such as pedagogy and riparian environment studies (HE AQF Level 7) (LaTrobe University, n.d.-b; Victoria University, n.d.-c). A link from the HE to VE curriculum needs to be constructed to ensure HE graduates comply with industry standards for employment. It is important to note that HE and VE operate in different ecologies, which has an impact on the amount of importance and resources a HE course may be able to apply to technical skill delivery. Taking into account this constraint, this study proposes that HE outdoor graduates (who have completed AQF Level 7) need to also gain qualifications equivalent to AQF Levels 3 and 4 in outdoor adventure activities before they are employed in the outdoor education sector (Department of Education and Training, n.d.-a; Department of Education Skills and Employment, n.d.-b; Outdoor Council of Australia, n.d.-a). In acknowledgement of this need, it is recommended that HE course

coordinators apply the VE National Training Package units of competence as a design tool for curriculum regarding safety, technical skills, outdoor guiding, and their related practical experience.

Outdoor education employers may choose to employ VE outdoor leadership graduates despite preferring to employ HE outdoor education graduates. This study found that this choice would be based upon the requirement for employees to possess nationally recognised qualifications, including Wilderness First Aid, Canoe Instructor, and Swiftwater Rescue. The qualification requirement for employment is connected to quasilegal requirements based on the AAAS that provide guidelines for outdoor adventure activities, provider activity insurance, and land manager access agreements for AQF qualification levels 1–6 (or equivalent) compliant staff. This study also identified that these employers expect HE outdoor education graduates to be competent in the provision of quality education and outdoor education outcomes. On the other hand, this study also found that these employers prefer safety and technical qualifications associated with student safety and compliance above quality education and outdoor education outcomes. Easily recognised safety-oriented technical training for VE graduates would override knowledge and skills in education attained by HE graduates. The consequence is that a 1-year trained VE Cert IV graduate could be appointed over a 3-year trained HE degree graduate. HE graduates can be impacted by this contradictory situation and find themselves less employable unless they attain additional qualifications at VE AQF Levels 4 and 5. Findings reveal that, concerning technical skills and professional knowledge, employers have a positive view of more integrated HE courses that provide dual program delivery models (VE Certificate IV plus HE degree concurrently) or embed the attainment of technical skill qualifications. This could be undertaken through co-delivery of a program or through recognition of prior learning (RPL) from the HE courses to the VE Certificate IV. Furthermore, while safety and technical qualifications play a crucial role in initial employability, this study suggests that the employability of HE graduates can be enhanced by recognising their

strengths in pedagogy and educational approaches. Employers who prioritise the educational aspects of outdoor education and value the broader skill set that HE graduates bring to the table may realise the long-term benefits of hiring HE graduates.

HE outdoor education courses deliver content through a range of delivery modes, including lectures, tutorials, and practical experiences. Practical experiences provide opportunities for HE students to develop cognitive, technical, and affective knowledge and skills through experiential learning (Mogk & Goodwin, 2012; Scott et al., 2012). Experiential learning focuses on the real world, its problems, opportunities and authenticity, which the educator facilitates to guide undergraduate learning and develop their new knowledge and skills (Wurdinger & Carlson, 2009). For this study, the real world comprises outdoor education programs. Practicum/work placement, supervised field work, and student led trips were identified as the preferred practical experience modes for developing HE outdoor education graduate knowledge and skills. In most cases, the knowledge and skill elements were divided between on-campus and practical experience delivery modes. This split between modes seems dependent upon the required combination of technical skill, theoretical knowledge, personal experience, and outdoor education practice. For example, human/nature relationships was equally preferred in the findings between lecture-based delivery and practical field work, indicating a balance between theoretical knowledge and experiential learning through practical experience. Technical activity skill development was a standout because it was heavily dominated in the findings by experiential modes of teaching and learning (practical experience supported by the technical training course mode). This study found that employers perceive that HE outdoor education student learning advances when they are involved in practical experiences blended with lecture-based modes. In response to these findings, it is recommended that HE courses apply an experience-based pedagogy (through practical experiences) across a range of modes appropriate for the individual knowledge and skills element being developed.

HE students engage in practical experiences across a range of contexts: course based, field based, workplace, and private (Wurdinger & Carlson, 2009). This study identified HE outdoor education courses play a crucial role in the coordination and facilitation of practical experience beyond the HE course. Academic staff, course coordinators, and lecturers strongly influence the HE students' practical experience ecology (microsystem and mesosystem). The strength of influence is greatest within the 'HE courses' practical experience microsystem, in which a range of course-based experiences are delivered and coordinated, including supervised and unsupervised field work and work experience. However, academic staff also have a significant impact through the mesosystem by engaging with the other three microsystems identified: technical skills training courses, outdoor adventure recreation, and outdoor education workplace (Figure 17). To maximise learning outcomes and address societal requirements relating to safety, this study indicates that HE outdoor education courses need to facilitate a range of practical experience opportunities both within courses and external to the HE course. It is recommended that course coordinators promote societal function requirements for HE outdoor education graduates to attain the external technical qualifications (first aid, adventure activity guide and instructor, and rescue) required to gain employment in the sector. At the same time, it is appreciated that these external qualifications require student time and funding, which may be difficult for students depending on their personal situation.

HE course-based work experience was identified through this study as important for developing knowledge and skills in outdoor education. However, in Australia, because of the absence of national standards, a HE graduate could complete a program without any workplace experience related to safety, education, and learning outcomes. This absence of standards is unlike a school-based classroom teacher, whose registration body requires them to achieve a minimum number of HE-managed work placement days prior to their entry into the teaching profession (NSW Education Standards Authority, n.d.). Mandatory work placement has been adopted by the

teaching profession to provide work-ready graduates and ensure a standard of education quality for society. In response to these results and insights, it is recommended that HE outdoor education courses adopt a mandatory requirement that graduates complete a minimum number of work placement days.

Findings from this study revealed in this section, can inform the HE sector regarding outdoor education programs. The study indicates that applying the Knowledge and Skills Framework would benefit the HE sector by providing a clear and concise set of knowledge and skills. Regarding practical experience, this study found that to maximise learning, the HE sector would be well placed to act as a hub that draws together the practical experience microsystems and integrates practical experience across the HE curriculum, including the adoption of minimum work experience.

How Can These Findings Inform the Outdoor Education Sector on Knowledge, Skills, and Practical Experience?

The non-school-based outdoor education sector in Australia has been uncertain about the knowledge, skills, and practical experience that HE outdoor education graduates should possess (Marsden et al., 2012; Munge, 2009; Polley & Thomas, 2017). While the Certificate IV qualification is commonly considered a benchmark in the outdoor industry, it originates from the VE sector rather than HE, producing uncertainty. Results gained from this study have been used to address this uncertainty by developing a Knowledge and Skills Framework applicable to HE graduates (Figure 16). This framework is the first of its kind in Australia and provides the outdoor education sector with certainty. This framework is structured according to the three domains based on societal function requirements (Figure 15) and identifies the 13 knowledge and skill elements required of HE outdoor education graduates (covering student safety, education quality, and education outcomes) before they are deemed ready for employment. Furthermore, this framework provides the HE sector with a definition of

the knowledge and skills that HE outdoor education graduates should develop during their practical experience.

Utilisation of the Knowledge and Skills Framework (Figure 16) has the potential to enhance the long-term viability of the outdoor education sector's workforce by fostering a deeper understanding of recruitment needs and facilitating professional development in outdoor education. Understanding the knowledge and skills required of HE outdoor education graduates is beneficial for managers who need to make recruitment decisions (Fulthorp & D'Eloia, 2015). Consequently, the Knowledge and Skills Framework may be a useful resource for managers with hiring responsibilities. As discussed in the previous section, HE outdoor education courses do not have agreed national standards for graduate knowledge skills and practical experience and, as a result, HE outdoor education graduates vary significantly in the focus, type and quality of their knowledge, skills, and practical experience. The Knowledge and Skills Framework will assist managers with hiring responsibilities to identify the knowledge and skills according to the societal function domains, elements, and practical experience required by HE outdoor education graduates for employment.

The framework could also be used as a resource for early-career staff development. For example, the framework could help managers identify the knowledge, skills, and practical experience gaps an employee needs to develop. The framework could also support the design of professional development plans. Employees could self-identify the domains and elements of knowledge, skills, and practical experience in which they have formal training, qualifications, and/or experience, then add evidence. Once complete, the employee would consult with their manager, identify gaps in their knowledge, skills and experience, and the outcomes of this consultation would form the employee's periodic professional development plan. As a result, outdoor education organisations can use this framework as a benchmark to assist in the recruitment, selection, and development of HE graduate employees.

Australia is committed to ensuring the safety of all young people (Office of the United Nations High Commissioner for Human Rights, n.d.). Student safety increasingly influences outdoor education program design and delivery (Polley & Thomas, 2017). Emphasising the significance of this point, this study found that student safety (physical, psychological, emotional, and social) is a non-negotiable societal requirement of all outdoor adventure activities. At the same time, education outcomes were identified as a societal requirement when measuring the success of an outdoor education program. It appears that safety is the measure of operational program success, and outcomes are the measure of educational program success. This finding is important for the outdoor education sector because it identifies the need for outdoor education providers to focus equally on two factors (student safety and education outcomes) to achieve the delivery of outdoor education experiences which meet societal requirements. This finding also indicates the need for outdoor education hiring managers to employ HE graduates with knowledge, skills and practical experience in safety, pedagogy, and education outcomes.

HE graduates who only attained knowledge and skill through their degree program were found through this study not to meet the outdoor education sectors' needs regarding safety and technical skill compliance. The sector requires these skills to be validated through, or mapped against, the VE based National Training Package (Department of Education Skills and Employment, n.d.-b). However, Thomas et al. (2019) argue that the lack of nationally recognised qualifications does not "imply that these (HE) graduates are not knowledgeable, capable or skilled facilitators of outdoor education" (p.170). In fact, this study found that Australian HE outdoor education courses regularly contain areas of study that prepare students to manage safety, manage risk, and use safety and risk related technical skills (Federation University, n.d.-a; LaTrobe University, n.d.-a; Victoria University, n.d.-b). This finding does not seem to be recognised in the outdoor education sector. Findings of this study suggest the outdoor education sector could adopt a nationally recognised guide of technical skill

requirements for HE outdoor education graduates or map technical skills in HE courses against the VE National Training Package. The Knowledge and Skills Framework (Figure 16) has been developed to align and comply with societal function requirements and standards, including the AAAS and National Training Package. The outdoor education sector could collaborate with HE institutions and advocate to government, industry and registering bodies to adopt the framework as a guide for all Australian HE outdoor education courses.

In terms of university program accreditation and funding, implementing a nationally recognised guide would require collaboration between educational institutions, industry stakeholders, and relevant accreditation bodies. It would involve thoroughly reviewing and aligning existing program curricula and assessment criteria with the identified technical skill requirements. This process would ensure university programs meet the necessary standards and prepare graduates accordingly. Adopting a national guide may increase the attractiveness of HE programs for prospective students. Similar to VE graduates and the national training package, a nationally recognised guide for HE courses may provide clarity and transparency regarding the skills and knowledge expected from graduates. A guide would promote a clear pathway for students interested in outdoor education and provide reassurance that their HE education aligns with the outdoor education sector's requirements. However, it is important to note that technical skills alone do not encompass the full breadth of competencies required for successful outdoor education practice. The significance of education and human development perspectives in HE programs, which contribute to a deeper understanding of outdoor education beyond technical instruction, has been acknowledged in the study.

Schools commonly complement classroom education with co-curricular outdoor education programs, focusing on social, personal, and environmental outcomes (Freeman, 2011; McDonald, 2018; Paisley et al., 2008; Richmond et al., 2018). Australian schools offer co-curricular outdoor education through year level residential

or bush camps and day excursions, through which students participate in a range of learning activities (Gray & Martin, 2012; Lugg & Martin, 2001; Polley & Pickett, 2003). This study found that schools engage external outdoor education providers to deliver educational outcomes to students, and that, to achieve these educational outcomes, outdoor education organisations require staff who can deliver the seven identified learning outcomes from the specialisation domain (Figure 16). Also identified through the study, HE outdoor education graduates are likely to possess the required knowledge, skills and practical experience in outdoor education pedagogy and outdoor education outcomes. This finding is important because despite the societal function requirement for student safety favouring the employment of VE graduates, the employment of HE outdoor education graduates is recommended by outdoor education practitioners.

The Knowledge and Skills Framework (Figure 16) can be used to expand the application of outdoor education offered to schools. The top four outdoor education learning outcomes for school students identified in the Knowledge and Skills Framework were: personal development, health and wellbeing, community and group development, and human/nature relationships. These outcomes have the potential to foster in students self-reflection, acceptance, teamwork, and compassion, and support educators introducing a social justice pedagogy rather than one based in adventure, risk and individualism (Warner et al., 2020). It is important to note that this study constitutes the first time health and wellbeing have been recognised highly as a learning outcome for outdoor education in Australia. These outcomes suggest an argument exists for the outdoor education sector to move away from the traditional, activity heavy, risk dominated programs based on 1940s character-building ideologies (Freeman, 2011) and towards programs focused on student wellbeing, community development and human/nature relationships. A contemporary version of outdoor education has evolved from the findings of this study, the sector requires learning outcomes associated with wellbeing, community, and ekistics relationships.

Recognising the time since data collection (2013) and now, discourses may have shifted in OE; however, these findings become a benchmark to guide future learning outcomes associated with these three components. As a result, HE outdoor education graduates who show evidence of the knowledge, skills and practical experiences aligned to the Knowledge and Skills Framework will be well placed to provide outdoor education learning experiences that respond to and meet to societal requirements. For the Knowledge and Skills Framework to serve as a comprehensive national guide, it necessitates regular review and updates to keep pace with evolving educational outcomes.

This section discussed how this study's findings can inform the outdoor education sector about the knowledge, skills, and practical experience required of HE outdoor education graduates. These findings suggest that applying the Knowledge and Skills Framework could benefit the outdoor education sector by providing a clear and concise set of required knowledge, skills, and related experiences. The framework can then be applied to the recruitment and selection of HE outdoor education graduates and to the assessment of their developmental requirements once employed. Issues were also discussed relating to the acknowledgement of HE outdoor education graduate safety knowledge and skills, and a recommendation was made that the outdoor education and HE sector work collaboratively regarding HE outdoor education course content, and the recognition of HE outdoor education graduates against industry standards.

Chapter Review

A discussion of this study's findings, incorporating consideration of the literature reviewed in Chapters 2 and 3, has been presented in this chapter. To build knowledge, the discussion drew upon concepts from bioecological theory (Bronfenbrenner, 2005) and its four ecological layers; microsystem, mesosystem, exosystem and macrosystem (Figure 14).

First, this chapter addressed the research question, what knowledge and skills are required by Australian HE outdoor education graduates? Three societal function domains were identified: rudimentary, focusing on student physical and emotional safety; foundation, focusing on delivering education quality; and specialisation, focusing on delivering education outcomes (Figure 15).

A Knowledge and Skills Framework for HE outdoor education graduates was then presented (Figure 16), based upon the three societal function domains, including 13 knowledge and skill elements developed in this study and sensitive to societal requirements.

Second, this chapter addressed the question, what is the nature of the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills? The discussion focused on the bioecological relationship (Figure 17). This relationship was defined as an interconnected social ecology that shape HE outdoor education knowledge and skills development through practical experience. Each layer of the bioecological system (micro-, meso-, exo-, macrosystem) of HE graduates and the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills was discussed. In particular, four practical experience microsystems were identified, each of which affects the development of a HE outdoor education graduate's knowledge and skills have been identified through this study: HE outdoor education course field-based experiences; outdoor education workplaces; technical training courses; and personal outdoor adventure recreation.

Third, this chapter addressed the question 'How can these findings inform the HE sector in outdoor education programs and the outdoor education sector on knowledge, skill, and practical experience?' In regard to the HE sector, a clear understanding of the knowledge, skills and practical experience microsystems specific to HE graduates informs HE programs on the need for a national standard and on course design. The Knowledge and Skills Framework connects to the societal function

requirements for HE outdoor education graduates and can be applied to assist HE courses and outdoor education graduates to address societal requirements and needs.

For the outdoor education sector, this study's findings can inform the sector via the Knowledge and Skills Framework and outdoor education learning outcomes. Specifically, the framework could act as a guide in the recruitment of HE outdoor education graduates and underpin the preparation of employees' early career development plans. This section of the discussion also addressed issues relating to HE outdoor education graduate safety knowledge and skills and recommended the collaborative development of an industry standard by the outdoor education and HE sectors.

The following chapter of this thesis, the conclusion, provides a summary of this study's key findings that address the three research questions, including its practical and theoretical contributions. The conclusion also addresses limitations of this study and makes recommendations for future research.

Chapter 8. Conclusion

To advance awareness of the knowledge, skills and practical experience required for HE outdoor education graduates, a summation of key findings is presented in this chapter. Theoretical and practical contributions to knowledge, limitations, and recommendations for future research are also presented.

The reliance of secondary schools on external organisations for the delivery of outdoor education curriculum to students has witnessed a steady rise (Backman, 2018; Beames & Brown, 2014; Rodrigues & Payne, 2017; Zhao, 2020). While these external organisations play a crucial role, their employees, often outdoor activity leaders, may lack the necessary knowledge, skills, and practical experience to ensure successful educational outcomes for secondary school students (Marsden et al., 2012; Williams et al., 2011). It is worth noting that a significant number of outdoor educators employed in Australia are graduates of HE outdoor education courses (Polley, 2021a).

Contradictions, disparities, and omissions were identified in the literature reviewed on knowledge, abilities, and practical experience required to offer effective outdoor educational programs. The requirements for HE outdoor education graduates, for example, exhibit inconsistencies, demanding knowledge and abilities that surpass the AQF levels encompassing both HE and VE. Discrepancies emerged regarding the quantity, type, and consistency of practical experience mandated in HE outdoor education programs. Additionally, there were significant omissions concerning the absence of instructions and literature emphasising the significance of real-world experience and the acquisition of information and skills necessary for graduates of HE outdoor education.

To move beyond these contradictions, disparities, and omissions, to assist the HE and outdoor education sectors with clarity, the purpose of this study was to investigate the knowledge, skills, and practical experience required by HE outdoor education graduates to become effective outdoor educators for secondary school

students in Australia. To address this purpose three research questions were developed to guide the study:

1. What knowledge and skills are required by Australian HE outdoor education graduates?
2. What is the nature of the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills?
3. How can these findings inform the HE sector in outdoor education courses and the outdoor education sector on knowledge, skills and practical experience?

To address these research questions, an exploratory sequential mixed methods research design was employed. Two forms of qualitative data and one form of quantitative data were collected. First, to explore the knowledge, skills, and practical experience required by HE outdoor education graduates, a qualitative analysis was conducted on documents sourced from community, industry, and government sources ($n = 218$). Second, to explore the outdoor education practitioners' perceptions of the knowledge, skills and practical experience required by HE outdoor education graduates for employment in the outdoor education sector, semi-structured interviews were conducted to gain common responses with outdoor education sector members ($n = 6$). Finally, to quantify and further explore the qualitative phases' findings, an online questionnaire was designed and distributed to outdoor education practitioners ($n = 134$).

The results of this study informed the answers to the three research questions offered in Chapter 7 Discussion. Upon addressing each research question, key findings evolved that provided insights into the knowledge, skills, and practical experience required by HE outdoor education graduates in Australia. These findings led to theoretical and practical contributions to knowledge. The link between each research question, key findings, and contribution to knowledge is summarised in Table 76.

Table 75*Research Questions, Findings and Contribution to Knowledge.*

Question	Findings	Contribution
What knowledge and skills are required by Australian HE outdoor education graduates?	<p>Bioecology influences emanate from government, industry, and community, and affect HE outdoor education graduate knowledge and skills requirements.</p> <p>Three societal function domains of knowledge and skills identified: rudimentary, foundations and specialisation.</p> <p>13 elements of knowledge and skill aligned to three societal function domains identified.</p>	<p>Bioecological understanding of the social and physical influences in the ecosystem affecting the knowledge and skills required (Theoretical).</p> <p>Societal function domains of HE outdoor education graduates identified as a requirement for student safety, education quality, and education outcomes (Theoretical).</p> <p>Knowledge and Skills Framework for HE outdoor education graduates developed (Figure 16). 13 elements of knowledge and skill required by HE outdoor education graduates (see Appendix AA) (Theoretical/practical)</p>
What is the nature of the relationship between practical experience and Australian HE outdoor education graduate knowledge and skills?	<p>Four practical experience microsystems identified: HE outdoor education course experiences, outdoor education workplaces, technical training courses, personal outdoor adventure recreation.</p> <p>Proximal processes occurring in the practical experience microsystems may affect the development of outdoor education graduates' knowledge and skills.</p>	<p>HE outdoor education practical experience ecology identified (Theoretical).</p> <p>Proximal processes identified that may affect HE outdoor education undergraduate development through practical experience (Theoretical).</p>
How can these findings inform the HE sector in outdoor education courses and the outdoor education sector on knowledge, skills and practical experience?	<p>HE sector Knowledge and Skills Framework can guide program design.</p> <p>Knowledge and Skills Framework can inform about societal function requirements.</p>	<p>Knowledge and Skills Framework provides a sequential base for course design. 13 elements of knowledge and skill can be included in outdoor education programs (Practical).</p> <p>Three domains provide an understanding of how to prioritise student learning to build knowledge and skills while managing society function requirements (Practical).</p>

Question	Findings	Contribution
	<p>Tension exists between student safety, education quality and education outcomes. Student safety identified as most important component of programs, while education quality and outcomes are the measure of program success.</p> <p>Practical experience microsystems and proximal processes can guide practical experience program inclusions and design.</p> <p>Outdoor education sector Knowledge and Skills Framework can inform sector requirements for HE graduates.</p> <p>Practical experience microsystem proximal processes can guide the type, duration, frequency, and amount of practical experience required of HE outdoor education graduates.</p>	<p>Rudimentary elements prioritise HE outdoor education graduates meeting societal function requirements relating to student safety. While foundations and specialisation elements prioritise graduates meeting societal function requirements relating to program education success (Practical).</p> <p>Engagement with practical experience is required for HE outdoor education undergraduates to develop the required knowledge and skills (Practical). Embed practical experience microsystems within outdoor education program design (Practical). Maximise learning during practical experience through tailoring proximal processes (people, type, duration, frequency, and amount) according to element outcome objective(s) (Practical).</p> <p>Knowledge and Skills Framework can guide HE outdoor education graduate suitability to fulfil a role of an outdoor educator (Practical).</p> <p>Practical experience microsystems measured through proximal processes can guide HE outdoor education graduate suitability to fulfil a role of an outdoor educator (Practical). Knowledge and Skills Framework and practical experience microsystems can be used as professional development tools for HE outdoor education graduates employed as outdoor educators (Practical).</p>

Contribution to Theoretical Knowledge

Five contributions to theoretical knowledge have been made by this study: extending the application of bioecological theory, developing the societal function domains of HE outdoor education graduates, creating a Knowledge and Skills Framework, identifying the practical experience ecology, and defining proximal processes affecting HE outdoor education graduate development during practical experience.

Bioecological theory was applied to build a richer understanding of the complex social and physical ecology (Bronfenbrenner & Morris, 2006; Härkönen, 2007) affecting the development of HE outdoor education graduates. Bioecological theory was previously used to understand and inform government, community, and industry regarding policy, strategy, and practice in a range of contexts (Hodgson & Spours, 2009; Margolis, 2012; Weaver-Hightower, 2008) including adult learning (Carol, 2008; L. Smith, 2011). In the context of HE outdoor education learning, bioecological theory was applied to understand “the processes that inspire human development” (L. Smith, 2011, p. 1), and to theorise and establish that proximal processes, human relationships, and the social ecology influence learning outcomes. This study builds knowledge regarding bioecological theory and adult learning (Carol, 2008; L. Smith, 2011) within the context of HE courses (Lewthwaite & Wiebe, 2012; L. Smith, 2011), specifically HE outdoor education courses. As a result, the bioecology of HE outdoor education graduates has been identified for the first time (Figure 14). Government, the outdoor industry, and community were identified in the exosystem, with policies, standards, and curriculum affecting knowledge and skills requirements. This extending of theoretical knowledge offers a rich understanding of the social and physical influences in the ecosystem and how these affect the knowledge and skills required of HE outdoor education graduates. Furthermore, this study has proposed a theoretical understanding of the relationship between HE outdoor education practical experience

microsystems, proximal processes influencing development, and the knowledge and skills required of HE outdoor education graduates.

The importance of understanding the societal function domains of HE outdoor education graduates in determining the knowledge and skills required by society was established through this study. Findings indicate that societal function requirements are determined in the exosystem by government, community, and industry, and that the exosystem is, in turn influenced by broad macrosystem based ideologies, morals, beliefs and physical processes. For the first time, three societal function domains required of HE outdoor education graduates have been identified, including rudimentary (student safety), foundations (education quality), and specialisation (education outcomes) (Figure 15). The recognition of societal function domains provides a framework upon which the knowledge and skills required of HE outdoor education graduates can be organised while remaining sensitive to the societal function requirements.

The Knowledge and Skills Framework contributes to the field's understanding of the competencies required of HE outdoor education graduates to provide outdoor education programs. The importance of understanding the knowledge and skills required has been reinforced through research on outdoor leaders (Buell, 1981; Kosseff, 2016; B. Martin et al., 2017; Priest, 1986a; Swiderski, 1981; Wagstaff et al., 2006) and outdoor educators (P. Martin, 2005), 2008b; Polley & Thomas, 2017; Thomas et al., 2019). However, a literature review on this matter found that the knowledge and skills required of HE graduates remained unclear. This study builds upon existing literature and theoretical knowledge through the introduction of a Knowledge and Skills Framework for HE outdoor education graduates aligned to societal requirements (Figure 16). The framework adds to theoretical knowledge by identifying 13 knowledge and skill elements required of HE outdoor education graduates and using the societal function domains to align the elements to society's requirements.

The complex practical experience ecology of HE outdoor education graduates has been illuminated through this study. Findings have shown that HE outdoor education graduate knowledge and skills development occurs across four interrelated practical experience microsystems (Figure 14). HE students' practical experience has previously been found to occur through their HE course via supervised work placements and course-based field work. (Barnes, 2004; Garvey & Gass, 1999; Humberstone & Mannerings, 2004; Mann, 2003; P. Martin, 2008b; Poff et al., 2001; Sugerman, 1999). While this study confirms these findings, it also recognises that practical experience occurs across a broader context than the HE course microsystem. This finding adds to the theoretical understanding of practical experience delivery by identifying three other interrelated non-HE course-based practical experience microsystems that have not previously been recognised; outdoor education workplaces; technical training courses; and personal outdoor adventure recreation. The theoretical importance of this finding lies in the fuller understanding it offers of the interrelated practical experience microsystems required for HE outdoor education graduates to attain the required knowledge and skills.

This study identifies microsystem proximal processes as factors affecting a HE outdoor education graduate's development during practical experience. Previous studies have tended to focus on what knowledge and skills may be developed as a result of practical experience (Galloway, 2007; Kosseff, 2016; P. Martin, 1998; Priest & Gass, 2018). In contrast, this study contributes to the field's understanding of the proximal processes, including the type, duration, frequency, and amount of practical experience (see thesis section Duration, Frequency, and Amount of Practical Experience.), and the people influencing those proximal processes, including lecturers, trainers, employers, peers, and friends. An understanding of the proximal processes affecting the development of HE outdoor education graduates is an important foundation for the design of practical experiences that maximise learning outcomes.

Contribution to Practical Knowledge

Nine contributions to practical knowledge (Table 76) are made in this study. The contributions that build knowledge relating to the HE sector are presented first, followed by contributions related to the outdoor education sector.

Significant implications for the HE sector in outdoor education courses and the outdoor education sector, particularly regarding knowledge, skills, and practical experience are presented. The workplace insights, driven by real-world demands and practical considerations, have provided valuable guidance on the specific requirements for outdoor education graduates to succeed in their professional roles. These insights have informed the development of practical skills and competencies crucial for navigating the challenges inherent in the field. Simultaneously, leveraging its educational expertise, the university plays a pivotal role in shaping the academic foundations and pedagogical approaches necessary for effective outdoor education. Integrating theoretical knowledge, research-based practices, and innovative teaching methodologies, the university equips students with the cognitive and analytical skills needed to excel in outdoor education.

As demonstrated in this study, the collaborative efforts between the workplace and the university are essential in driving the advancements and progress of the HE sector in outdoor education. By embracing and implementing the insights derived from this study, both sectors can better align their practices with societal expectations, ultimately enhancing the quality and effectiveness of outdoor education programs for the benefit of students and the broader community.

Higher Education Sector

Six practical contributions are made that relate to the HE sector (Table 76). These include: the Knowledge and Skills Framework, which provides a model for program design; a definition of the rudimentary, foundations, and specialisation domains that guide the prioritisation of student safety and learning for outdoor

education program success; a definition of the practical experience required in a HE outdoor education course to develop the required knowledge and skills; the establishment of the need to embed practical experience microsystems within course design; and establishment of the need to maximise learning during practical experience to tailor proximal processes.

The Knowledge and Skills Framework provides a sequential model for HE program design which contributes to practical knowledge (Figure 16). Previous literature regarding the knowledge and skills required of outdoor leaders (Kosseff, 2016; B. Martin et al., 2017; Priest & Gass, 2018; Wagstaff et al., 2006) and outdoor educators (P. Martin, 2005, 2008b; Polley & Thomas, 2017; Thomas et al., 2019) has provided lists or broad statements rather than a framework to assist HE program design. The framework identifies 13 sequential and structured elements of knowledge and skill to assist HE program coordinators to build HE outdoor education student learning. Furthermore, the Knowledge and Skills Framework provides an understanding of prioritising HE student learning outcomes to manage societal function requirements relating to HE outdoor education graduates' competence.

The societal function of an outdoor education program was identified as important for the HE sector to understand as it informs the knowledge and skills required of HE outdoor education graduates. The rudimentary, foundations, and specialisation societal function domains (Figure 15) provide a basis for HE outdoor education courses to prioritise HE student learning. Based on societal function requirements, the rudimentary domain (student safety) was identified as the most important function of a HE outdoor education graduate, followed by the foundations domain (education quality), then the specialisation domain (education outcomes). The practical contribution linked to this finding is that the rudimentary domain elements (Figure 16), which prepare HE graduates to provide safe outdoor education programs, need to be given high priority in HE course design. These three domains and their potential to inform HE course design are a new finding in this field of study. Importantly,

elements from all three domains were identified as required to provide outdoor education programs.

Regarding the three domains, tension existed between the rudimentary domain and the other two domains (foundations and specialisation) because of competing demands by society. Education quality (foundations domain), and education outcomes (specialisation domain) were found to be the measures of program success for society. As a result, priority needs to be given not only to the rudimentary elements in HE program design, the foundations and specialisation elements also require relative priority to meet societal function requirements relating to a program's education success. The challenge for the HE sector is to meet these competing demands for HE outdoor education graduate knowledge and skill outcomes, across all three domains, and within a 3-year degree program. Practical experience offers one way to meet this challenge by integrating several learning outcomes into each experience.

Previous understandings of the benefits of practical experience have focused on outdoor leaders (Galloway, 2007; Kosseff, 2016; P. Martin, 1998; Priest & Gass, 2018), and have provided little insight into how practical experience can be applied to the development of HE outdoor education graduates. This study extends this understanding by identifying the knowledge and skill benefits that practical experiences provide for HE students engaged in outdoor education programs. Findings include the amount, duration, and frequency of practical experience required for HE graduates to develop competence in the outdoor education elements and adventure activities (see thesis section Duration, Frequency, and Amount of Practical Experience.). These findings are important for the HE sector to inform the design of practical experiences during outdoor education courses.

The need for the HE sector to embed practical experience microsystems within outdoor education program design has been established through this study. Previous studies have focused on practical experience in the fields of recreation (Schreck et al., 2020), environmental science (Scott et al., 2012), and outdoor education (Munge et al.,

2018). These studies identified the HE course microsystem, but they did not identify practical experience in the broader ecology of the HE student. This study contributes new knowledge by identifying three additional practical experience microsystems beyond the HE course; outdoor education workplaces; technical training courses; and personal outdoor adventure recreation. Including the HE course, the four practical experience microsystems (Figure 17) can inform the HE sector on the types of experiences required during a HE program to develop the elements of knowledge and skill. This study found the benefit in the development of knowledge and skills for courses, to take a central role to engage HE students with the three non-course-based practical experience microsystems.

Practical experience proximal processes were identified by this study as components of a HE outdoor education course that can be adjusted to affect the development of student knowledge and skill. The field of education psychology (Skinner et al., 2022) has recently acknowledged the need for research to focus on proximal processes, and specifically identify factors that affect student development in the microsystem. To address this need as it relates to the context of practical experience for HE outdoor education students, this study has identified that proximal processes (people, type, duration, frequency, and amount) need to be established and managed to maximise learning during practical experiences. Proximal processes can be intentionally planned in practical experience design, which could maximise knowledge and skills development for HE outdoor education graduates.

Outdoor Education Sector

Three practical contributions to outdoor education sector knowledge were made through this study: the Knowledge and Skills Framework, which can guide the outdoor education sector on HE graduate suitability for employment; the practical experience microsystems proximal processes, which can guide HE graduate suitability to fulfil a role of an outdoor educator; and the combined Knowledge and Skills Framework and

practical experience microsystems, which can form a professional development tool for HE outdoor education graduates employed as outdoor educators.

The Knowledge and Skills Framework can guide the outdoor education sector on an HE outdoor education graduates' suitability for employment. This study consistently found that an understanding of the knowledge and skills required of HE outdoor education graduates is important to the assessment of the readiness of a graduate for employment in the outdoor education sector. Readiness for employment includes the capability to provide safe outdoor education programs while providing contemporary educational outcomes to students. Practically the Knowledge and Skills Framework may act as a guide for managers to verify knowledge and skills during recruitment and selection.

Practical experience microsystem proximal processes can guide the outdoor education sector regarding HE graduate suitability to fulfil a role of an outdoor educator. Identifying proximal processes has been recognised as important for understanding the influences affecting human development (Skinner et al., 2022). This study contributes to knowledge by identifying and quantifying the proximal process variables related to practical experience (Figure 17) comprising; type, duration, frequency, and amount for HE outdoor education graduates. This understanding of proximal processes is an important finding for the outdoor education sector because it provides quantifiable variables that can be used (for example, by managers in the sector) to evaluate the practical experience of HE graduates during recruitment and selection.

The Knowledge and Skills Framework and practical experience microsystems may also be applied as a professional development tool for HE graduates employed as outdoor educators. The tool may assist employers in supporting the development of educators in critical areas of knowledge and skill related to outdoor education (Baran & Correia, 2014). The current study provides both a Knowledge and Skills Framework

development tool for employees (Figure 16) and the practical experience microsystems (Figure 14) through which these competencies can be attained.

Limitations of the Study and Recommendations for Future Research

One potential limitation of this study is the presence of researcher bias. Researcher bias refers to the tendency of a researcher to be influenced by their personal beliefs, values, and experiences, leading to potential distortions in data collection, analysis, and interpretation (Christensen et al., 2011). The researcher has a background of working in outdoor education since the age of 18, having served as an academic for 12 years in a university before becoming the executive director of a large outdoor education organisation. The researcher's privilege and extensive experience and professional background may have influenced perspectives and interpretations. Researcher bias can impact various stages of the research process, including the formation of research questions, selection of research methods, interpretation of data, and reporting of findings (Creswell & Creswell, 2017).

To mitigate the impact of researcher bias, measures were taken in this study. First, the researcher engaged in ongoing self-reflection and reflexivity throughout the research process, critically examining their own biases and potential influences on the research outcomes (Finlay & Gough, 2008). This introspective approach helped in maintaining awareness and minimising the impact of bias on data collection and analysis. Second, the researcher employed a mixed methods research design, incorporating qualitative and quantitative approaches, to provide a comprehensive and balanced understanding of the topic. In addition, member checking between the researcher and supervisors was conducted during document and interview analysis to identify key themes (Lincoln & Guba, 1985; Thomas, 2017). By triangulating multiple data sources, including document analysis, interviews, and questionnaires, the researcher sought to reduce the potential influence of bias on the interpretation of findings (Creswell & Plano Clark, 2018). While these steps were taken to minimise

bias, it is important to acknowledge complete elimination of researcher bias is challenging.

Time is a significant consideration for mixed methods approaches. Collecting and analysing quantitative and qualitative data takes time. This study involved the collection and analysis of three data sources: documentary analysis, semistructured interviews, and an online questionnaire. Based on the researcher, who undertook this study working full time in outdoor education, data collection took three years to complete, and the entire study took eight years to finalise. As a result, during this period, some of the documentary sources collected in Phase 1 needed to be updated. The researcher recognises the data collection date may be recognised as a limitation, introducing a historical lens to the examination of the subject matter. It is, however, a point in time, to benchmark what can now be updated in future research on the knowledge, skills and practical experience required for HE outdoor education graduates.

A limitation of the study was the researcher's time constraints in covering each outdoor education concept in depth. The primary focus of the study was to examine the knowledge, skills, and practical experience necessary for graduates of HE programs in outdoor education. For example, the study identified 13 areas of knowledge and skill that were deemed important: safety, risk management, technical instruction for outdoor activities, leadership in outdoor education, pedagogy in outdoor education, personal skills for outdoor education leaders, place-based knowledge, OLAJ, personal development of participants, community and group development, health and wellbeing, human/nature relationships, and environmental science. The study emphasises the relevance of these concepts to the knowledge, skills, and practical experience of HE outdoor education graduates but does not thoroughly explore broader and more profound criticisms of the practices and beliefs associated with these concepts within the context of outdoor education. Further research can address this limitation by

conducting a comprehensive examination of the practices and beliefs associated with the concepts identified in the study.

As identified through bioecological theory via the chronosystem, the factors affecting development may alter as time passes (Bronfenbrenner & Morris, 2006), presenting an opportunity for future research. Despite the document analysis update, the opportunity now exists following the study to conduct a comparative study over two time points. The documentary guide, semi-structured interview guide and online questionnaire items could be adopted from the current study to explore whether variations exist in requirements relating to the knowledge, skills, and practical experience of HE outdoor education graduates.

It is likely that the study did not capture all the documentary data available on the knowledge, skills and practical experience required for HE outdoor education graduates. This is despite collecting and analysing over 250 publicly available documents. The study developed its findings taking a national perspective; however, in Australia, education is a state and territory jurisdictional responsibility. Consequently, some differences exist between policy and procedures across state and territory jurisdictions. Although these differences may be relatively small, they should be acknowledged. For example, the researcher collected documents relating to Safety Guidelines for Education Outdoors from the Department of Education and Training (n.d.-c) in Victoria. However, due to the research design, the researcher did not locate similar documents relating to other states. Therefore, the researcher anticipates bias selectivity (Bowen, 2009) based on the state orientation of the Victorian documents deemed to be relevant to the study. Such bias is a key reason why two other data sources were gained to produce more rigorous study findings. This study revealed that a large range of documents exist from varied sources in this field. Based on the enormity of the number of documents available, there is an opportunity for future research to focus primarily on qualitative documentary analysis to build knowledge on

the different requirements for HE outdoor education graduates across Australian jurisdictions.

By virtue of being based in and focused on Australia, this study has geographical and social constraints. The Australian outdoor education sector is significantly smaller by population than other countries, such as England (McDonald, 2018), Canada (Asfeldt et al., 2021) and Hong Kong (Beames & Brown, 2005), which also have social and geographical differences. Based on the size, social and geographical differences, “outdoor education should be understood in place, time, and culture” (Purc-Stephenson et al., 2019, p. 364). Consequently, there is an opportunity for this study’s findings to be benchmarked against or provide a benchmark for other countries. Cross-country research, which considers cultural contexts, would provide a global view of outdoor sector requirements for HE outdoor education graduates’ knowledge, skills, and practical experience.

The sample size required for the online questionnaire was difficult to determine. The target population was outdoor education practitioners employed by organisations that provide outdoor education services to school-aged participants in Australia. The researcher applied a convenience sampling strategy with the intention of gaining a large, diverse sample. To maximise participation and achieve data saturation, the online questionnaire remained open to responses for eight weeks, with three reminders sent to potential respondents, via the state bodies, social media outdoor education networks, and outdoor forums (Appendix L). Despite achieving saturation after the selection criteria were applied and cleaning data, only 134 participants remained in the sample. The sample size is only questionable due to the unquantifiable nature of the sample population. It remains uncertain whether the sample size was representative of the outdoor education community. To further define the size of the sample population and potentially increase the sample size, it is recommended that future research is undertaken in collaboration with industry bodies, with the first stage of research quantifying the size of the population from which the sample will be drawn. The second

stage of research would be to collaborate with industry bodies to educate their organisations on why research in this field will benefit them and why it is important to help them encourage employees to complete the related questionnaires.

The length of the questionnaire and its potential impact on the completion rate is another limitation. Over 300 people started the questionnaire, and 134 completed it. One reason for drop-out pertains to the length of the questionnaire, which led to a relatively low completion rate. Lengthy questionnaires can be time-consuming, leading to respondent fatigue, reduced motivation, or a lack of willingness to invest the necessary time and effort. The length of the questionnaire posed challenges for data collection. It increased the risk of incomplete responses or respondent disengagement, potentially resulting in missing or inconsistent data. Some participants provided incomplete or partial responses due to the extensive nature of the questionnaire, limiting data completeness and accuracy.

To mitigate incomplete questionnaire responses, efforts were made to ensure clarity and ease of completion. Clear instructions and structured response options were provided. The questionnaire underwent pilot testing to identify potential issues before distribution; during this time, the length was reduced in size. Upon reflection, further reduction in items may have been required to potentially increase the response rate. Incentives to complete the questionnaire may have also assisted, including a gift voucher (Morgan et al., 2017). It is worth noting these potential changes in future research that expands the findings from the current study.

During the document collection an absence of information directly relating to the knowledge, skills, and practical experience of HE outdoor education graduates was identified. It is important to acknowledge that the absence of information can be a significant finding in itself. While document collection can provide valuable insights into the broader context, it also identifies potential gaps in the field, in this case, a lack of explicit connection to the desired criteria. This limitation arises from the inherent nature of relying solely on existing documents, which may not always identify connections and

relationships between components in this case, to knowledge, skills, and practical experience. This justification can be based on the understanding that even the absence of relevant information can contribute to a more comprehensive understanding of the subject matter and shed light on potential gaps or discrepancies (Creswell & Creswell, 2017).

Future research can also investigate the challenges posed by HE structures and processes in relation to practical skill development. The opportunity is to explore the decision-making dynamics within HE institutions, particularly the role of line managers such as Program Directors and Deans of Education. Understanding their perspectives, experiences, and decision-making criteria regarding fieldwork opportunities can provide valuable insights into the barriers faced by students and educators in incorporating practical components into curricula. By acknowledging the concerns and perspectives of line managers, this research can shed light on the perceived conflicts between the need for practical skill development and constraints imposed by budget limitations and the perceived costliness of small student cohorts.

Future research could delve into the intricate relationship between HE systems, faculties, and the challenges associated with practical skill development. The opportunity exists to focus on exploring the structural and organisational factors that influence decision-making processes within HE institutions, with a specific emphasis on how these factors shape the inclusion or exclusion of practical components in educational programs. By acknowledging the complex system that encompasses HE and the faculties where outdoor education courses reside, researchers can gain a deeper understanding of the challenges and barriers encountered when attempting to integrate practical skill development into curricula.

A gendered perspective may also be beneficial for future research. The current study did not explore gender as a variable in the qualitative or quantitative findings. A gendered interpretation of research results can add valuable insights and dimensions to a study (Appelbaum et al., 2003). By examining the data through a gender lens,

researchers can uncover patterns, trends, and variations that may have been overlooked in a gender-neutral analysis (Burr, 2002). This approach allows for a deeper understanding of how gender influences the research topic, shedding light on potential disparities, experiences, and perspectives specific to different genders.

Despite the limitations presented in the current study, the findings have identified the knowledge, skills, and practical experience required by HE outdoor education graduates in Australia to gain employment domestically. Through this study, new knowledge has been gained for the academic field of outdoor education while practical contributions have been achieved for the HE and outdoor education sectors.

In conclusion, to maximise the educational benefits of outdoor education programs, the importance of HE outdoor education graduates who have received formal academic training, technical expertise, and practical experiences in outdoor and educational settings is clearly presented in this study. The outdoor education profession and sector greatly benefit from the contributions of HE outdoor education graduates. These graduates possess the knowledge and skills necessary to deliver safe, educationally effective, and outcome-oriented outdoor education programs. Despite the challenges and complexities discussed in this thesis regarding the provision of education and training to HE outdoor education graduates, Australian HE graduates are well-positioned to develop the professional expertise needed to advance the field and meet the demands of the profession and sector in the future.

References

- Almalki, S. (2016). Integrating quantitative and qualitative data in mixed methods research: Challenges and benefits. *Journal of education and learning*, 5(3), 288–296. <https://doi.org/dx.doi.org/10.5539/jel.v5n3p288>
- Altheide, D. L., & Schneider, C. J. (2013). *Qualitative media analysis* (2nd ed.). SAGE. <https://doi.org/10.4135/9781452270043>
- American Psychological Association. (2017). *Ethical principles of psychologists and code of conduct* www.apa.org/ethics/code/index
- Andre, E. K., Williams, N., Schwartz, F., & Bullard, C. (2017). Benefits of campus outdoor recreation programs: A review of the literature. *Journal of Outdoor Recreation, Education, and Leadership*, 9(1), 15–25. <https://doi.org/10.18666/JOREL-2017-V9-I1-7491>
- Appelbaum, S. H., Audet, L., & Miller, J. C. (2003). Gender and leadership? Leadership and gender? A journey through the landscape of theories. *Leadership & Organization Development Journal*, 24(1), 43–51.
- Asfeldt, M., Purc-Stephenson, R., Rawleigh, M., & Thackeray, S. (2021). Outdoor education in Canada: A qualitative investigation. *Journal of Adventure Education and Outdoor Learning*, 21(4), 297–310. <https://doi.org/10.1080/14729679.2020.1784767>
- Australian Bureau of Statistics. (n.d.-a). *Census Household Form*. [https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Main%20Features802011/\\$FILE/2011%20Census%20Household%20Form.pdf](https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Main%20Features802011/$FILE/2011%20Census%20Household%20Form.pdf)
- Australian Bureau of Statistics. (n.d.-b). *National, state and territory population. Statistics about the population and components of change (births, deaths, migration) for Australia and its states and territories*. <https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release>

- Australian Climbing Instructors Association. (n.d.). *Australian Climbing Instructors Association Training and Assessment Scheme*.
<https://www.acia.com.au/2005%20HTM%20FILES/training%20&%20assess.htm>
- Australian Industry and Skills Committee. (n.d.). *Outdoor recreation national industry insight*. <https://nationalindustryinsights.aisc.net.au/industries/sport-fitness-and-recreation/outdoor-recreation>
- Babbie, E. R. (2020). *The practice of social research* (15th ed.). Cengage learning.
<https://au.cengage.com/c/isbn/9780357360767/>
- Backman, E. (2018). Development (s) of outdoor education in Sweden. In P. Becker, B. Humberstone, C. Loynes, & J. Schirp (Eds.), *The Changing World of Outdoor Learning in Europe* (pp. 165–178). Routledge.
<https://doi.org/10.4324/9781315170671>
- Baker, M., & O'Brien, W. (2020). Rethinking outdoor leadership: An investigation of affective abilities in Australian higher education curriculum. *Journal of Adventure Education and Outdoor Learning*, 20(3), 202–216.
<https://doi.org/10.1080/14729679.2019.1634598>
- Baran, E., & Correia, A.-P. (2014). A professional development framework for online teaching. *TechTrends*, 58(5), 95–101. <https://doi.org/10.1007/s11528-014-0791-0>
- Barber, P. (2021). *An exploration of relationship development through outdoor education* [Doctorial dissertation, Victoria University].
<https://vuir.vu.edu.au/42454/>
- Barnes, P. (2004). So, what goes into an outdoor education degree-and are we getting it right? *Horizons*, 25(Spring), 21–24.
- Beames, S., & Brown, A. (2005). Outdoor education in Hong Kong: Past, present and future. *Journal of Adventure Education and Outdoor Learning*, 5(1), 69–82.
<https://doi.org/10.1080/14729670585200611>

- Beames, S., & Brown, M. (2014). Enough of Ronald and Mickey: Focusing on learning in outdoor education. *Journal of Adventure Education & Outdoor Learning*, 14(2), 118–131. <https://doi.org/10.1080/14729679.2013.841096>
- Bergman, M. (2008). *Advances in mixed methods research. Theories and applications.* (M. Bergman, Ed.). SAGE. <https://doi.org/10.4135/9780857024329>
- Bernard, T., Dercon, S., Orkin, K., & Taffesse, A. S. (2019). Parental aspirations for children's education: Is there a "girl effect"? Experimental evidence from rural Ethiopia. *Papers and proceedings of the American Economic Association*
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
- Boyes, M. A. (2004). The maintenance of quality in the preparation of outdoor education teachers. *New Zealand Journal of Outdoor Education: Ko Tane Mahuta Pupuke*, 1(4), 82–98. <https://doi.org/10.3316/informit.794466349064501>
- Boyes, M. A., & O'Hare, D. (2003). Between safety and risk: A model for outdoor adventure decision making. *Journal of Adventure Education & Outdoor Learning*, 3(1), 63–76. <https://doi.org/10.1080/14729670385200251>
- Brace, I. (2013). *Questionnaire design: How to plan, structure and write survey material for effective market research.* Kogan Page.
<http://ebookcentral.proquest.com/lib/vu/detail.action?docID=1190431>
- Bronfenbrenner, U. (1976). The experimental ecology of education. *American Educational Research Association*, 5(9), 5–15. <https://doi.org/10.2307/1174755>
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Harvard University Press.
<https://www.hup.harvard.edu/catalog.php?isbn=9780674224575>
- Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development.* SAGE. <https://au.sagepub.com/en-gb/oce/making-human-beings-human/book225589>

- Bronfenbrenner, U., & Evans, G. W. (2000). Developmental science in the 21st century: Emerging questions, theoretical models, research designs and empirical findings. *Social development*, 9(1), 115–125.
- Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: theoretical models of human development* (6th ed., Vol. 1, pp. 793–828). Wiley & Sons. <http://VU.ebib.com.au/patron/FullRecord.aspx?p=258892>
- Brookes, A. (2003). A critique of neo-Hahnian outdoor education theory. Part one: Challenges to the concept of “character building”. *Journal of Adventure Education & Outdoor Learning*, 3(1), 49-62.
<https://doi.org/10.1080/14729670385200241>
- Brookes, A. (2018). *Preventing fatal incidents in school and youth group camps and excursions: Understanding the unthinkable*. Springer.
<https://link.springer.com/book/10.1007/978-3-319-89882-7>
- Brooks, C. (2021). *Initial teacher education at scale: Quality conundrums*. Routledge.
<https://doi.org/10.4324/9781003088608>
- Brophy, J., & Bawden, D. (2005). Is Google enough? Comparison of an internet search engine with academic library resources. *Aslib Proceedings*, 57(6), 498–512.
<https://doi.org/10.1108/00012530510634235>
- Brown, H., Harris, I., & Porter, S. (2015). Professional accreditation in the UK outdoor sector. In B. Humberstone, H. Prince, & K. A. Henderson (Eds.), *Routledge international handbook of outdoor studies* (pp. 178–188). Routledge.
<https://doi.org/10.4324/9781315768465>
- Bryman, A. (2016). *Social research methods*. Oxford University Press.
- Buell, L. H. (1981). *The identification of outdoor adventure leadership competencies for entry-level and experienced-level personnel* [Doctoral dissertation, University of Massachusetts].
<http://search.proquest.com/docview/303165287?accountid=14844>

- Burr, V. (2002). *Gender and social psychology*. Routledge.
- Caena, F. (2011). *Literature review. Quality in teachers' continuing professional development* (Vol. 2). European Commission.
https://www.researchgate.net/publication/344906256_Literature_review_Quality_in_Teachers'_continuing_professional_development
- Carol, H. (2008). Models of adult development in Bronfenbrenner's bioecological theory and Erikson's biopsychosocial life stage theory. In M. C. Smith & N. DeFrates-Densch (Eds.), *Handbook of research on adult learning and development*. Routledge. <https://doi.org/10.4324/9780203887882.ch3>
- Charles Sturt University. (n.d.). *Bachelor of outdoor education*. Charles Sturt University.
<http://www.csu.edu.au/handbook/handbook20/courses/BachelorofOutdoorEducation.html>
- Christensen, J. (2016). A critical reflection of Bronfenbrenner's development ecology model. *Problems of Education in the 21st Century*, 69, 22–28. <http://0-search.ebscohost.com.library.vu.edu.au/login.aspx?direct=true&db=ehh&AN=15180411&site=eds-live>
- Christensen, L. B., Johnson, B., Turner, L. A., & Christensen, L. B. (2011). *Research methods, design, and analysis* (12th ed.). Pearson.
- Coates, J. K., & Pimlott-Wilson, H. (2019). Learning while playing: Children's Forest School experiences in the UK. *British Educational Research Journal*, 45(1), 21–40. <https://doi.org/10.1002/berj.3456>
- Cohen, L., Manion, L., & Morrison, K. (2017). *Research methods in education* (8th ed.). Taylor & Francis.
<https://ebookcentral.proquest.com/lib/vu/detail.action?docID=5103697>
- Collins, R. (2009). *Professional development in outdoor leadership: A study investigating the certifications, experiences and competencies of Wilderness Education Association graduates*. Necessary Journeys,

https://www.weainfo.org/resources/Documents/proceedings_08_09.pdf#page=4

[6](#)

Commonwealth of Australia. (n.d.-a). *Course Seeker*. Retrieved September 25, 2022

from <https://www.coursesseeker.edu.au/courses>

Commonwealth of Australia. (n.d.-b). *SISOFLD004 - Provide first aid in remote locations (Release 1)*. Australian Government.

<https://training.gov.au/Training/Details/SISOFLD004>

Cousin, G. (2006). An introduction to threshold concepts. *Planet*, 17(1), 4–5.

<https://doi.org/10.11120/plan.2006.00170004>

Creamer, E. G. (2018). *An introduction to fully integrated mixed methods research*.

SAGE. <https://doi.org/10.4135/9781071802823>

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. SAGE.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into practice*, 39(3), 124–130.

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research*. SAGE.

DeCuir-Gunby, J. T., & Schutz, P. A. (2017). *Developing a mixed methods proposal: A practical guide for beginning researchers*

<https://doi.org/10.4135/9781483399980>

Denzin, N. (2017). *The research act: A theoretical introduction to sociological methods*. AldineTransaction.

Department of Education and Early Childhood Development. (n.d.-a). *Safety guidelines for education outdoors*.

<http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorenvironment.aspx>

Department of Education and Early Childhood Development. (n.d.-b). *Safety guidelines for education outdoors, camping.*

<http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcamp.aspx>

Department of Education and Early Childhood Development. (n.d.-c). *Safety guidelines for education outdoors, camping - activity.*

<http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcamp.aspx>

Department of Education and Early Childhood Development. (n.d.-d). *Safety guidelines for education outdoors, canoeing and kayaking - people.*

<http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcanoepeople.aspx>

Department of Education and Training. (n.d.-a). *Excursion roles and responsibilities.*

<https://education.vic.gov.au/school/teachers/studentmanagement/excursions/Pages/outdoorrole.aspx>

Department of Education and Training. (n.d.-b). *Excursions including camps and adventure activities.*

<https://www2.education.vic.gov.au/pal/excursions/guidance/adventure-activities>

Department of Education and Training. (n.d.-c). *Safety guidelines for education outdoors.*

<https://www.education.vic.gov.au/school/teachers/studentmanagement/excursions/Pages/outdoorguidelines.aspx>

Department of Education Skills and Employment. (n.d.-a). *Australian Qualifications Framework. AQFC.* <http://www.aqf.edu.au/>

Department of Education Skills and Employment. (n.d.-b). *SIS - Sport, fitness and recreation training package (Release 4.0).*

<https://training.gov.au/Training/Details/SIS>

- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method*. Wiley & Sons.
<https://www.wiley.com/en-us/Internet%2C+Phone%2C+Mail%2C+and+Mixed+Mode+Surveys%3A+The+Tailored+Design+Method%2C+4th+Edition-p-9781118921302>
- Dyment, J. E., & Potter, T. G. (2014). Is outdoor education a discipline? Provocations and possibilities. *Journal of Adventure Education and Outdoor Learning*, 15(3), 193–208. <https://doi.org/10.1080/14729679.2014.949808>
- Enoksen, E., & Lynch, P. (2018). Learning leadership: Becoming an outdoor leader. *Journal of Adventure Education and Outdoor Learning*, 18(2), 176–188.
<https://doi.org/10.1080/14729679.2017.1391105>
- Fang, B.-B., Lu, F. J., Gill, D. L., Liu, S. H., Chyi, T., & Chen, B. (2021). A systematic review and meta-analysis of the effects of outdoor education programs on adolescents' self-efficacy. *Perceptual and motor skills*, 128(5), 1932–1958.
<https://doi.org/10.1177/00315125211022709>
- Fauth, B., Decristan, J., Decker, A.-T., Büttner, G., Hardy, I., Klieme, E., & Kunter, M. (2019). The effects of teacher competence on student outcomes in elementary science education: The mediating role of teaching quality. *Teaching and Teacher Education*, 86, 102882. <https://doi.org/10.1016/j.tate.2019.102882>
- Federation University. (n.d.-a). *Bachelor of outdoor and environmental education*.
<https://study.federation.edu.au/course/DOE5>
- Federation University. (n.d.-b). *Bachelor of sport, physical and outdoor education*.
<https://study.federation.edu.au/course/DSO5>
- Field, A. (2009). *Discovering statistics using SPSS*. SAGE.
- Fielding, N., & Lee, R. M. (1998). *Computer analysis and qualitative research*. SAGE.
<https://au.sagepub.com/en-gb/oce/computer-analysis-and-qualitative-research/book204803>

- Finlay, L., & Gough, B. (2008). *Reflexivity: A practical guide for researchers in health and social sciences*. John Wiley & Sons.
- Flick, U. (2022). *An introduction to qualitative research*. SAGE.
- Fowler, C. (2017). *The boundaries and connections between the VET and higher education sectors: "Confused, contested and collaborative"*. National Centre for Vocational Education Research.
https://www.ncver.edu.au/_data/assets/pdf_file/0027/158706/Boundaries_and_connections_between_VET_and_higher_ed_sectors.pdf
- Freeman, M. (2011). From "character-training" to "personal growth": The early history of Outward Bound 1941–1965. *History of Education*, 40(1), 21–43.
<https://doi.org/10.1080/0046760X.2010.507223>
- Fulthorp, K., & D'Eloia, M. H. (2015). Managers' perceptions of entry-level job competencies when making hiring decisions for municipal recreation agencies. *Journal of Park and Recreation Administration*, 33(1).
- Galloway, S. (2007). Experience and medical decision-making in outdoor leaders. *Journal of Experiential Education*, 30(2), 99–116.
<https://doi.org/10.5193/JEE.30.2.99>
- Garvey, D., & Gass, M. (1999). Hiring preference trends in the outdoor adventure programming field. *Journal of Experiential Education*, 22(1), 44–49.
<https://doi.org/10.1177/10538259990220010>
- Goe, L. (2007). The link between teacher quality and student outcomes: A research synthesis. *National comprehensive center for teacher quality*.
<https://eric.ed.gov/?id=ED521219>
- Goldstein, A. E., & Reiboldt, W. (2004). The multiple roles of low income, minority women in the family and community: A qualitative investigation. *The qualitative report*, 9(2), 241–265. <https://doi.org/10.46743/2160-3715/2004.1927>

- Gray, T., & Martin, P. (2012). The role and place of outdoor education in the Australian National Curriculum. *Journal of Outdoor and Environmental Education*, 16(1), 39–50. <https://doi.org/10.1007/BF03400937>
- Green, P. J. (1981). *The content of a college-level outdoor leadership course for land-based outdoor pursuits in the Pacific Northwest: A Delphi consensus* [Doctoral dissertation, University of Oregon].
<https://search.proquest.com/openview/1efea394bd6b92e9a1897e08b3094620/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Griffith, B., & Friesen, L. (2021). *Boundless statistics for organizations*. Lumen Learning. <https://open.ocolearnok.org/reach-higher-data-analysis/front-matter/about-this-book/>
- Griffore, R. J., & Phenice, L. A. (2016). Proximal processes and causality in human development. *European journal of educational and development psychology*, 4(1), 10–16. <https://www.eajournals.org/journals/european-journal-of-educational-and-development-psychology-ejedp/effects-of-adequate-prescription-and-administration-of-sports-activities-in-the-control-of-menopausal-health-conditions-among-university-female-academic-staff/proximal-processes-and-causality-in-human-development/>
- Grimwood, B. S., Gordon, M., & Stevens, Z. (2018). Cultivating nature connection: Instructor narratives of urban outdoor education. *Journal of Experiential Education*, 41(2), 204–219. <https://doi.org/10.1177/1053825917738267>
- Hakim, A. (2015). Contribution of competence teacher (pedagogical, personality, professional competence and social) on the performance of learning. *The International Journal of Engineering and Science*, 4(2), 1–12.
<https://doi.org/10.24252/Eternal.V22.2016.A5>
- Hannah, D. R., & Lautsch, B. A. (2011). Counting in qualitative research: Why to conduct it, when to avoid it, and when to closet it. *Journal of Management Inquiry*, 20(1), 14–22. <https://doi.org/10.1177/1056492610375988>

- Haras, K. (2010). Overcoming fear: Helping decision makers understand risk in outdoor education. *Pathways: The Ontario Journal of Outdoor Education*, 22(2), 25–32. <https://www.coeo.org/pathways-journal/>
- Härkönen, U. (2007, October). *The Bronfenbrenner ecological systems theory of human development* International Conference Person Color Nature Music, Daugavpils University, Saule. Latvia.
- Harper, N., & Robinson, D. W. (2005). Outdoor adventure risk management: Curriculum design principles from industry and educational experts. *Journal of Adventure Education & Outdoor Learning*, 5(2), 145–158. <https://doi.org/10.1080/14729670585200671>
- Harper, N. J. (2017). Outdoor risky play and healthy child development in the shadow of the “risk society”: A forest and nature school perspective. *Child & Youth Services*, 38(4), 318–334. <https://doi.org/10.1080/0145935X.2017.1412825>
- Hattie, J. (2008). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- Hesse-Biber, S. N. (2004). Unleashing Frankenstein's monster: The use of computers in qualitative research. *Approaches to Qualitative Research*, 535–545.
- Hesse-Biber, S. N., & Johnson, R. B. (2015). *The Oxford handbook of multimethod and mixed methods research inquiry*. Oxford University Press.
- Hesse-Biber, S. N., & Leavy, P. (2010). *The practice of qualitative research*. SAGE.
- Hodgson, A., & Spours, K. (2009). *Ecological perspectives on the learning and skills sector in England. Discussion paper for new direction in learning and skills in England, Scotland and Wales*. The Institute of Education London University.
- Holland, W. H., Powell, R. B., Thomsen, J. M., & Monz, C. A. (2018). A systematic review of the psychological, social, and educational outcomes associated with participation in wildland recreational activities. *Journal of Outdoor Recreation, Education, and Leadership*, 10(3). <https://doi.org/doi.org/10.18666/JOREL-2018-V10-I3-8382>

- Holmes, P. (2015). Vocational training and higher education: Using outdoor education as a lens. In M. Robertson, R. Lawrence, & G. Heath (Eds.), *Experiencing the Outdoors: Enhancing strategies for wellbeing*. (pp. 207–221). Brill Sense.
https://doi.org/10.1007/978-94-6209-944-9_17
- Hsieh, H. F., & Shannon, S. E. (2005, Nov). Three approaches to qualitative content analysis. *Qualitative health research*, 15(9), 1277–1288.
<https://doi.org/10.1177/1049732305276687>
- Humberstone, B., & Mannerings, H. (2004). Degrees in the outdoors! What's the purpose, what's the point? The Finnish project. *Horizons*, 5(3), 25-29.
- Ivankova, N., & Plano Clark, V. (2016). *Mixed methods research: A guide to the field*. SAGE. <https://doi.org/dx.doi.org/10.4135/9781483398341>
- Johnson, B. (2010). A History of Philosophical and Theoretical Issues for Mixed Methods Research. In R. Gray (Ed.), *SAGE Handbook of Mixed Methods in Social & Behavioral Research* (2nd ed., pp. 69–94). SAGE.
<https://doi.org/10.4135/9781506335193>
- Johnson, B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, 33(7), 14–26.
- Jones, A., McCluskey, T., & Pardy, J. (2010). *Higher level qualifications: Towards a new future*. National Centre for Vocational Education Research
- Jordan, D. J. (2018). Ongoing challenges for women as outdoor leaders. In *The Palgrave international handbook of women and outdoor learning* (pp. 217–233). Palgrave Macmillan.
- Keeble, T. (2020). *Building social capital through the delivery of outdoor education at Victorian government schools*. [Doctoral dissertation, Federation University].
- Keller, A. (2017, February). How to gauge the relevance of codes in qualitative data analysis? A technique based on information retrieval. *Wirtschaftsinformatik*, University of St.Gallen.

- Knowles, M. S., Holton III, E. F., Swanson, R. A., & Robinson, P. A. (2020). *The adult learner: The definitive classic in adult education and human resource development*. Routledge. <https://doi.org/https://doi.org/10.4324/9780429299612>
- Kosseff, A. (2016). *AMC guide to outdoor leadership* (3 ed.). Appalachian Mountain Club Books.
- LaTrobe University. (n.d.-a). *Bachelor of outdoor and sustainability education*. <https://www.latrobe.edu.au/courses/bachelor-of-outdoor-and-sustainability-education>
- LaTrobe University. (n.d.-b). *OED2001 Teaching in river environments*. <https://handbook.latrobe.edu.au/subjects/2022/OED2001>
- Lausselet, N., & Zosso, I. (2022). Outdoor and sustainability education: How to link and implement them in teacher education? An empirical perspective. In *Competences in Education for Sustainable Development* (pp. 167-174). Springer. https://doi.org/10.1007/978-3-030-91055-6_20
- Lewthwaite, B., & Wiebe, R. (2012). Fostering the development of chemistry teacher candidates: A Bioecological approach. *Canadian Journal of Science, Mathematics and Technology Education*, 12(1), 36-61. <https://doi.org/10.1080/14926156.2012.649049>
- Lincoln, Y., & Guba, E. (2000). Paradigmatic controversies, contradictions, and emerging Confluences. . In K. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 163-168).
- Lincoln, Y. S., & Guba, E. (1985). *Naturalistic inquiry*. SAGE.
- Lisle, C. (2018). Turning inside out: Learning through local phenomena and lived experience. In T. Gray & D. Mitten (Eds.), *The Palgrave international handbook of women and outdoor learning* (pp. 691–703). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-53550-0_47

- Lugg, A., & Martin, P. (2001). The nature and scope of outdoor education in Victorian schools. *Australian Journal of Outdoor Education*, 5(2), 42–48.
<https://doi.org/doi.org/10.1007/BF03400733>
- Mann, J., Gray, T., & Truong, S. (2022). Rediscovering the potential of outdoor learning for developing 21st century competencies. In R. Jucker & J. von Au (Eds.), *High-quality outdoor learning: Evidence-based education outside the classroom for children, teachers and society* (pp. 211–229). Springer.
https://doi.org/10.1007/978-3-031-04108-2_12
- Mann, K. (2003, April). *A snapshot of outdoor leadership preparation opportunities in Australia* 13th National Outdoor Education Conference, Adelaide, South Australia.
https://www.academia.edu/download/28171662/2003nationaloeconference_proceedings.pdf#page=121
- Mann, K. (2005, July). *Outdoor leadership preparation: Findings from a research study* 14th National Outdoor Conference, Gold Coast, Queensland, Australia.
<http://hdl.handle.net/1959.9/333491>
- Margolis, J. (2012). Hybrid teacher leaders and the new professional development ecology. *Professional Development in Education*, 38(2), 291–315.
<https://doi.org/10.1080/19415257.2012.657874>
- Marsden, D., Hanlon, C., & Burrige, P. (2012). The knowledge skill and practical experience required of outdoor education leaders in Victoria. In M. Burke & B. Stewart (Eds.), *Sport, culture and society* (pp. 77–94). Maribyrnong Press.
- Marsden Jacob Associates. (n.d.-a). *Nationwide impacts of outdoor recreation. [Report prepared for SkillsIQ]*. SkillsIQ.
<https://www.skillsiq.com.au/site/DefaultSite/filesystem/documents/MarsdenJacob/Nationwide%20Impacts%20of%20Outdoor%20Recreation.pdf>
- Marsden Jacob Associates. (n.d.-b). *Victoria's nature-based outdoor economy*. Outdoors Victoria & Sport and Recreation Victoria.

<https://outdoorsvictoria.org.au/wp-content/uploads/2016/03/Outdoor-Economics.pdf>

Martin, B., Cashel, C., Wagstaff, M., & Breunig, M. (2017). *Outdoor leadership: Theory and practice* (2nd ed.). Human Kinetics Publishers.

https://us.humankinetics.com/products/outdoor-leadership-2nd-edition?_pos=1&_sid=69d37af6f&_ss=r

Martin, P. (1998). Educational ideology and outdoor leadership education: Why both ORCA and the AOEC exist. *Australian Journal of Outdoor Education*, 3(1), 14–20. <https://doi.org/10.1007/BF03400673>

Martin, P. (2004). Outdoor adventure in promoting relationships with nature. *Australian Journal of Outdoor Education*, 8(1), 20-28. <https://doi.org/10.1007/BF03400792>

Martin, P. (2005). *Outdoor leadership competence in academic pathways: Or how can 4-year trained teachers of outdoor education demonstrate competence* 14th National Outdoor Conference, Gold Coast, Queensland.

<http://hdl.handle.net/1959.9/333491>

Martin, P. (2008a). Outdoor education in senior schooling: Clarifying the body of knowledge. *Australian Journal of Outdoor Education*, 12(1), 13–23.

<https://doi.org/10.1007/BF03401020>

Martin, P. (2008b). Teacher qualification guidelines, ecological literacy and outdoor education. *Australian Journal of Outdoor Education*, 12(2), 32-38.

<https://doi.org/10.1007/BF03400868>

Martin, P., & Hewison, T. (2010). Outdoor education and the national curriculum. *Journal of Outdoor and Environmental Education*.

<https://doi.org/10.1007/BF03400900>

McDonald, P. (2018). *The story of White Hall Centre: Outdoor education across the decades*. <https://petemcdonald.co/posts/the-story-of-white-hall-centre/>

Melhuish, L. (2016). Dangerous liaisons: Exploring employer engagement relationships in vocational undergraduate adventure and outdoor management degrees.

Industry and Higher Education, 31(1), 3–10.

<https://doi.org/10.1177/0950422216686474>

Mertens, D. (2005). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. SAGE.

Mertens, D. M. (2019). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. SAGE.

Mogk, D. W., & Goodwin, C. (2012). Learning in the field: Synthesis of research on thinking and learning in the geosciences. In *Earth and mind II: A synthesis of research on thinking and learning in the geosciences* (Vol. 486, pp. 131–163). Geological Society of America. [https://doi.org/10.1130/2012.2486\(24\)](https://doi.org/10.1130/2012.2486(24))

Morgan, A. J., Rapee, R. M., & Bayer, J. K. (2017). Increasing response rates to follow-up questionnaires in health intervention research: randomized controlled trial of a gift card prize incentive. *Clinical Trials*, 14(4), 381–386.

Munge, B. (2007). *A study of Australian employers' perceptions of graduates from the Bachelor of Arts (Outdoor Education) at La Trobe University* [Honours dissertation, La Trobe University]. Bendigo.

<https://research.usc.edu.au/esploro/outputs/99451340802621>

Munge, B. (2009). From the outside looking in: A study of Australian employers' perceptions of graduates from outdoor education degree programs. *Australian Journal of Outdoor Education*, 13(1), 30–38.

<https://doi.org/10.1007/BF03400877>

Munge, B., Thomas, G., & Heck, D. (2018). Outdoor fieldwork in higher education: Learning from multidisciplinary experience. *Journal of Experiential Education*, 41(1), 39–53. <https://doi.org/10.1177/1053825917742165>

Mutz, M., & Müller, J. (2016). Mental health benefits of outdoor adventures: Results from two pilot studies. *Journal of Adolescence*, 49, 105–114.

<https://doi.org/10.1016/j.adolescence.2016.03.009>

- National Institutes of Health. (2018). *Obtaining informed consent*
www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/informed-consent
- Nichols, G. (2000). Risk and adventure education. *Journal of Risk Research*, 3(2), 121–134. <https://doi.org/10.1080/136698700376635>
- Nicol, R. (2002). Outdoor education: Research topic or universal value? Part one. *Journal of Adventure Education & Outdoor Learning*, 2(1), 29–41.
<https://doi.org/10.1080/14729670285200141>
- NSW Education Standards Authority. (n.d.). *Getting accredited for the first time*.
<https://educationstandards.nsw.edu.au/wps/portal/nesa/teacher-accreditation/apply/first-time-accreditation>
- Office of the United Nations High Commissioner for Human Rights. (n.d.). *Convention on the rights of the child*. United Nations.
<https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>
- Ogilvie, K. (2005). *Leading and managing groups in the outdoors* (2nd ed.). Institute for Outdoor Learning.
- Oishi, S., Schimmack, U., & Diener, E. (2001). Pleasures and subjective well-being. *European Journal of Personality*, 15(2), 153–167.
- Onwuegbuzie, A. J., & Collins, K. M. (2007). A typology of mixed methods sampling designs in social science research. *Qualitative Report*, 12(2), 281–316.
- Onwuegbuzie, A. J., & Johnson, R. B. (2006). The validity issue in mixed research. *Research in the Schools*, 13(1), 48–63.
- Onwuegbuzie, A. J., Witcher, A. E., Collins, K. M. T., Filer, J. D., Wiedmaier, C. D., & Moore, C. W. (2016). Students' perceptions of characteristics of effective college teachers: A validity study of a teaching evaluation form using a mixed-methods analysis. *American Educational Research Journal*, 44(1), 113–160.
<https://doi.org/10.3102/0002831206298169>

- Outdoor Council of Australia. (n.d.-a). *Australian adventure activity standard and good practice guides*. <https://australianaas.org.au/>
- Outdoor Council of Australia. (n.d.-b). *National Outdoor Leader Registration Scheme*. <http://www.outdoorcouncil.asn.au/nolrs/>
- Outdoor Council of Australia. (n.d.-c). *National Outdoor Leader Registration Scheme - Technical working groups*. <http://www.outdoorcouncil.asn.au/nolrs/>
- Outdoor Council of Australia. (n.d.-d). *Outdoor leader generic skills 060613*. <http://www.outdoorcouncil.asn.au/nolrs/>
- Outdoor Council of Australia. (n.d.-e). *Registration checklist canoeing guide flat water*. <http://www.outdoorcouncil.asn.au/nolrs/>
- Outdoor Council of Australia. (n.d.-f). *Registration logbook requirements summary 020813*. <http://www.outdoorcouncil.asn.au/nolrs/>
- Outdoor Education Australia. (n.d.-a). *Guidelines for teaching outdoor education in schools, outdoor education Australia*. <http://www.outdooreducationaustralia.org.au/guidelines.html>
- Outdoor Education Australia. (n.d.-b). *Rationale for outdoor education*. <https://outdooreducationaustralia.org.au/education/rationale-for-oe/>
- Outdoor Education Australia. (n.d.-c). *Teaching guidelines*. <https://outdooreducationaustralia.org.au/education/teaching-guidelines/#toggle-id-2>
- Outdoor Education Australia. (n.d.-d). *What is outdoor education*. <https://outdooreducationaustralia.org.au/education/what-is-oe/>
- Outdoor Recreation Centre. (2005). *Snorkelling, scuba diving & wildlife swims adventure activity standards for organisations, guides and leaders conducting adventurous activities for participants (commercial or non-commercial) (2nd ed.)*. Outdoor Recreation Centre Inc.
- Outdoor Recreation Centre. (2006a). *Canoeing & kayaking adventure activity standards for organisations, guides and leaders conducting adventurous*

- activities for participants (commercial or non-commercial)* (2.1 ed.). Outdoor Recreation Centre Inc.
- Outdoor Recreation Centre. (2006b). *Food & sustainability - quality food management systems* (Edition 2.1 ed.). Outdoor Recreation Centre Inc.
- Outdoor Recreation Centre. (2010a). *Abseiling Adventure Activity Standard (AAS) guidelines for dependent groups* (3.1 ed.). Outdoor Recreation Centre Inc.
- Outdoor Recreation Centre. (2010b). *Bushwalking Adventure Activity Standard (AAS) guidelines for dependent groups* (3.1 ed.). Outdoor Recreation Centre Inc.
- Outdoor Recreation Centre. (2010c). *Recreational Caving Adventure Activity Standard (AAS) guidelines for dependent groups* (3.1 ed.). Outdoor Recreation Centre Inc.
- Outdoor Recreation Centre. (2010d). *Rockclimbing Adventure Activity Standard (AAS) guidelines for dependent groups* (3.1 ed.). Outdoor Recreation Centre Inc.
- Padgett, D. (2012). *Qualitative and mixed methods in public health*. SAGE.
<https://doi.org/10.4135/9781483384511>
- Paisley, K., Furman, N., Sibthorp, J., & Gookin, J. (2008). Student learning in outdoor education: A case study from the National Outdoor Leadership School. *Journal of Experiential Education*, 30(3), 201–222.
- Pallant, J. F. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (7th ed.). Routledge. <https://doi.org/10.4324/9781003117452>
- Parks Victoria. (n.d.). *2013 – 2014 Tour operator and activity provider licence application*. <http://parkweb.vic.gov.au/park-management/applications,-licences-and-permits/licensed-tour-operators>
- Payne, G., & Payne, J. (2004). *Key concepts in social research*. SAGE.
<https://doi.org/10.4135/9781849209397>
- Poff, R. A., Calvin, D. A., & Stuessy, T. L. (2001, November). *Outdoor programs and academic departments working together: Examining the benefits of offering for-credit recreation hard skills courses* [Conference Paper] 15th Annual

international conference on outdoor recreation and education, Idaho State University, Pacatello, Idaho, United States.

<http://files.eric.ed.gov/fulltext/ED476478.pdf>

Polley, S. (2021a). *The nature and scope of outdoor education in South Australian schools 1999-2017* [Doctoral dissertation, Flinders University].

<https://theses.flinders.edu.au/view/2d81af10-8e80-4e8f-92eb-915b8f506c44/1>

Polley, S. (2021b). Professionalism, professionalisation and professional currency in outdoor environmental education. In G. Thomas, J. Dymont, & H. Prince (Eds.), *Outdoor Environmental Education in Higher Education: International Perspectives* (pp. 363–373). Springer. [https://doi.org/10.1007/978-3-030-75980-](https://doi.org/10.1007/978-3-030-75980-3_30)

[3_30](https://doi.org/10.1007/978-3-030-75980-3_30)

Polley, S., & Pickett, B. (2003). The nature and scope of outdoor education in South Australia: A summary of key findings. *Journal of Outdoor and Environmental Education*, 7(2), 11–18. <https://doi.org/10.1007/BF03400775>

Polley, S., & Thomas, G. J. (2017). What are the capabilities of graduates who study outdoor education in Australian universities? The case for a threshold concepts framework. *Journal of Outdoor and Environmental Education*, 20(1), 55–63.

<https://doi.org/10.1007/BF03401003>

Pratt, M. G. (2008). Fitting oval pegs into round holes: Tensions in evaluating and publishing qualitative research in top-tier North American journals.

Organizational Research Methods, 11(3), 481–509.

<https://doi.org/10.1177/1094428107303349>

Priest, S. (1986a). *Outdoor leadership preparation in five nations* [Doctoral dissertation, University of Oregon]. [https://alliance-](https://alliance-uoregon.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma99900429276301852&context=L&vid=01ALLIANCE_UO:UO&lang=en&search_scope=Everything&adaptor=Local%20Search%20Engine&tab=Rollup&query=any,contains,Outdoor%20leadership%20preparation%20in%20five%20nations)

[uoregon.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma99900429276301852&context=L&vid=01ALLIANCE_UO:UO&lang=en&search_scope=Everything&adaptor=Local%20Search%20Engine&tab=Rollup&query=any,contains,Outdoor%20leadership%20preparation%20in%20five%20nations](https://alliance-uoregon.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma99900429276301852&context=L&vid=01ALLIANCE_UO:UO&lang=en&search_scope=Everything&adaptor=Local%20Search%20Engine&tab=Rollup&query=any,contains,Outdoor%20leadership%20preparation%20in%20five%20nations)

- Priest, S. (1986b). Redefining outdoor education: A matter of many relationships. *The Journal of Environmental Education*, 17(3), 13–15.
<https://doi.org/10.1080/00958964.1986.9941413>
- Priest, S., & Gass, M. (2018). *Effective leadership in adventure programming* (3rd ed.). Human Kinetics Publishers.
- Prince, H., & Cory-Wright, J. (2022). Outdoor education as a deep education for global sustainability and social justice. In K. Petry & J. de Jong (Eds.), *Education in Sport and Physical Activity: Future Directions and Global Perspectives* (1st ed.). Routledge. <https://doi.org/10.4324/9781003002666>
- Punch, K. F., & Oancea, A. (2014). *Introduction to research methods in education* (2nd ed.). SAGE. <https://au.sagepub.com/en-gb/oce/introduction-to-research-methods-in-education/book239756>
- Purc-Stephenson, R. J., Rawleigh, M., Kemp, H., & Asfeldt, M. (2019). We are wilderness explorers: A review of outdoor education in Canada. *Journal of Experiential Education*, 42(4), 364–381.
<https://doi.org/10.1177/1053825919865574>
- QSR. (n.d.). *NVivo 10 for Windows: Run a word frequency*. https://help-nv10.qsrinternational.com/desktop/procedures/run_a_word_frequency_query.htm
- Qualtrics. (2022). *3 benefits of modern research platforms*. Qualtrics.
<https://www.qualtrics.com/ebooks-guides/modern-researcher-tips-and-tricks/>
- Raiola, E., & Sugerman, D. (1999). Outdoor leadership curricula. In J. C. Miles & S. Priest (Eds.), *Adventure programming* (pp. 241–245). Venture Publishing.
- Remington, T., & Legge, M. (2017, 2017/01/02). Outdoor education in rural primary schools in New Zealand: a narrative inquiry. *Journal of Adventure Education and Outdoor Learning*, 17(1), 55-66.
<https://doi.org/10.1080/14729679.2016.1175362>

- Renn, K. A., & Arnold, K. D. (2003). Reconceptualizing research on college student peer culture. *The journal of higher education*, 74(3), 261–291.
<https://doi.org/10.1080/00221546.2003.11780847>
- Richmond, D., Sibthorp, J., Gookin, J., Annarella, S., & Ferri, S. (2018). Complementing classroom learning through outdoor adventure education: Out-of-school-time experiences that make a difference. *Journal of Adventure Education and Outdoor Learning*, 18(1), 36–52.
- Rickinson, M., Dillon, J., Teamey, K., Morris, M., Choi, M. Y., Sanders, D., & Benefield, P. (2004). *A review of research on outdoor learning*. National Foundation for Educational Research and King's College London.
- Robertson, M., Lawrence, R., & Heath, G. (2015). *Experiencing the outdoors: Enhancing strategies for wellbeing*. Springer.
- Rodrigues, C., & Payne, P. G. (2017). Environmentalization of the physical education curriculum in Brazilian universities: Culturally comparative lessons from critical outdoor education in Australia. *Journal of Adventure Education and Outdoor Learning*, 17(1), 18–37. <https://doi.org/10.1080/14729679.2015.1035294>
- Rosa, E. M., & Tudge, J. (2013). Urie Bronfenbrenner's theory of human development: Its evolution from ecology to bioecology. *Journal of Family Theory & Review*, 5(4), 243–258. <https://doi.org/10.1111/jftr.12022>
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: Exploring its conceptualization and operationalization. *Quality & quantity*, 52(4), 1893–1907.
<https://doi.org/10.1007/s11135-017-0574-8>
- Schreck, C. M., Weilbach, J. T., & Reitsma, G. M. (2020). Improving graduate attributes by implementing an experiential learning teaching approach: A case study in recreation education. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 26, 100214. <https://doi.org/10.1016/j.jhlste.2019.100214>

Scott, G. W., Goulder, R., Wheeler, P., Scott, L. J., Tobin, M. L., & Marsham, S. (2012).

The value of fieldwork in life and environmental sciences in the context of higher education: A case study in learning about biodiversity. *Journal of Science Education and Technology*, 21(1), 11–21.

<https://doi.org/10.1007/s10956-010-9276-x>

Scrutton, R. A. (2014). Outdoor adventure education for children in Scotland:

Quantifying the benefits. *Journal of Adventure Education and Outdoor Learning*, 15(2), 123–137. <https://doi.org/10.1080/14729679.2013.867813>

Serneels, P., & Dercon, S. (2021). Aspirations, poverty, and education. Evidence from India. *The Journal of Development Studies*, 57(1), 163–183.

<https://doi.org/10.1080/00220388.2020.1806242>

Shaffer, D. R., & Kipp, K. (2013). *Developmental psychology: Childhood and adolescence*. Cengage Learning.

Sharma-Brymer, V., & Bland, D. (2016). Bringing nature to schools to promote children's physical activity. *Sports Medicine*, 46(7), 955–962.

<https://doi.org/10.1007/s40279-016-0487-z>

Shooter, W., Sibthorp, J., & Paisley, K. (2009). Outdoor leadership skills: A program perspective. *Journal of Experiential Education*, 32(1), 1–13.

Sivakumar, M., & Sarvalingam, A. (2010). *Human deprivation index: A measure of multidimensional poverty*. Munich University. [https://mpra.ub.uni-](https://mpra.ub.uni-muenchen.de/22337/)

[muenchen.de/22337/](https://mpra.ub.uni-muenchen.de/22337/)

Skills IQ. (2019). *Sport and Recreation Industry Reference Committee 2019 industry skills forecast*.

<https://www.skillsiq.com.au/site/DefaultSite/filesystem/documents/Industry-Skills-Forecasts->

[June2017/2019%20Final%20ISFs/2019%20Industry%20Skills%20Forecast%20Sport%20and%20Recreation%20IRC%20Web.pdf](https://www.skillsiq.com.au/site/DefaultSite/filesystem/documents/Industry-Skills-Forecasts-June2017/2019%20Final%20ISFs/2019%20Industry%20Skills%20Forecast%20Sport%20and%20Recreation%20IRC%20Web.pdf)

- Skinner, E. A., Rickert, N. P., Vollet, J. W., & Kindermann, T. A. (2022). The complex social ecology of academic development: A bioecological framework and illustration examining the collective effects of parents, teachers, and peers on student engagement. *Educational Psychologist*, 1–27.
<https://doi.org/10.1080/00461520.2022.2038603>
- Smith, H. (2021). Leadership theory: From effective to extraordinary. In G. Thomas, J. Dymont, & H. Prince (Eds.), *Outdoor Environmental Education in Higher Education: International Perspectives* (pp. 61–72). Springer.
https://doi.org/10.1007/978-3-030-75980-3_6
- Smith, L. (2011, November). Applying the Bioecological Theory of human development to learning. Enhancing student engagement in online learning. 10th Teaching Matters Annual Conference. Sharing practice, Hobart, Tasmania.
- Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A., Nadal, K. L., & Esquilin, M. (2007). Racial microaggressions in everyday life: implications for clinical practice. *American psychologist*, 62(4), 271.
- Sue, V., & Ritter, L. (2012). *Conducting online surveys* (2nd ed.). SAGE.
<https://doi.org/10.4135/9781506335186>
- Sundnes, K. O. (2014). The transectional structure of society: The basic societal functions. *Scandinavian Journal of Public Health*, 42(14), 36–47.
<https://doi.org/10.1177/1403494813515099>
- Swiderski, M. (1987). *Soft and conceptual skills: The often overlooked components of outdoor leadership [Paper presentation]* The Bradford Papers Annual, Bradford Woods Outdoor Education Center, Indiana University, United States.
- Swiderski, M. J. (1981). *Outdoor leadership competencies identified by outdoor leaders in five western regions* [Doctoral dissertation, University of Oregon].
https://alliance-uoregon.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma99900428833901852&context=L&vid=01ALLIANCE_UO:UO&lang=en&search_scope=Ever

[ything&adaptor=Local%20Search%20Engine&tab=Rollup&query=any,contains,Outdoor%20leadership%20competencies%20identified%20by%20outdoor%20leaders%20in%20five%20western%20regions&offset=0](#)

- Tashakkori, A. (2010). *SAGE Handbook of mixed methods in social & behavioral research* (C. Teddlie, Ed. 2 ed.) <https://doi.org/10.4135/9781506335193>
- Tashakkori, A., Johnson, R. B., & Teddlie, C. (2020). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. SAGE.
- The Department of Land Water and Planning. (n.d.). *Tour operator and activity provider licensing, Australian adventure activities standards, fact sheet, May 2020*. State Government of Victoria.
https://www.forestsandreserves.vic.gov.au/_data/assets/pdf_file/0020/420149/9.AdventureActivityStandards2020.pdf
- The University of Notre Dame Australia. (n.d.). *Bachelor of outdoor recreation*. The University of Notre Dame Australia.
<https://www.notredame.edu.au/programs/fremantle/school-of-health-sciences/undergraduate/bachelor-of-outdoor-recreation>
- Thomas, D. R. (2017). Feedback from research participants: Are member checks useful in qualitative research? *Qualitative research in psychology, 14*(1), 23–41.
- Thomas, G. (2015). Signature pedagogies in outdoor education. *Asia-Pacific Journal of Health, Sport and Physical Education, 6*(2), 113–126.
<https://doi.org/10.1080/18377122.2015.1051264>
- Thomas, G., Dymont, J., & Prince, H. (2021). Preparing outdoor educators to be transformational teachers and leaders. In G. Thomas, J. Dymont, & P. Heather (Eds.), *Outdoor environmental education in higher education* (pp. 1–11). Springer.
- Thomas, G., Grenon, H., Morse, M., Allen-Craig, S., Mangelsdorf, A., & Polley, S. (2019). Threshold concepts for Australian university outdoor education

- programs: Findings from a Delphi research study. *Journal of Outdoor and Environmental Education*, 22(3), 169–186. <https://doi.org/10.1007/s42322-019-00039-1>
- Tight, M. (2019). *Documentary research in the social sciences*. SAGE.
<https://doi.org/10.4135/9781529716559>
- University of South Australia. (n.d.). *Bachelor of outdoor and environmental leadership*. University of South Australia.
<https://study.unisa.edu.au/degrees/bachelor-outdoor-and-environmental-leadership>
- Van den Broeck, L., Demanet, J., & Van Houtte, M. (2020). The forgotten role of teachers in students' educational aspirations. School composition effects and the buffering capacity of teachers' expectations culture. *Teaching and Teacher Education*, 90, 103015. <https://doi.org/10.1016/j.tate.2020.103015>
- Victoria University. (n.d.-a). *Bachelor of outdoor education and environmental science*.
<https://www.vu.edu.au/courses/bachelor-of-outdoor-education-and-environmental-science-sboe>
- Victoria University. (n.d.-b). *Bachelor of outdoor leadership*.
<https://www.vu.edu.au/courses/bachelor-of-outdoor-leadership-sbol>
- Victoria University. (n.d.-c). *SOL2001 river environments 1*.
<https://www.vu.edu.au/units/SOL2001>
- Victorian Curriculum and Assessment Authority. (2011). *Outdoor and environmental studies, Victorian Certificate of Education study design* www.vcaa.vic.edu.au
- Victorian Curriculum and Assessment Authority. (2013a). *AUS VELS Update 1 Oct13*
<http://ausvels.vcaa.vic.edu.au/>
- Victorian Curriculum and Assessment Authority. (2013b). *AusVELS health and physical education 7-10* <http://ausvels.vcaa.vic.edu.au/>
- Victorian Curriculum and Assessment Authority. (2013c). *AusVELS interpersonal development 7-10* <http://ausvels.vcaa.vic.edu.au/>

- Victorian Curriculum and Assessment Authority. (2013d). *AusVELS science 7-10*
<http://ausvels.vcaa.vic.edu.au/>
- Victorian Curriculum and Assessment Authority. (2013e). *The humanities - Geography 7-10* <http://ausvels.vcaa.vic.edu.au/>
- Victorian Curriculum and Assessment Authority. (2016). *Outdoor and environmental studies, study design* www.vcaa.vic.edu.au
- Victorian Institute of Teaching. (n.d.). *Victorian Institute of Teaching, specialist area guidelines*. <https://www.vit.vic.edu.au/>
- Victorian Tertiary Admissions Centre. (n.d.). *Course search - outdoor education*.
<https://delta.vtac.edu.au/CourseSearch/searchguide.htm#slist>
- Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.
- Wagstaff, M., Cashel, C., & Martin, B. (2006, February). Developing your professional portfolio based on eight core competencies [Paper presentation]. Turning Purpose Into Action, National Conference on Outdoor Leadership, Bradford Woods, United States.
- Warner, R. P., Meerts-Brandsma, L., & Rose, J. (2020). Neoliberal ideologies in outdoor adventure education: Barriers to social justice and strategies for change. *Journal of Park and Recreation Administration*, 38(3), 77–92.
<https://doi.org/10.18666/JPra-2019-9609>
- Wattchow, B., & Brown, M. (2011). *A pedagogy of place: Outdoor education for a changing world*. Monash University Publishing.
<https://ebookcentral.proquest.com/lib/monash/detail.action?docID=6978173>.
- Weaver-Hightower, M. B. (2008). An ecology metaphor for educational policy analysis: A call to complexity. *Educational researcher*, 37(3), 153–167.
<https://doi.org/10.3102/0013189X08318050>

- Williams, B. J., Hay, P. J., & Macdonald, D. (2011). The outsourcing of health, sport and physical educational work: A state of play. *Physical Education & Sport Pedagogy*, 16(4), 399–415. <https://doi.org/10.1080/17408989.2011.582492>
- WorkSafe Victoria. (n.d.). *Laws and regulations*. <https://www.worksafe.vic.gov.au/law>
- Wurdinger, S. D., & Carlson, J. A. (2009). *Teaching for experiential learning: Five approaches that work*. R&L Education.
- Yin, R. K. (2014). *Case study research : Design and methods*. SAGE.
- Zechmeister, E. B., & Posavac, E. J. (2003). *Data analysis and interpretation in the behavioral sciences*. Wadsworth Publishing Company.
- Zhao, W. (2020). On the application of Outward Bound training in junior middle school physical education. *Insight-Sports Science*, 2(1).
<https://doi.org/10.18282/iss.v2i1.338>
- Zink, R., & Boyes, M. (2006, 04/01). The nature and scope of outdoor education in New Zealand schools. *Australian Journal of Outdoor Education*, 10.
<https://doi.org/10.1007/BF03400826>
- Zoncita, D. (2021). *Exploring the effect of outdoor education experiences on students' environmental behaviors and servant leadership in public school science education* [Doctoral dissertation, Gonzaga University].
<https://dx.doi.org/10.2139/ssrn.3963738>

Appendices

Appendix A.

Documents Reviewed in Qualitative Documentary Analysis

Format	Document name	Year	Organisation	URL	Accessed
Electronic Document	AAS_Edition2.1_Canoeing+_Kayaking	2006	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	AAS_Edition2.1_Surfing_Sessions	2005	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	AAS_Edition2_Artificial_Climbing_Structures	2005	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	AAS_Edition2_Snorkelling	2005	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	AAS_Food_Sustainability_Logo	n.d..	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	AASLegalAspects_AAS_V3_May 09	2009	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	Abseiling_AAS_V3_1_Aug 10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	Bushwalking_AAS_V3_1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	ChallengeCourse_AAS_V3_1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	FourWheelDrive_AAS_V3_1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	HorseTrail_AAS_V3_1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	MountainBiking_AAS_V3_1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Electronic Document	RecAngling_AAS_V3_1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	RecCaving_AAS_V3_1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	RiverRafting_AAS_V3.1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	Rockclimbing_AAS_V3_1_Aug10	2010	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	SevereWeather_AAS_V1_Nov09	2009	Outdoors Victoria (Outdoor Recreation Centre)	https://outdoorsvictoria.org.au/aas-list-of-standards/	25/05/2013
Electronic Document	AUS VELS Update 1 Oct13	2013	Victorian Curriculum and Assessment Authority	http://ausvels.vcaa.vic.edu.au/	4/10/2013
Electronic Document	AusVELS Health and Physical Education 7–10	2013	Victorian Curriculum and Assessment Authority	http://ausvels.vcaa.vic.edu.au/	19/09/2013
Electronic Document	AusVELS Interpersonal Development 7–10	2013	Victorian Curriculum and Assessment Authority	http://ausvels.vcaa.vic.edu.au/	19/09/2013
Electronic Document	AusVELS Personal Learning 7–10	2013	Victorian Curriculum and Assessment Authority	http://ausvels.vcaa.vic.edu.au/	19/09/2013
Electronic Document	AusVELS Science 7–10	2013	Victorian Curriculum and Assessment Authority	http://ausvels.vcaa.vic.edu.au/	19/09/2013
Electronic Document	AusVELS The Humanities—Geography 7–10	2013	Victorian Curriculum and Assessment Authority	http://ausvels.vcaa.vic.edu.au/	19/09/2013
Electronic Document	AusVELS Thinking Processes 7–10	2013	Victorian Curriculum and Assessment Authority	http://ausvels.vcaa.vic.edu.au/	19/09/2013
Electronic Document	NOLRS—SIS10 Core Units_Cert III and Cert IV	n.d.	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	2/08/2013
Electronic Document	NOLRS Abseiling Checklists	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013

Format	Document name	Year	Organisation	URL	Accessed
Electronic Document	NOLRS Bushwalking Checklists	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Canoeing Checklists	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Canyoning Checklists	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Caving Checklist	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Challenge Ropes Course Checklist	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Climbing Checklist	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Cycle Touring Checklist	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Kayaking Checklist	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Mountain Biking Checklists	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Sea Kayaking Checklist	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Snorkelling Checklist	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	24/09/2013
Electronic Document	NOLRS Outdoor Leader Generic Skills 060613	2013	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	2/08/2013
Electronic Document	NOLRS_Registration_Logbook_Requirements_Summary 020813	n.d.	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	2/08/2013
Electronic Document	Bushwalking Instructor (Difficult and Trackless Areas)	2012	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	25/09/2013

Format	Document name	Year	Organisation	URL	Accessed
Electronic Document	Bushwalking_Instructor_(Unmodified_Areas)_2012	2012	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	25/09/2013
Electronic Document	Challenge_Ropes_Course_(High)_-_Manager_2012	2012	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	25/09/2013
Electronic Document	Challenge_Ropes_Course_(Low)_-_Manager_2012	2012	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	25/09/2013
Electronic Document	Climbing_(Artificial)_Single_Pitch_Guide_2012	2012	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	25/09/2013
Electronic Document	On-Road Cycle Tour Guide (Overnight and Extended Tours)	2012	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	25/09/2013
Electronic Document	RaftingRegistrationlevels&assessmentMar2011	2011	Outdoor Council of Australia	http://www.outdoorcouncil.asn.au/nolrs/	25/09/2013
Electronic Document	SIS10 Version 2.0 Activity Groups	25/09/2013	Commonwealth of Australia	https://training.gov.au/Home/Tga	26/09/2013
Electronic Document	SIS10_Version_2_0_Skill_Sets	26/09/2013	Commonwealth of Australia	https://training.gov.au/Home/Tga	26/09/2013
Web Page	OEA—Guidelines for R–12 Outdoor Education curriculum	12/08/2013	Outdoor Education Australia	http://www.outdooreducationaustralia.org.au/curric.html	12/08/2013
Web Page	OEA~ Guidelines for Teaching Outdoor Education in Schools	13/08/2013	Outdoor Education Australia	http://www.outdooreducationaustralia.org.au/guidelines.html	2/08/2013
Web Page	Abseiling	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorabseil.aspx	28/05/2013
Web Page	Abseiling—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorabseilact.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Abseiling—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorabseilrisk.aspx	28/05/2013
Web Page	Abseiling—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorabseildef.aspx	28/05/2013
Web Page	Abseiling—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorabseilenvir.aspx	28/05/2013
Web Page	Abseiling—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorabseilpeople.aspx	28/05/2013
Web Page	Abseiling—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorabseilresources.aspx	28/05/2013
Web Page	Artificial Climbing and Abseiling	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimb.aspx	28/05/2013
Web Page	Artificial Climbing and Abseiling Walls—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbact.aspx	28/05/2013
Web Page	Artificial Climbing and Abseiling Walls—Common risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbrisk.aspx	28/05/2013
Web Page	Artificial Climbing and Abseiling Walls—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbdef.aspx	28/05/2013
Web Page	Artificial Climbing and Abseiling Walls—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbenvir.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Artificial Climbing and Abseiling Walls—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbpeople.aspx	28/05/2013
Web Page	Artificial Climbing and Abseiling Walls—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbres.aspx	28/05/2013
Web Page	Bushwalking	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwalk.aspx	28/05/2013
Web Page	Bushwalking—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwalkact.aspx	28/05/2013
Web Page	Bushwalking—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwalkdef.aspx	28/05/2013
Web Page	Bushwalking—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwalkenvir.aspx	28/05/2013
Web Page	Bushwalking—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwalkpeople.aspx	28/05/2013
Web Page	Bushwalking—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwalkres.aspx	28/05/2013
Web Page	Canoe and Kayak—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcanoeact.aspx	28/05/2013
Web Page	Canoeing and Kayaking	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcanoe.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Canoeing and Kayaking— Common Risks	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcanoerisk.aspx	28/05/2013
Web Page	Canoeing and Kayaking— Definitions	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcanoedef.aspx	28/05/2013
Web Page	Canoeing and Kayaking— Environment	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcanoeeenvir.aspx	28/05/2013
Web Page	Canoeing and Kayaking— People	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcanoeppeople.aspx	28/05/2013
Web Page	Canoeing and Kayaking— Resources	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcanoeresources.aspx	28/05/2013
Web Page	Challenge Rope Courses— Common Risks	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorroperisk.aspx	28/05/2013
Web Page	Challenge Rope Courses— People	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorropepeople.aspx	28/05/2013
Web Page	Challenge Rope Courses— Resources	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorroperes.aspx	28/05/2013
Web Page	Challenge Ropes Courses	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorrope.aspx	28/05/2013
Web Page	Challenge Ropes Courses—Activity	28/05/ 2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorropeact.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Challenge Ropes Courses—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorropedef.aspx	28/05/2013
Web Page	Challenge Ropes Courses—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorropeenvir.aspx	28/05/2013
Web Page	Cross Country Skiing	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskicountry.aspx	28/05/2013
Web Page	Cross Country Skiing—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskicountryact.aspx	28/05/2013
Web Page	Cross Country Skiing—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskicountryrisk.aspx	28/05/2013
Web Page	Cross Country Skiing—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskicountrydef.aspx	28/05/2013
Web Page	Cross Country Skiing—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskicountryenvir.aspx	28/05/2013
Web Page	Cross Country Skiing—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskicountrypeople.aspx	28/05/2013
Web Page	Cross Country Skiing—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskicountryres.aspx	28/05/2013
Web Page	Cycling	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcycle.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Cycling—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcycleact.aspx	28/05/2013
Web Page	Cycling—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcyclerk.aspx	28/05/2013
Web Page	Cycling—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcycledef.aspx	28/05/2013
Web Page	Cycling—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcycleenvir.aspx	28/05/2013
Web Page	Cycling—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcyclepeople.aspx	28/05/2013
Web Page	Cycling—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcycleres.aspx	28/05/2013
Web Page	About Downhill Skiing and Snowboarding	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskidown.aspx	28/05/2013
Web Page	Downhill Skiing and Snowboarding—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskidownact.aspx	28/05/2013
Web Page	Downhill Skiing and Snowboarding—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskidownrisk.aspx	28/05/2013
Web Page	Downhill Skiing and Snowboarding—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskidownenvir.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Downhill Skiing and Snowboarding—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskidownpeople.aspx	28/05/2013
Web Page	Downhill Skiing and Snowboarding—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorskidownres.aspx	28/05/2013
Web Page	Horse Riding	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorride.aspx	28/05/2013
Web Page	Horse Riding—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorrideact.aspx	28/05/2013
Web Page	Horse Riding—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorriderisk.aspx	28/05/2013
Web Page	Horse Riding—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorrideenvi.r.aspx	28/05/2013
Web Page	Horse Riding—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorridepeople.aspx	28/05/2013
Web Page	Horse Riding—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorrideres.aspx	28/05/2013
Web Page	Orienteering	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoororient.a.spx	28/05/2013
Web Page	Orienteering—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoororientact.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Orienteering—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoororientrisk.aspx	28/05/2013
Web Page	Orienteering—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoororientenvir.aspx	28/05/2013
Web Page	Orienteering—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoororientpeople.aspx	28/05/2013
Web Page	Orienteering—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoororientresources.aspx	28/05/2013
Web Page	Camping	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcamp.aspx	28/05/2013
Web Page	Camping—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcampactivity.aspx	28/05/2013
Web Page	Camping—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcamprisk.aspx	28/05/2013
Web Page	Camping—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcampdefinition.aspx	28/05/2013
Web Page	Camping—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcampenvir.aspx	28/05/2013
Web Page	Camping—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcamppeople.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Camping—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorcampres.aspx	28/05/2013
Web Page	Rafting	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorraft.aspx	28/05/2013
Web Page	Rafting—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorraftact.aspx	28/05/2013
Web Page	Rafting—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorraftrisk.aspx	28/05/2013
Web Page	Rafting—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorraftdef.aspx	28/05/2013
Web Page	Rafting—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorraftenvir.aspx	28/05/2013
Web Page	Rafting—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorraftpeople.aspx	28/05/2013
Web Page	Rafting—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorraftres.aspx	28/05/2013
Web Page	Recreational Swimming	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorswim.aspx	28/05/2013
Web Page	Recreational Swimming—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorswimact.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Recreational Swimming—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorswimrisk.aspx	28/05/2013
Web Page	Recreational Swimming—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorswimdef.aspx	28/05/2013
Web Page	Recreational Swimming—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorswimenvir.aspx	28/05/2013
Web Page	Recreational Swimming—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorswimpeople.aspx	28/05/2013
Web Page	Recreational Swimming—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorswimres.aspx	28/05/2013
Web Page	Rock Climbing	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbrock.aspx	28/05/2013
Web Page	Rock Climbing—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbrockact.aspx	28/05/2013
Web Page	Rock Climbing—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbrockrisk.aspx	28/05/2013
Web Page	Rock Climbing—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbrockdef.aspx	28/05/2013
Web Page	Rock Climbing—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbrockenvir.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Rock Climbing—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbrockpeople.aspx	28/05/2013
Web Page	Rock Climbing—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorclimbrockres.aspx	28/05/2013
Web Page	Activities	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdooractivity.aspx	28/05/2013
Web Page	Sailing	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsail.aspx	28/05/2013
Web Page	Sailing—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsailact.aspx	28/05/2013
Web Page	Sailing—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsailrisk.aspx	28/05/2013
Web Page	Sailing—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsailenvir.aspx	28/05/2013
Web Page	Sailing—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsailpeople.aspx	28/05/2013
Web Page	Sailing—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsailres.aspx	28/05/2013
Web Page	Scuba Diving	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorscuba.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Scuba Diving—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorscubaact.aspx	28/05/2013
Web Page	Scuba Diving—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorscubarisks.aspx	28/05/2013
Web Page	Scuba Diving—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorscubadef.aspx	28/05/2013
Web Page	Scuba Diving—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorscubaenvironment.aspx	28/05/2013
Web Page	Scuba Diving—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorscubapeople.aspx	28/05/2013
Web Page	Scuba Diving—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorscubaresources.aspx	28/05/2013
Web Page	Sea Kayaking	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorkayak.aspx	28/05/2013
Web Page	Sea Kayaking—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorkayakactivity.aspx	28/05/2013
Web Page	Sea Kayaking—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorkayakrisks.aspx	28/05/2013
Web Page	Sea Kayaking—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorkayakdefinitions.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Sea Kayaking—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorkayakenvir.aspx	28/05/2013
Web Page	Sea Kayaking—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorkayakpeople.aspx	28/05/2013
Web Page	Sea Kayaking—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorkayakresources.aspx	28/05/2013
Web Page	Snorkelling	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsnorkel.aspx	28/05/2013
Web Page	Snorkelling—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsnorkelact.aspx	28/05/2013
Web Page	Snorkelling—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsnorkelrisk.aspx	28/05/2013
Web Page	Snorkelling—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsnorkeldef.aspx	28/05/2013
Web Page	Snorkelling—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsnorkelenvir.aspx	28/05/2013
Web Page	Snorkelling—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsnorkelpeople.aspx	28/05/2013
Web Page	Snorkelling—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsnorkelresources.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Surfing	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsurf.aspx	28/05/2013
Web Page	Surfing—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsurfrisk.aspx	28/05/2013
Web Page	Surfing—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsurfdef.aspx	28/05/2013
Web Page	Surfing—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsurfenvi.r.aspx	28/05/2013
Web Page	Surfing—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsurfpeople.aspx	28/05/2013
Web Page	Surfing- Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsurfact.aspx	28/05/2013
Web Page	Surfing- Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorsurfres.aspx	28/05/2013
Web Page	Water Skiing	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwaterski.aspx	28/05/2013
Web Page	Water Skiing—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwaterskiact.aspx	28/05/2013
Web Page	Water Skiing—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwaterskirisks.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Water Skiing—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwaterskienvir.aspx	28/05/2013
Web Page	Water Skiing—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwaterskipeople.aspx	28/05/2013
Web Page	Water Skiing—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwaterskires.aspx	28/05/2013
Web Page	Windsurfing	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwindsurf.aspx	28/05/2013
Web Page	Windsurfing—Activity	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwindsurfact.aspx	28/05/2013
Web Page	Windsurfing—Common Risks	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwindsurfrisk.aspx	28/05/2013
Web Page	Windsurfing—Definitions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwindsurfdef.aspx	28/05/2013
Web Page	Windsurfing—Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwindsurfenvir.aspx	28/05/2013
Web Page	Windsurfing—People	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwindsurfpeople.aspx	28/05/2013
Web Page	Windsurfing—Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorwindsurfres.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Critical Incidents	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/studentsafety.aspx	28/05/2013
Web Page	Environment	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorenvironment.aspx	28/05/2013
Web Page	Forms	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorforms.aspx	28/05/2013
Web Page	Planning	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorplan.aspx	28/05/2013
Web Page	Approval Process	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorplanapproved.aspx	28/05/2013
Web Page	Planning Questions	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorplanquestion.aspx	28/05/2013
Web Page	Planning Summary	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorplansummary.aspx	28/05/2013
Web Page	Guide References	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorreferences.aspx	28/05/2013
Web Page	How to Use These Guidelines	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorhowto.aspx	28/05/2013
Web Page	Processes and Management—Emergency Management	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorreemergency.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Safety Guidelines for Education Outdoors	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorlinks.aspx	28/05/2013
Web Page	Resources	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorres.aspx	28/05/2013
Web Page	Risk Management	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorrisk.aspx	28/05/2013
Web Page	External Provider	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorroleprovider.aspx	28/05/2013
Web Page	Parents/Guardians	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorroleparents.aspx	28/05/2013
Web Page	Principals	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorroleprincipal.aspx	28/05/2013
Web Page	Students	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorrolestudent.aspx	28/05/2013
Web Page	Teachers	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorroleteacher.aspx	28/05/2013
Web Page	Roles and Responsibilities	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/outdoorrole.aspx	28/05/2013
Web Page	Safety Guidelines for Education Outdoors—Main Page	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/pages/outdoor.aspx	28/05/2013

Format	Document name	Year	Organisation	URL	Accessed
Web Page	Student Transport	28/05/2013	Department of Education and Early Childhood Development	http://www.education.vic.gov.au/school/principals/safety/Pages/transport.aspx	28/05/2013
Electronic Document	Victorian Institute of teaching specialist area guidelines	2012	Victorian Institute of Teaching	https://www.vit.vic.edu.au/media/documents/Specialist_Area_Guidelines_2012.pdf	29/05/2013
Electronic Document	Licensing System for Tour Operators and Activity Providers on Public Land in Victoria—Policy Statement	2008	The State of Victoria Department of Sustainability and Environment	www.dse.vic.gov.au	12/08/2013
Web Page	Parks Victoria—Licensed tour operators Main Page	12/08/2013	Parks Victoria	http://parkweb.vic.gov.au/park-management/applications,-licences-and-permits/licensed-tour-operators	12/08/2013
Electronic Document	Tour Operator_2013_2014_application_form	2013	Parks Victoria	http://parkweb.vic.gov.au/park-management/applications,-licences-and-permits/licensed-tour-operators	12/08/2013

Appendix B.

Interview Guide, Senior Outdoor Industry Member

Introduce self and background
Check Recorder

Section A—Senior Outdoor Industry member experience and industry background

- How did you become involved in the outdoor education sector?
- What roles have you undertaken during your time in the sector (employed and volunteer)
- From your perspective what is the difference between outdoor education and other outdoor based experiences?

4.

Section B—Historical Context of outdoor education

- Please describe your earliest memory of an outdoor education experience you were involved in.
- Please explain how outdoor education has changed since your early memory.
- What are your thoughts on whether the knowledge and skill needed of outdoor educators has changed since your early memories?

5.

Section C—What knowledge and skill does an outdoor educator require?

- Please explain the knowledge and skills required of outdoor educators.
- Please describe the knowledge and skills required of outdoor leaders.
- In your opinion what determines what outdoor educators teach? Is it parents, the sector, schools, society.

6.

Section D—What field experience does an outdoor educator require?

- In your opinion what role does field experience play in the development of outdoor education leadership knowledge and skills?

- Please explain if there are any limitations of practical field experience in the development of outdoor education leadership knowledge and skills.
- How much field experience does an outdoor educator need?

Section D—Identification of standards, policies, legislation, or schemes relating to outdoor education.

- From your understanding what standards, policies, legislation, or schemes are outdoor educators required and/or recommended to adhere to?

Appendix C.

Interview Guide, Outdoor Industry Managers

Introduce self
Check Recorder

Section A—Outdoor industry managers experience and industry background

- How did you become involved in the outdoor education sector?
(What roles since)
- From your perspective what is the difference between outdoor education and other outdoor based experiences?

Section B—Organisational Context of outdoor education

- Please tell me about your organisation
- Please explain your current and previous roles at this organisation
- Please tell me about the type of outdoor experiences your leaders provide. Recreation, outdoor education, environ education, leisure, physical education etc.

Section C—What knowledge and skill does an outdoor educator require?

- Please explain the knowledge and skills required of outdoor educators.
- Please describe the knowledge and skills required of outdoor leaders.
- In your opinion what determines what outdoor educators teach? Is it parents, the sector, schools, society.

Section D—What field experience does an outdoor educator require

- In your opinion what role does field experience play in the development of outdoor education leadership knowledge and skills?
- Please explain if there are any limitations of practical field experience in the development of outdoor education leadership knowledge and skills.
- How much field experience does an outdoor educator need?

Section E—Identification of qualifications, standards, policies, legislation or schemes relating to outdoor education

- From your understanding what standards, policies, legislation, or schemes are outdoor educators required and/or recommended to adhere to?
- Please outline the qualifications, registrations, or licences, you require your outdoor education staff to have for employment.
- Please explain what qualifications (and associated knowledge and skill) an outdoor educator would ideally have.

Appendix D.

Email to Peak Body Contacts and Outdoor Organisations

Hi NAME,

Thank you for offering to contact potential research participants. As discussed, there are two primary groups of research participants

Group 1—Those who have been involved in outdoor education for 20 years or more and held positions on industry groups relating to the outdoor education sector (groups such as the VOEA, OCA, ACA etc. (Three people in total) and;

Group 2—Those currently employed in the outdoor education sector for 5 years or more and have a staff management responsibility (Program managers, Operations Managers, Human Resource Managers, Organisation Managers, Business Owners). This group is slightly more complex as we are seeking a cross section also by outdoor experience provision type— one person from a journey-based organisation, one from a residential campsite, one from predominantly day-based experiences (Three people in total).

Please feel free to use the following text or your own in the email:

“David Marsden from Victoria University is seeking people involved in the outdoor education sector in Victoria to participate in a research study. The study is investigating **“the role of practical field experience in the development of HE outdoor education leadership graduates’ knowledge and skill in Victoria, Australia”**. He is seeking two groups of people; 1) those who have been involved in outdoor education for 20 years or more and held positions on industry groups relating to the outdoor education sector and 2) people currently employed in the outdoor education sector for 5 years or more and have a staff management responsibility (Program managers, Operations Managers, Human Resource Managers, Organisation Managers, Business Owners).

Participation will involve one interview at a date and location of their preference. For more information a detailed outline of the research study and a participant consent form are attached.

This is a great opportunity to get involved in industry relevant research with potential application across the outdoor leadership education and training area. If you are interested in being involved, please send David an email on david.marsden2@vu.edu.au.”

Cheers

Dave Marsden
PhD Candidate
Victoria University

Appendix E.

Participant Cover Letter, Senior Outdoor Educators



David Marsden
Outdoor Education and Recreation

Footscray Park Campus
School of Sport and Exercise Science
PO BOX 14428 MELBOURNE
VICTORIA 8001 AUSTRALIA
MOB 0435 966 989
www.vu.edu.au

Date

Insert Name and address

Dear John,

Further to a conversation with fromI was advised to approach you regarding your potential participation in a research study investigating *'the role of practical field experience in the development of higher education outdoor education leadership graduates knowledge and skill in Victoria, Australia'*. We are seeking participants for the study who have been involved in outdoor education for at least 20 years, can provide historical knowledge of outdoor education in Victoria, and have previous or current participation with peak bodies related to the outdoor education sector.

The research will focus on three aspects. First, identify the range of knowledge and skill required to be an effective outdoor education leader. Second, explore the association between the knowledge, skill and practical field experience of outdoor education leaders from theoretical, industry and education perspectives. Finally, compare the duration, frequency and content of practical field experience requirements across a sample of higher education outdoor education programs.

You are being asked to participate in the study in three ways i) an **interview** to talk about the knowledge, skill and practical experience required of outdoor education leaders, ii) the provision of **documents** which contain insight into the knowledge, skill and practical experience required of outdoor education leaders, iii) then to **review** the transcript of the interview and make any amendments or additions you deem as necessary.

Please refer to the attached 'Information to Participants Involved in Research' and the 'Consent Form For Participants Involved in Reserarch' for further detail regarding the research. Your total participation time for the research will be approximately one hour for the interview, half an hour for document review and collection, and half an hour to review the interview transcript. The researcher can either visit you at a venue of your request, or at a campus of Victoria University.

If you are interested in being involved or have any questions you can contact me via david.marsden2@vu.edu.au, or mob: #####.

Cheers,

David Marsden
PhD Candidate
Outdoor Education and Recreation

Appendix F.

Participant Cover Letter, Manager Outdoor Education



David Marsden
Lecturer
Outdoor Education and Recreation

Footscray Park Campus
School of Sport and Exercise Science
PO BOX 14428 MELBOURNE
VICTORIA 8001 AUSTRALIA
MOB 0435 966 989
www.vu.edu.au

Date

Insert Name and address

Dear John,

Further to a conversation with fromI was advised to approach you regarding your potential participation in a research study investigating *'the role of practical field experience in the development of higher education outdoor education leadership graduates knowledge and skill in Victoria, Australia'*. We are seeking participants for the study who have been involved in outdoor education for at least 5 years working for organisations with a client base of at least 70 percent schools, and are employed in a management role in which staff selection, coordination, and training is a significant component of their role. Participants will also be sought from a spectrum of outdoor education organisations representing differing experiences including, residential campsites, day experiences, and multi day journeys.

Outdoor Education Sector Managers working for organisations / businesses in Victoria, Australia, with a client base of at least 70 percent schools, with 5 years plus experience

The research will focus on three aspects. First, identify the range of knowledge and skill required to be an effective outdoor education leader. Second, explore the association between the knowledge, skill and practical field experience of outdoor education leaders from theoretical, industry and education perspectives. Finally, compare the duration, frequency and content of practical field experience requirements across a sample of higher education outdoor education programs.

You are being asked to participate in the study in three ways i) an **interview** to talk about the knowledge, skill and practical experience required of outdoor education leaders, ii) the provision of **documents** which contain insight into the knowledge, skill and practical experience required of outdoor education leaders, iii) then to **review** the transcript of the interview and make any amendments or additions you deem as necessary.

Please refer to the attached 'Information to Participants Involved in Research' and the 'Consent Form For Participants Involved in Research' for further detail regarding the research. Your total participation time for the will be approximately one hour for the interview, half an hour for document review and collection, and half an hour to review the interview transcript. The researcher can either visit you at a venue of your request, or at a campus of Victoria University.

If you are interested in being involved or have any questions you can contact me via david.marsden2@vu.edu.au, or mob: #####.

Cheers,

David Marsden
PhD Candidate
Outdoor Education and Recreation

Appendix G.

Participant Cover Letter, Senior Outdoor Educators



David Marsden
Outdoor Education and Recreation

Footscray Park Campus
School of Sport and Exercise Science
PO BOX 14428 MELBOURNE
VICTORIA 8001 AUSTRALIA
MOB 0435 966 989
www.vu.edu.au

Date

Insert Name and address

Dear John,

Further to a conversation with fromI was advised to approach you regarding your potential participation in a research study investigating *'the role of practical field experience in the development of higher education outdoor education leadership graduates knowledge and skill in Victoria, Australia'*. We are seeking participants for the study who have been involved in outdoor education for at least 20 years, can provide historical knowledge of outdoor education in Victoria, and have previous or current participation with peak bodies related to the outdoor education sector.

The research will focus on three aspects. First, identify the range of knowledge and skill required to be an effective outdoor education leader. Second, explore the association between the knowledge, skill and practical field experience of outdoor education leaders from theoretical, industry and education perspectives. Finally, compare the duration, frequency and content of practical field experience requirements across a sample of higher education outdoor education programs.

You are being asked to participate in the study in three ways i) an **interview** to talk about the knowledge, skill and practical experience required of outdoor education leaders, ii) the provision of **documents** which contain insight into the knowledge, skill and practical experience required of outdoor education leaders, iii) then to **review** the transcript of the interview and make any amendments or additions you deem as necessary.

Please refer to the attached 'Information to Participants Involved in Research' and the 'Consent Form For Participants Involved in Reserarch' for further detail regarding the research. Your total participation time for the research will be approximately one hour for the interview, half an hour for document review and collection, and half an hour to review the interview transcript. The researcher can either visit you at a venue of your request, or at a campus of Victoria University.

If you are interested in being involved or have any questions you can contact me via david.marsden2@vu.edu.au, or mob: #####.

Cheers,

David Marsden
PhD Candidate
Outdoor Education and Recreation

Appendix H.

Group 2 Cover Letter, Manager Outdoor Education ACA



David Marsden
Lecturer
Outdoor Education and Recreation

Footscray Park Campus
School of Sport and Exercise Science
PO BOX 14428 MELBOURNE
VICTORIA 8001 AUSTRALIA
MOB 0435 966 989
www.vu.edu.au

Tuesday, 24 September 2013

Dear Sir/Madam

David Petherick from the Australian Camps Association is approaching you on our research team's behalf to seek your participation in a study investigating *'the role of practical field experience in the development of higher education outdoor education leadership graduates knowledge and skill in Victoria, Australia'*. We are seeking participants for the study who have been involved in outdoor education for at least 20 years, can provide historical knowledge of outdoor education in Victoria, and have previous or current participation with peak bodies related to the outdoor education sector.

The research will focus on three aspects. First, identify the range of knowledge and skill required to be an effective outdoor education leader. Second, explore the association between the knowledge, skill and practical field experience of outdoor education leaders from theoretical, industry and education perspectives. Finally, compare the duration, frequency and content of practical field experience requirements across a sample of higher education outdoor education programs.

You are being asked to participate in the study in three ways i) an **interview** to talk about the knowledge, skill and practical experience required of outdoor education leaders, ii) the provision of **documents** which contain insight into the knowledge, skill and practical experience required of outdoor education leaders, iii) then to **review** the transcript of the interview and make any amendments or additions you deem as necessary.

Please refer to the attached 'Information to Participants Involved in Research' and the 'Consent Form For Participants Involved in Research' for further detail regarding the research. Your total participation time for the research will be approximately one hour for the interview, half an hour for document review and collection, and half an hour to review the interview transcript. The researcher can either visit you at a venue of your request, or at a campus of Victoria University.

If you are interested in being involved or have any questions you can contact me via david.marsden2@vu.edu.au, or mob: 0435 966 989.

Cheers,

A handwritten signature in black ink, appearing to read "David Marsden".

David Marsden
Lecturer
Outdoor Education and Recreation

Appendix I.

Information to Participants Involved in Research, Semistructured Interviews



INFORMATION TO PARTICIPANTS INVOLVED IN RESEARCH

You are invited to participate

You are invited to participate in a research project entitled:

The role of practical field experience in the development of higher education outdoor education leadership graduates knowledge and skill in Victoria, Australia

This project is being conducted by a student researcher David Marsden, as part of a Masters by Research at Victoria University, under the supervision of Dr Peter Burrridge, College of Education, and Dr Clare Hanlon, College of Sport and Exercise Science

Project explanation

The aim of this research is to explore the role of practical field experience in the development of higher education (HE) outdoor education leadership graduates knowledge and skill. The research will focus on three aspects. First, identify the range of knowledge and skill required to be an effective outdoor education leader. Second, explore the association between the knowledge, skill and practical field experience of outdoor education leaders from theoretical, industry and education perspectives. Finally, compare the duration, frequency and content of practical field experience requirements across a sample of HE outdoor education programs.

What will I be asked to do?

You will be asked to participate in the study in three distinct ways:

1. Participate in an **interview** to talk about the knowledge, skill and practical experience required of outdoor education leaders. This interview will include your own participation in outdoor education, the historical and current contexts of outdoor education in Australia, and your perceptions of the knowledge, skill and practical experience required of outdoor education leaders today.
2. Be invited to provide **documents** which contain insight into the knowledge, skill and practical experience required of outdoor education leaders. These documents could include, position descriptions, operations manuals, external accreditation requirements, and advertising material.
3. **Review** the transcript of the interview and make any amendments or additions you deem as necessary.

What will I gain from participating?

You will have the opportunity to discuss your experiences and thoughts about the knowledge, skill and practical experience required of outdoor education leaders. Your opinion is valued by the researchers and you will have the satisfaction that you have helped increase our understanding outdoor education leadership.

How will the information I give be used?

All the information collected during the study will be used to identify the knowledge, skill and practical experience required of outdoor education leaders. Factors within our society and community that influence the development of knowledge and skill will also be identified. These findings may be used to inform the development of outdoor education leadership courses as well as industry regarding the requirements of outdoor education leaders.

What are the potential risks of participating in this project?

There is a small risk that even with the allocation of pseudonyms and the de identification of data you or your associated organisation may be identifiable by people who know the outdoor education industry well. However be assured that the data collected from interviews and documents will be kept confidential and will not be connected with your name or organisations name in any way. This research is focused on the knowledge, skill and practical experience required of outdoor education leaders and is not linked to the products, services or procedures of outdoor education organisations.

How will this project be conducted?

Information will be collected through a one on one interview, and the simultaneous collection of supporting documents. The interviews will take approximately one hour. The document collection will require approximately 30 minutes

Who is conducting the study?

Dr Peter Burridge
Chief Investigator/Supervisor
 College of Education
 Victoria University
 St Albans Campus, Bld 8.125
 phone: 03 9919 2810
 mob: +61 400 756 341
peter.burridge@vu.edu.au

Dr Clare Hanlon
Associate investigator/Supervisor
 College of Sport and Exercise Science
 Research Associate, Institute of Sport, Exercise
 and Active Living
 Victoria University
 PO Box 14428
 Melbourne VIC 8001 Australia
 phone:61 3 9919 4383
clare.hanlon@vu.edu.au

David Marsden
Student Investigator
 Victoria University Footscray Park Campus
 College of Sport and Exercise Science
 P.O Box 14428, Melbourne City MC
 VIC 8001, Australia
 mob: 0435 966 989
david.marsden2@vu.edu.au

Any queries about your participation in this project may be directed to the Chief Investigator listed above. If you have any queries or complaints about the way you have been treated, you may contact the Research Ethics and Biosafety Manager, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4148.

Appendix J.

Consent Form for Participants Involved in Research



CONSENT FORM FOR PARTICIPANTS INVOLVED IN RESEARCH

INFORMATION TO PARTICIPANTS:

We would like to invite you to be a part of a study titled:

The role of practical field experience in the development of higher education outdoor education leadership graduate’s knowledge and skills in Victoria, Australia

The aim of the research is:

- To explore the role of practical field experience in the development of higher education outdoor education leadership graduates knowledge and skill.

The objectives of the study are to;

- Identify the range of knowledge and skill required by higher education outdoor education leadership graduates entering the outdoor education sector.
- Explore the relationship between higher education practical field experience and the development of the knowledge and skills of outdoor education leadership by higher education students.
- Develop guidelines that will inform higher education outdoor education leadership course development.

CERTIFICATION BY SUBJECT ----- I,**participant’s name**

certify that I am at least 18 years old and that I am voluntarily giving my consent to participate in the study: The role of practical field experience in the development of higher education outdoor education leadership graduates knowledge and skill in Victoria, Australia....being conducted at Victoria University by: David Marsden.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Dr. Peter Burrige, and that I freely consent to participate in the below mentioned procedures for data collection:

Tool	Time Commitment
Interview and documentary analysis source collection September/October 2013	Approximately 1 hour for the interview and 20 minutes to provide copies of documents
Review of interview transcripts October/November 2013	Approximately 30 mins to check transcript of interview for accuracy

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this study at any time and that this withdrawal will not jeopardise me in any way. I have been informed that the information I provide will be kept confidential and should the need arise I will have access to a Victoria University Counsellor

Signed:

Date:

Any queries about your participation in this project may be directed to the researcher, David Marsden
Phone 0435 966 989

If you have any queries or complaints about the way you have been treated, you may contact the Research Ethics and Biosafety Manager, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4148.

Appendix K.

Peak Bodies and Online Outdoor Education Networks and Outdoor Forums Contacted Regarding Online Questionnaire

National and State Peak Bodies Contacted.

National body	State contact/body	Number of email contacts
Outdoor Education Australia	Outdoor Ed state contacts	
	ACT	
	SA	
	Qld	
	NSW	
	WA	
	TAS	
	VIC	
Outdoor Industry Bodies		
	Outdoor Recreation Industry Council (NSW)	456
	Outdoors Victoria	800
	Outdoors Western Australia	533
	Queensland Outdoor Recreation Federation	963
	Recreation South Australia	500
	Outdoors South Australia	680
	NO TASMANIA	
	NO ACT	
	NO NT	
Australian Camping Association		1577
Outdoor Council of Australia		
Christian Venues Association		5509
	Estimate of email sent	11018

Online Networks and Forums.

Online network/forum	Number of members
AUSOEL	70
Benefits of O. Ed	814
Adventure Types	805
VU OREC ALUMNI	24
Aussie Freelance Outdoor Instructors	2217
BOFF	1622
Gear Freak	1965
The Mob	606
Vic Uni Gear Sales & Freelance Work	202
2012 VIC UNI Outdoor Rec/Ed Enrolment Year	37
The OEG Field Staff Group	112
2013 VIC UNI Outdoor Rec	52
2015 VIC UNI Outdoor Rec/Ed Enrolment Year	66
Guides and Instructors for white water	196
Support Outdoor Education	465
Albury Wodonga Outdoor Freelance Forum (AWOFF)	458
Outdoor Activity Instructors Worldwide	4700
Wollangarra Outdoor Education Centre	551
Outdoor Education Tasmania	88
NZ Freelance Instructors	203
	15253

Appendix L.

State Networks Cover Letter the Australian National Outdoor Education Leadership Survey



David Marsden
Outdoor Education, Recreation and Adventure Sports
College of Sport and Exercise Science

Footscray Park Campus
PO BOX 14428 MELBOURNE
VICTORIA 8001 AUSTRALIA
MOB 0435 966 989
www.vu.edu.au

Date

Insert Name and address

Dear John,

RE: The Australian National Outdoor Education Leadership Survey

Through my Victorian state based contacts I have been advised to approach your organisation seeking support in distributing the Australian National Outdoor Education Leadership Survey within your state. The online survey is the first national phase of a research study aiming to identify the knowledge, skill and practical experience required of outdoor education leaders in Australia.

The research has already successfully identified a range of knowledge, skill and practical experience through the Victorian focused phases and it is now vital to test these findings in a national context. The survey is targeted at outdoor professionals from organisations that provide services to schools. This may range from residential campsites, to outdoor adventure providers, international expeditions, and outdoor education providers.

For the national survey to be successful I need to contact as many people in the outdoor sector in each state/territory as possible. It is my belief that the best way to achieve this is through your networks and already established newsletters and websites. Therefore would it be possible for you to:

- Send the attached email to your mailing list
- Put a banner link on your website
- Post a link on your social media sites (facebook, twitter)

I have attached more detailed information regarding the study as well as some basic marketing materials for you to use if needed.

The survey is simple to complete, completely anonymous and has been granted ethics approval (HRE 15-049).

I will give you and your organisation a call in the next few days. If you have any questions you can contact me via david.marsden2@vu.edu.au, or mob: 0435 966 989

Cheers,

David Marsden
PhD Candidate
Outdoor Education, Recreation and Adventure Sports
College of Sport and Exercise Science
Institute of Sport, Exercise and Active Living
Victoria University

Appendix M.

Media Release the Australian National Outdoor Education Leadership Survey



MEDIA RELEASE

Released 15/12/2015

The Australian National Outdoor Education Leadership Survey

Doctoral researcher, David Marsden from Victoria University, Melbourne, Australia, is calling on outdoor professionals from organisations that provide services to schools to participate in the Australian National Outdoor Education Leadership Survey. If you are an outdoor leader, educator, guide, instructor, coordinator or manager working in any context from residential camping to international expeditions then the survey is targeted at you.

“The online survey is the first national phase of a research study aiming to identify the knowledge, skill and practical experience required of outdoor education leaders in Australia,” David Marsden said.

“Several stages of the research have already been completed and have successfully identified a range of knowledge, skill and practical experience through the Victorian focused phases and it is now vital to test these findings in a national context.”

“The survey is targeted at outdoor professionals from organisations that provide services to schools. This may range from residential campsites, to outdoor adventure providers, international expeditions, and outdoor education providers.”

“The survey will provide us all with greater information on the type of services the outdoor sector offers and the qualifications and profile of the workforce.”

If you have not yet completed the survey and you would like to participate, you can access the online survey via [The Australian Outdoor Leadership Survey](#), on facebook at www.facebook.com/AUSOEL or contact David Marsden direct on david.marsden2@vu.edu.au

The survey will be open until mid February 2016, and will form part of an ongoing consultation with interested stakeholders in throughout 2016.

- Statement ends -

Appendix N.

Banner Advertisement the Australian National Outdoor Education Leadership Survey

THE AUSTRALIAN OUTDOOR EDUCATION LEADERSHIP SURVEY

“If you work in the Australian outdoor industry you can make a difference to outdoor education leadership development through participating in the survey”

David Marsden, Outdoor Educator, Victoria University.



Appendix O.

Questionnaire, The National Outdoor Education Leadership Survey

PLEASE USE THE ARROW BELOW TO PROCEED



Block 26

INFORMATION TO PARTICIPANTS INVOLVED IN RESEARCH

You are invited to participate in the research project entitled:

Knowledge and skills gained through practical experience for students in tertiary outdoor education leadership programs

This project is being conducted by David Marsden, as part of a Doctorate of Philosophy at Victoria University, under the supervision of Associate Professor Clare Hanlon, College of Sport and Exercise Science, and Dr Peter Burrige, College of Education.

Project explanation

The aim of this research is to identify the knowledge and skills gained through practical experience for students in higher education (HE) outdoor education leadership programs. The research is focusing on three aspects. First, identify the knowledge and skills required for HE outdoor education leadership graduates. Second, identify what knowledge and skills can be derived through practical experience. Finally, identify the amount and type of practical experience required of HE outdoor education leadership graduates.

What am I being asked to do?

You have been invited to complete an online questionnaire which will explore topics regarding the knowledge, skill and practical experience of outdoor education leaders in Australia. It will also gather generic information regarding you as the respondent to the survey and a professional in outdoor education and the organisation you work for. All the information you provide will be non-identifiable and completely confidential.

What will I gain from participating?

You will have the opportunity to express your thoughts about the knowledge, skill and practical experience required of outdoor education leaders. Your opinion is valued by the researchers and you will have the satisfaction that you have helped increase our understanding of outdoor education leadership.

How will the information I give be used?

The information collected during the study will be used to identify the knowledge, skill practical experience, and education required of outdoor education leaders, the opinions of managers, and the needs of the outdoor education sector in Australia. These findings will be used to inform the development of outdoor education leadership courses as well as industry regarding the requirements of outdoor education leaders.

What are the potential risks of participating in this project?

The risk surrounding your participation in completing this survey are minimal and lie within the inconvenience and time needed to complete the survey.

The survey and associated questions are anonymous and confidential. This research is focused on the knowledge, skill and practical experience required of outdoor education leaders and is not linked to the products, services or procedures of outdoor education organisations.

The research team

David Marsden Primary Contact	Assoc. Prof. Clare Hanlon Chief Investigator/Supervisor
----------------------------------	--

<p>PhD Student Investigator College of Sport and Exercise Science Institute of Sport, Exercise and Active Living P.O Box 14428, Melbourne City MC VIC 8001, Australia</p> <p>Phone: 61 3 9919 4881</p> <p>mob: 0435 966 989 david.marsden2@vu.edu.</p>	<p>College of Sport and Exercise Science Research Associate, Institute of Sport, Exercise and Active Living Victoria University PO Box 14428 Melbourne VIC 8001 Australia phone:61 3 9919 4383 clare.hanlon@vu.edu.au</p>
<p>Dr Peter Burridge Associate investigator/Supervisor College of Education Victoria University St Albans Campus, Bld 8.125 phone: 03 9919 2810 mob: 0400 756 341 peter.burridge@vu.edu.au</p>	



Thanks for your participation and if you have any questions please feel free to give me a call

David Marsden
Outdoor Educator
Victoria University

Research study information and consent

CONSENT FROM PARTICIPANTS INVOLVED IN RESEARCH

I certify that I am at least 18 years old and that I am voluntarily giving my consent to participate in the study: Knowledge and skills gained through practical experience for students in tertiary outdoor education leadership programs being conducted at Victoria University by: David Marsden.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully outlined to me by the research team, and that I freely consent to participate in the below mentioned procedures for data collection:

Tool	Time Commitment
Online Questionnaire	Approximately 30 mins

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this study at any time and that this withdrawal will not jeopardise me in any way. I have been informed that the information I provide will be kept confidential and should the need arise I will have access to a Victoria University Counsellor.

Any queries about your participation in this project may be directed to David Marsden via david.marsden2@vu.edu.au or Phone 0435 966 989.

If you have any queries or complaints about the way you have been treated, you may contact the Research Ethics and Biosafety Manager, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4148.

I have read the above information and:

- I agree to complete the questionnaire, I am 18 years old or over, and I am involved in the outdoor industry in Australia.
- I wish to exit the survey.

Gender

Section 1 About You and Your Organisation

What is your gender?

- Male
- Female
- Other

Age

What is your current age?

- Under 18 years
- 18-20 years
- 21 - 30 years
- 31 - 40 years
- 41 - 50 years
- 51 - 60 years
- 60 - 65 years
- Over 65 years

Education

What is your highest educational participation?

- Secondary education / High school
- A Vocational Education and Training course
- A Higher Education bachelor level course
- A Higher Education postgraduate level course

Outdoor education courses

Which of the following qualifications have you completed in an outdoor education or outdoor recreation related course?

Please select each qualification level you have completed

- Secondary school outdoor education/recreation course
- Certificate I
- Certificate II
- Certificate III
- Certificate IV
- Diploma Level
- Advanced Diploma or Associate Degree Level
- Bachelor Degree
- Honours Degree
- Postgraduate Certificate or Diploma
- Masters
- Phd

Role

Do you have experience in the selection, coordination or management of staff providing outdoor education in Australia?

- Yes
- No

Types of expeirences

What types of outdoor education experiences are provided by your organisation?

Estimate by percentage for each experience type. The total must equal 100%

(If you work for multiple organisations please choose one organisation that you work for to answer all of the organisation based questions)

Single day one off experience	<input type="text" value="0"/>
Multi day residential camp	<input type="text" value="0"/>
Multi day bush camping journey	<input type="text" value="0"/>
International expeditions	<input type="text" value="0"/>
Urban outdoor education experiences	<input type="text" value="0"/>
Other	<input type="text" value="0"/>
Total	<input type="text" value="0"/>

What are the "other" types of outdoor education experiences provided by your organisation?

1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5	<input type="text"/>

State

Which state/territory is your organisation primarily based in?

- Victoria
 South Australia
 New South Wales
 Western Australia
 Tasmania

- Queensland
 Northern Territory
 Australian Capital Territory

Postcode and Town

What is the postcode and suburb/town your organisation and position is based in?

Postcode

Suburb/town

Other states

Does your organisation operate in other states/territories?

- Yes
 No

Please select all the other states/territories your organisation operates in

- Victoria
 South Australia
 New South Wales
 Western Australia
 Tasmania
 Queensland
 Northern Territory
 Australian Capital Territory

Staff volume

How many ongoing outdoor education leaders does your organisation employ?

ongoing employees

How many casual outdoor education leaders does your organisation employ during it's busiest, standard and quietest times?

Please estimate casual employee number.

Busiest time - Casual employees

Standard time - Casual employees

Quietest time - Casual employees

Client school breakdown

What percentage of school groups does your organisation have as clients?

Please estimate the percentage of each school type.

Estimate by percentage for each school type. The total must equal 100%

Primary schools	<input type="text" value="0"/>
Secondary schools	<input type="text" value="0"/>
Other schools	<input type="text" value="0"/>
NON School groups	<input type="text" value="0"/>
Total	<input type="text" value="0"/>

Please list the "other school" types your organisation has as clients.

1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5	<input type="text"/>

	Very Unimportant	Unimportant	Somewhat unimportant	Neither unimportant or important	Somewhat Important	Important	Very Important
Health and wellbeing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participant personal development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community and group development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Place based knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Human/Nature relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are there any other areas of outdoor education leadership knowledge and skill you would add to the above list? If yes please list below.

1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5	<input type="text"/>

Block 2

Rank from most important (1) to least important (12) the following knowledge and skill of outdoor education graduates

Drag and drop to move each component

Health and wellbeing

Safety
Technical outdoor activity skills
Participant personal development
Outdoor education leadership
Community and Group development
Environmental science
Risk management
Human/Nature relationships
Technical outdoor activity instruction
Outdoor living and journeying
Place based knowledge

Block 4

What personal traits do you believe are needed by outdoor education graduates?

Personal traits are observed actions, attitudes and behaviours.

Please list your responses

Trait 1

Trait 2

Trait 3

Trait 4

Trait 5

Block 8

Section 3 About Outdoor Education Leaders Education and Experience

Please rate the following statements relating to practical experience and outdoor education leadership graduates.

Please rate from very unimportant to very important.

If you would like more information on the rating scale please [click here](#)

	Very Unimportant	Unimportant	Somewhat unimportant	Neither unimportant or important	Somewhat Important	Important	Very Important
Practical experience for outdoor education leadership graduates is:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A log book of practical experience is:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Course based work placements are:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 9

Select the types of field based experience that you prefer outdoor education leaders have.

You can select as many as you believe relevant

- Outdoor activity skill development
- Lightweight journeying
- Technical safety training courses
- Bush base camps
- Residential camping
- Urban outdoor experiences
-

International expeditions

Click to add other

Click to add other

Click to add other

Block 10

Outdoor education leaders can gain experience on field based trips of differing lengths. For example day trips and multi day trips.

Please provide an estimate of the **number** of different field based trip lengths you would prefer graduates have prior to employment as a group leader.

day trips

2-3 day, multi day trips

3-7 day, multi day trips

1-2 week trips

2-3 week trips

more than 3 week trip

Block 11

Rank from most preferred (1) to least preferred (6) the following field based trips that graduates have prior to employment as a group leader.

Drag and drop to move each component

day trips

Block 12

Outdoor education group leaders hold the primary responsibility in the field for the well being and learning of students.

Approximately how many days practical experience do you consider is needed to attain the following knowledge and skill to the level of a outdoor education group leader?

Please select from the scale provided. If you feel the item is NOT APPLICABLE check the NA

	NA	0	10	20	30	40	50	50+
Outdoor living and journeying	<input type="radio"/>							
Risk management	<input type="radio"/>							
Outdoor education leadership	<input type="radio"/>							
Health and wellbeing	<input type="radio"/>							
Participant personal development	<input type="radio"/>							
Community and group development	<input type="radio"/>							
Place based knowledge	<input type="radio"/>							
Environmental science	<input type="radio"/>							
Human/Nature relationships	<input type="radio"/>							

Block 16

For each of the following outdoor leadership knowledge and skill select the types of educational delivery that you believe can be used to teach these.

	Very Unimportant	Unimportant	Somewhat unimportant	Neither unimportant or important	Somewhat Important	Important	Very Important
Environmental science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Human/Nature relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are there any other areas of outdoor education **participant learning outcomes** you would add to the list above? If yes please list below

•

Other participant learning outcome 1	<input type="text"/>
Other participant learning outcome 2	<input type="text"/>
Other participant learning outcome 3	<input type="text"/>
Other participant learning outcome 4	<input type="text"/>
Other participant learning outcome 5	<input type="text"/>

Block 18

Rank order from most important (1) to least important (8) the following outdoor education **participant learning outcomes**.

Drag and drop to move each component

- Health and wellbeing
- Technical outdoor activity skills
- Personal development
- Community and Group development
- Environmental science
- Human/Nature relationships

Human/nature relationships

Outdoor living and journeying

Place based knowledge

Block 19

Is there anything else regarding the knowledge, skill and practical experience of outdoor education leaders or this survey you would like to tell us about or comment on?

Appendix P.

Summary National Outdoor Education Leadership Survey Questionnaire

Item	Section/Question	Type	Response options
	Section 1—You and your organisation		
1	What is your gender?	Nominal	Male, Female, Other
2	What is your current age?	Ordinal	Under 18 years 18–20 years 21–30 years 31–40 years 41–50 years 51–60 years 60–65 years Over 65 years
3	What is your highest educational participation?	Ordinal	Secondary education/High school A Vocational Education and Training course A HE bachelor level course A HE postgraduate level course

Item	Section/Question	Type	Response options
4	Which of the following qualifications have you completed in an outdoor education or outdoor recreation related course? Please select each qualification level you have completed	Ordinal	Secondary school outdoor education/recreation course Certificate I Certificate II Certificate III Certificate IV Diploma Level Advanced Diploma or Associate Degree Level Bachelor Degree Honours Degree Postgraduate Certificate or Diploma Masters PhD
5	Do you have experience in the selection, coordination or management of staff providing outdoor education in Australia?	Dichotomous	Yes No
6	What types of outdoor education experiences are provided by your organisation? And What are the "other" types of outdoor education experiences provided by your organisation?	Multiple choice List	Single day one off experience Multi day residential camp Multi day bush camping journey International expeditions Urban outdoor education experiences Other The other option provided for up to five additional experiences to be added

Item	Section/Question	Type	Response options
7	Which state/territory is your organisation primarily based in?	Nominal	Victoria South Australia New South Wales Western Australia Tasmania Queensland Northern Territory Australian Capital Territory
8	What is the postcode and suburb/town your organisation and position is based in?	List	Two responses were sought Postcode and Suburb/town
9	Does your organisation operate in other states/territories? And Please select all the other states/territories your organisation operates in	Dichotomous Nominal	Yes No If yes then the participant was asked to select from the following list: Victoria South Australia New South Wales Western Australia Tasmania Queensland Northern Territory Australian Capital Territory
10	How many ongoing outdoor educators does your organisation employ?	Ratio	Number responses for ongoing employees sought

Item	Section/Question	Type	Response options
11	How many casual outdoor educators does your organisation employ during its busiest, standard, and quietest times?	Ratio	Number responses for casual employee sought for. Busiest time Standard time Quietest time
12	What percentage of school groups does your organisation have as clients? Please estimate the percentage of each school type. And Please list the "other school" types your organisation has as clients.	Ratio	Participant asked to estimate by percentage for each school type. The total needed to equal 100% Primary schools Secondary schools Other schools NON School groups The other school option provided for up to five additional school types to be added
Section 2—Outdoor educators knowledge, skills, and traits			

Item	Section/Question	Type	Response options
13	<p>When selecting outdoor education graduates to fulfill a group leading role how important do you rate their knowledge and skill in the following?</p> <p>Please rate from very unimportant to very important.</p> <p>And</p> <p>Are there any other areas of outdoor education leadership knowledge and skill you would add to the above list?</p>	Interval	<p>Seven point Likert scale response to the following</p> <ul style="list-style-type: none"> Technical outdoor activity skills Technical outdoor activity instruction Outdoor living and journeying Safety Risk management Outdoor education leadership Health and wellbeing Participant personal development Community and group development Place based knowledge Environmental science Human/Nature relationships <p>The option to list any other areas of outdoor education leadership knowledge and skill provided for up to five additions</p>

Item	Section/Question	Type	Response options
14	Rank order from most important (1) to least important (12) the following knowledge and skill of outdoor education leadership	Rank order Ordinal	Health and wellbeing Safety Technical outdoor activity skills Participant personal development Outdoor education leadership Community and Group development Environmental science Risk management Human/Nature relationships Technical outdoor activity instruction Outdoor living and journeying Place based knowledge
15	What personal traits do you believe are needed by outdoor education graduates? Section 3—About outdoor educators education and experience		The participant could list up to five personal traits
16	Please rate the following statements relating to practical experience and outdoor education leadership graduates. Please rate from very unimportant to very important.		Seven point Likert scale response to the following Practical experience for outdoor education leadership graduates is: A logbook of practical experience is: Course based work placements are:

Item	Section/Question	Type	Response options
17	Select the types of field based experience that you prefer outdoor educators have.		<p>The participant could select as many as relevant and add up to three additional areas</p> <p>Outdoor activity skill development Lightweight journeying Technical safety training courses Bush base camps Residential camping Urban outdoor experiences International expeditions Click to add other Click to add other Click to add other</p>
18	<p>Outdoor educators can gain experience on field based trips of differing lengths. For example day trips and multi day trips.</p> <p>Please provide an estimate of the number of different field based trip lengths you would prefer graduates have prior to employment as a group leader.</p>		<p>The participant was asked to provide a number for</p> <p>day trips 2–3 day, multi day trips 3–7 day, multi day trips 1–2 week trips 2–3 week trips more than 3 week trip</p>
19	<p>Rank from most preferred (1) to least preferred (6) the following field based trips that graduates have prior to employment as a group leader.</p>		<p>day trips 2–3 multi day trips 3–7 multi day trips 1–2 week trips 2–3 week trips more than 3 week trip</p>

Item	Section/Question	Type	Response options
20	Approximately how many days practical experience leading do you consider is needed to lead the following adventure activities?		<p>A six point numerical scale including a not applicable option was used (NA, 0, 10, 20, 30, 40, 50, 50+) for the following activities including an option to add two additional activities.</p> <p>Rock Climbing (Top Rope) Abseiling (Single Pitch) Bushwalking (Multi day semi remote areas) River Rafting (Up to Grade 3) Cycle touring (Multi day semi remote areas) Challenge Ropes Canoeing (inland flat water) Click to add other Click to add other</p>

Item	Section/Question	Type	Response options
21	<p>Outdoor education group leaders hold the primary responsibility in the field for the wellbeing and learning of students.</p> <p>Approximately how many days practical experience do you consider is needed to attain the following knowledge and skill to the level of an outdoor education group leader?</p>	<p>Identified as needing Pac. Exper.</p>	<p>A six point numerical scale including a not applicable option was used (NA, 0, 10, 20, 30, 40, 50, 50+) for the following knowledge and skill.</p> <ul style="list-style-type: none"> Outdoor living and journeying Risk management Outdoor education leadership Health and wellbeing Participant personal development Community and group development Place based knowledge Environmental science Human/Nature relationships

Item	Section/Question	Type	Response options
22	For each of the following outdoor leadership knowledge and skill select the types of educational delivery that you believe can be used to teach these.		<p>A seven category list including a not applicable option was used (NA, Online, Lectures/tutorials, Workshops, Technical training courses, Practicum/work placement, Supervised field work, Student lead trips) for the following knowledge and skill</p> <ul style="list-style-type: none"> Technical outdoor activity skills Technical outdoor activity instruction Outdoor living and journeying Safety Risk management Outdoor education leadership Health and wellbeing Participant personal development Community and group development Place based knowledge Environmental science Human/Nature relationships
Section 4 outcomes	Participant learning		

Item	Section/Question	Type	Response options
23	<p>Rate the following statements in level of importance. From very unimportant to very important.</p> <p>Outdoor education participant learning in (the following areas) is:</p> <p>And</p> <p>Are there any other areas of outdoor education participant learning outcomes you would add to the list above? If yes please list below</p>		<p>Seven point Likert scale response to the following</p> <p>Technical outdoor activity skills</p> <p>Outdoor living and journeying</p> <p>Health and wellbeing</p> <p>Participant personal development</p> <p>Community and group development</p> <p>Place based knowledge</p> <p>Environmental science</p> <p>Human/Nature relationships</p> <p>The option to list any other areas of outdoor education participant learning provided for up to five additions</p>
24	<p>Rank order from most important (1) to least important (8) the following outdoor education participant learning outcomes.</p>		<p>Health and wellbeing</p> <p>Technical outdoor activity skills</p> <p>Personal development</p> <p>Community and Group development</p> <p>Environmental science</p> <p>Human/Nature relationships</p> <p>Outdoor living and journeying</p> <p>• Place based knowledge</p>
25	<p>Is there anything else regarding the knowledge, skill and practical experience of outdoor educators or this survey you would like to tell us about or comment on?</p>		<p>Open ended question</p>

Appendix Q.

Questionnaire Definition of Terms

Term	Definition
General Terms	
Outdoor education leadership graduates	Individuals who have completed a HE qualification that prepares them for employment in the outdoor education sector.
Practical experience	Practical experience for HE outdoor education graduates can be defined as those practical experiences prescribed for their vocational or developmental outcomes relating to outdoor education knowledge and skill as an element of their HE course. These practical experience can take the form of supervised work placement (internships or practicum), field work, skills courses, embedded technical training courses, practical qualifications, and outdoor education skills development (Barnes, 2004; Garvey & Gass, 1999; Humberstone & Mannerings, 2004; Mann, 2003; P. Martin, 2008b; Poff et al., 2001; Sugerman, 1999).
Outdoor Education Knowledge and Skill Terms	
Community and Group development	<p>Knowledge of community and group development and the skills to facilitate a positive community experience with a group.</p> <p>For example: understanding of theories and concepts regarding community development, stages of group development, temporary communities, relationship building and maintenance.</p> <p>Facilitation skills in group goal setting, group decision making strategies, conflict resolution and strategies, and developing empathy for others.</p>
Human/Nature relationships	<p>Knowledge of Human/Nature relationships and the skill to facilitate this knowledge to a group whilst engaging them in the development of their own ekistic relationships.</p> <p>For example: Understanding of the theories and concepts regarding ekistic (human/nature) relationships, personal and social responses to risk and nature, perceptions of environmental impact, concepts of caring for environment, indigenous relationships to land, environmental philosophy, and ethics. Skills to facilitate learning about and through ekistic relationships. Sustainability concepts and techniques (permaculture), conservation history and practice,</p>
Environmental science	<p>Knowledge of environmental science principles and the skill to communicate this knowledge to a group.</p> <p>For example, knowledge of basic ecological principles and understanding of vegetation types and flora and fauna. Skills to facilitate learning regarding environmental science on outdoor education programs</p>
Health and wellbeing	<p>Knowledge of health and wellbeing and the skills to communicate this knowledge to a group.</p> <p>For example: understanding concepts of challenge, risk and safety in human development, knowledge, and behaviours to enhance and promote safety in young people, dietary needs and healthy menu planning, mental health understanding (relaxation, meditation), and the benefits of active living.</p>

Term	Definition
Outdoor education leadership	<p>The knowledge and skill required to lead in the outdoors to achieve outdoor education learning outcomes.</p> <p>For example: outdoor education program design, outdoor education pedagogical knowledge, outdoor leadership theories and frameworks, leadership skills (decision making, problem solving, conflict resolution, communication, facilitation skills), and knowledge of practitioner ethics and conduct.</p> <p>knowledge of group dynamics in outdoor environments and activities, experience-based judgement</p>
Outdoor living and journeying	<p>The personal knowledge and skill required to live and travel in the outdoors.</p> <p>For example: lightweight travel, camping, bushcraft, minimum environmental impact skills, weather, knowledge of differing environments being travelled through (mountains, rivers, deserts, oceans, lakes)</p>
Participant personal development	<p>Knowledge of personal development theories and the skills to facilitate personal development outcomes with a group.</p> <p>For example: theories and concepts regarding identity resilience, and leadership. Understanding of the personal motivations of participants to engage in outdoor activities. Facilitation skills in goal setting, value development, problem solving, assertiveness, interpersonal communication, leadership development, tolerance development)</p>
Place based knowledge	<p>Knowledge of the historical and contemporary narrative of places where outdoor education programs take place and the skills to facilitate learning regarding natural history, human history, and the current and previous management of a place.</p>
Risk management	<p>Those skills required to construct, implement, and adhere to risk management.</p> <p>For example: implementing organisational risk management procedures, conducting in field risk management analysis, undertaking risk assessments, and designing processes to minimise risk.</p>
Safety	<p>Those skills required to participate safely in the outdoors and ensure the safety of a group.</p> <p>For example: Wilderness first aid, activity and environment specific rescue skills, group crisis management, search and rescue, mental health first aid knowledge)</p>
Technical outdoor activity instruction	<p>The knowledge and skill required to teach the technical skills of an outdoor activity effectively. This includes those skills required for an individual to participate in an activity safely.</p> <p>For example: providing safety briefings for an activity, using a variety of instructional and coaching techniques, selecting the appropriate teaching, and learning locations, planning skill progressions, communicating the environmental impact reduction techniques associated with an outdoor activity.</p>
Technical outdoor activity skills	<p>The technical skills of the outdoor activity being undertaken.</p> <p>For example: bushwalking, skiing, canoeing, rock climbing, white water rafting, high ropes</p>

Appendix R.

Questionnaire Descriptive Values Scale Rating

Very Important—A topic which you feel to be very important and must be attained by the HE *outdoor leadership graduate*.

Important—A topic you feel is important for a HE outdoor leadership graduate.

Somewhat Important—A topic you feel is relevant but not necessary for a HE outdoor leadership graduate.

Neither important nor unimportant—A topic you are not applying a judgement regarding importance to

Somewhat unimportant—A topic you feel is not relevant or necessary but may provide benefit for a HE outdoor leadership graduate

Unimportant—A topic you feel is not important for a HE outdoor leadership graduate

Very unimportant—A topic which you feel to be very unimportant and is not be needed at all by HE outdoor leadership graduate

(Dillman et al., 2014; Green, 1981)

Appendix S.

Questionnaire Pilots Questions

Pilot One: National Outdoor Education Leadership Survey

Howdy

Thanks for agreeing to BETA test the first version of the National Outdoor Education Leadership survey. The survey is being constructed to collect information regarding the knowledge, skill and practical experience required of HE outdoor education graduates. The target group for the survey are managers in outdoor education organisations who provide services predominately to school groups.

As a tester the information you gather is extremely valuable. To assist with the process here are a few points to consider.

1. Answer the questions from your own perspective—if you are not a manager then assume a role based on what you know of the outdoor education industry.
2. The information you gather will be considered in the design of the next survey
3. You will need to record what you find out by having paper and a pen ready. Then record the question number before you take notes. That way I will be able to reference what you are informing me off. Note: The question numbers are out of order at present (this is a software quirk)
4. Does the question make sense? Have I written it well? Do you understand the terms?
5. Does the question have a purpose to you? How do you feel about answering it?
6. Do the mechanics of the software work?
7. What device are you accessing the survey on? PC, Phone.
8. Time. How do YOU feel about the time it has taken to do the survey
9. How do you think people could be kept engaged in the survey after they start?

Please note the research information and consent section needs to be heavily edited and is under consideration.

Drop me a line when you have completed the survey then I will follow you up to retrieve the feedback and have a chat

Thanks

Dave

Pilot Two: National Outdoor Education Leadership Survey A message for reviewers

Howdy

Thanks for agreeing to review the 2nd version of the National Outdoor Education Leadership survey. The survey has been constructed to collect information regarding the knowledge, skill and practical experience required of HE outdoor education graduates. The target group for the survey are managers in outdoor education organisations who provide services predominately to school groups.

As a reviewer the perspective you provide is extremely valuable. To assist with the process here are a few points to consider.

Answer the questions from your own perspective

The information you gather will be considered in the design of the next survey. You will need to record what you find out by having paper and a pen ready. Then record the question number before you take notes. That way I will be able to reference what you are informing me off.

1. Does the question make sense? Have I written it well?
2. Does the question have a purpose to you? How do you feel about answering it?
3. Do the mechanics of the software work?
4. Time. How do YOU feel about the time it has taken to do the survey
5. How do you think people could be kept engaged in the survey after they start?

Drop me a line when you have completed the survey then I will follow you up to retrieve the feedback and have a chat.

Thanks

Dave Marsden

Appendix T.
Pilot Questionnaire Reviewer Feedback

Questionnaire Pilot One Feedback.

Question	Consolidated responses
7	Explain role (question may refer to staff management relationship)
8	Comprehension and relevance of role and association to hr responsibilities
9	Needs na
9	Na
15	What if the organisation is the ymca and the manager interprets the question as the whole of the y
16	Don't understand the question. Not how the percentage of activities
17	Program type versus outdoor activity confusion—(experience type is open to interpretation)
28	What is an outdoor education leader
35	I'm over it at this point
40	How many do i need to tick
40	Should the role specific be defined e.g., GI
43	The word successful
43	Should have options not be open-ended
45	Should have options not be open-ended
47	Can tick other without writing in the box and move to next question
49	Combine with 51
49	Needs clarity
51	Combine with 49
51	Uni need and logistics

Question	Consolidated responses
53	Too wordy
53	Caving could become an other
55	Very similar to 53 need to separate as i thought it was the same question
55	Needs edit
55	This seems repetitive
55	Had specific and generic areas—remove generic
62	Needs explained like q 64 (that's good)
64	Break before section to shift the thought process to learners
65	That your organisation provides outside of the following list
72	To many education words
72	Too many repetitions of the word education

Questionnaire Pilot Two Feedback.

Question	Consolidated responses		Actions		
8	Q 8. Why salary? What will this tell you about the participant in relation to their responses		Removed		
14	2/. Q14 should you assume that surveyed has association with only one organisation, or type of organisation.... client group etc?		Inserted the following statement in Q 11 (If you work for multiple organisations please choose one organisation that you work for to answer all of the organisation based questions)		
18	Q18 ongoing is unclear, Permanent may be better				
23	Q23. <i>Selecting graduates for Grp leading role how important are knowledge/skills? What is desired program outcome? E.g., Instruction skills may be rated higher if the outcome is related.</i>	Q23 Some of these may not be clear and adding some specifics or clarification could make the data more useful during analysis. Some thoughts... See notes in word Document	Q23. Very good...	Regarding respondent concern this is what the definition of terms/glossary does. Highlighted definition of terms	The cross match with participant learning outcomes will provide the capacity to see respondent objective bias against knowledge and skill.

Question	Consolidated responses			Actions		
24	Q24. Other areas of outdoor leadership—Logistics/planning added	Q24 with the list of items that are from the previous question as a reader I initially thought is was a new list. Could you state Are there any other areas of outdoor education leadership and skill that were not listed in question 23 that you would include. Please add them in the space provided. You could also put the question after Q24 when they have completed the ranking exercise.	Q.24 no need to repeat points as per 23, just note—Are there other areas of outdoor education leadership knowledge and skill you would add to the above list? If yes please list below.	Q24. Maybe this needs sub headings?	Change to—Are there any other areas of outdoor education leadership knowledge and skill you would add to the above list? If yes please list below.	sub headings removes to reduce question size based on previous feedback
25	Q26. <i>Traits</i> : Took a while to consider this. Perhaps some generic examples if allowable?	Q26. Is there a list of suggestions that you could include from the literature in the question? Advantages of this is that people will be guided to comments on the things you think are interested. Disadvantage is that you are 'leading ' them	Q26. Might need a list in there...like our list of values	I included "Personal traits are observed actions, attitudes and behaviours." Hence I do not what to fall into the issue that PB stated Disadvantage is that you are 'leading ' them	Corrected. Numbers being removed	
27	Q. 27 seems to be a heading and not a question					
29	I would prefer them to have					

Question	Consolidated responses				Actions	
30	Q30 I think this needs an explanation leading into it explaining the experience outdoor leaders need for one day or week long trips.				Changed to—Outdoor educators can gain experience on field based trips of differing lengths. For example day trips and multi day trips. Please provide an estimate of the number of different field based trip lengths you would prefer graduates have prior to employment as a group leader.	
32	Q32. <i>How many days practical experience needed to lead adv activities?:</i> Quite a difficult question to answer. Would depend on number of factors e.g. individual, facilitator etc.	Q32. May need to qualify if this is personal experience of experience leading a group. For example do you want someone to have 10 days leadership experience for climbing but 50+ days of personal climbing? Why NA and a 0 days option?	Q32 and Q33. Insert the word Approximately prior to each sentence e.g., Approximately how many days practical experience do you consider is needed to lead the following adventure activities?	Q32. I added bottom belay top rope climbing to the list.	NA is for participant to opt out of a response. 0 is if they think no skill needed	Changed to— Approximately how many days practical experience leading do you consider is needed to lead the following adventure activities?

Question	Consolidated responses		Actions	
33	Q33. As above. Again difficult to answer. A reasonable level, a high level? Perhaps more specific in relation to level.	Q33 May need to qualify group leader and lead— what is the difference. These terms are not in the definition list. I think they are best included in the question.	Q32 and Q33. Insert the word Approximately prior to each sentence e.g., Approximately how many days practical experience do you consider is needed to lead the following adventure activities?	<p>Changed to—Outdoor education group leaders hold the primary responsibility in the field for the well being and learning of students</p> <p>Approximately how many days practical experience do you consider is needed to attain the following knowledge and skill to the level of a outdoor education group leader?</p>
34	Q.34 Insert these instead of them	the word teach could be learn	inserted these	
35				
36	Q36. <i>Participants Learning Outcomes:</i> Spelling “Following”. What are the desired outcomes? Hard to answer accurately without this context. Liked the red highlighted important/key phrase	Q.36 Spelling and grammatical error: Outdoor education participant learning in the following area is: Change to Outdoor education participant learning in (the following areas) are:		
General Notes				
Feels like a fine amount of time to spend. No questions seemed unnecessary. All relevant.				
Mechanics of software. Shame headings need to be numbered as a question (am assuming nothing can be done about that though)				

Question	Consolidated responses	Actions
Interesting use of different functions throughout the survey e.g., drag and drop sorting in order of importance etc. Kept some variety in there and avoided monotony.	Does is need to have something about the results being used for publications	Definition of terms link—I would be tempted to use glossary as I jumped to the conclusion that the link would take you to an explanation of the question
A-Z glossary		

Appendix U.

Phase 1 Document Review Code Tree, Selective, Axial, Open

Code tree	Sources	References
Leader knowledge	60	855
Environment knowledge	16	102
Ecological literacy	9	23
Environmental science and management	12	14
Minimal environmental impact practices	15	65
Location based knowledge of leader	16	68
Managing community and public relationships	12	18
Outdoor activity specific instruction and leadership	52	416
Outdoor education teachers adventure activity knowledge and skill requirements	19	22
Outdoor leaders adventure activity knowledge and skill requirements	33	394
Pedagogy	7	19
Learning	1	6
Teaching	7	13
Program design	16	53
Educational benefits	1	1
Supervision	2	2
Responsibilities of leaders	8	17
Safety and risk management	22	162
Outdoor education outcomes	6	424
Community and group development	3	76
Bullying	1	2
Complex social conventions,	1	1
Conflict resolution and strategies education	2	11
Empathy for others.	1	4
Relationship building and maintenance	2	22
Team and group education	2	29
Trust building	1	1
Work cooperatively,	1	1
Environmental history,	1	3
Environmental movements	1	3
Environmental science	3	60
Biological sciences	1	3
Ecology	1	3

Code tree	Sources	References
Environmental health,	1	1
Field investigations	1	1
Fieldwork	1	2
Major natural systems	1	1
Outdoor environments.	1	10
Human—nature relationships	2	91
Connection to place	1	6
Cultural practices.	1	1
Economic	1	1
Historical	1	5
Indigenous	1	3
Political factors	1	2
Social factors	1	8
Value of natural environments (2)	1	4
Natural resource management,	2	28
Community projects.	1	1
Conflicts of interest	1	3
Conservation	1	5
Conserve	1	1
Environmental issues	1	5
Environmental research and policy,	1	6
Human activities	1	4
Patterns of distribution and occurrence of major physical features	1	1
Protect,	1	1
Outdoor adventure activities education	1	5
Basic first aid skills education	1	3
Concept of adventure	1	1
Maps	1	3
Outdoor recreation	1	5
Outdoor education career outcomes	1	8
Nature-based tourism,	1	1
Outdoor leading and guiding,	1	1
Personal development	3	43
Assertiveness strategies	1	1
Communicate effectively,	1	1
Develop positive thinking habits and coping skills,	1	3
Goal setting	1	3

Code tree	Sources	References
Identity	1	1
Interpersonal communication skills development	1	1
Peer influence	1	3
Peer mediators	1	2
Peer teaching	1	1
Personal identity,	1	9
Personal motivation in activity	1	2
Personal value development	1	2
Problem solving development	1	1
Resilience strategies	3	5
Respect for the individuality of others	1	1
Values and beliefs	1	5
Place based knowledge	1	9
Recreation activities are used to learn about the natural environment.	1	7
Sustainability	3	55
Environmentally responsible citizens.	1	2
Manage	1	1
Sustainability	1	6
Sustainability (2)	1	6
Wellbeing	2	39
Complex motor skills	1	1
Concepts of challenge, risk, and safety	1	16
Dietary needs	1	7
Knowledge and behaviours to enhance and promote safety.	1	1
Leisure activities	1	1
Mental health understanding	1	3
Physical activity	1	2
Physical capacity development	1	2
Practical experience	49	124
Documentation—staff qualifications and experience (DEECD)	2	6
General need for experience (AAS)	12	36
Need for activity-based experience (DEECD)	21	26
Abseiling	1	2
Artificial abseiling and climbing walls	1	1
Bushwalking	1	1
Canoeing and kayaking	2	2
Challenge ropes courses	1	1

Code tree	Sources	References
Cross-country skiing	1	2
Cycling	1	1
Downhill skiing and snowboarding	1	1
Horse riding	1	1
Orienteering	1	2
Overnight camping	1	1
Rafting	1	1
Recreational swimming	1	1
Rock-climbing	1	1
Sailing	1	1
Scuba diving	1	1
Sea kayaking	1	1
Snorkelling	1	2
Surfing	1	1
Water skiing	1	1
Wind surfing	1	1
Outdoor activity practical experience management framework (NOLRS)	13	55
Abseiling practical experience	1	7
Bushwalking practical experience	1	3
Canoeing practical experience	0	0
Canyoning practical experience	2	9
Caving practical experience	1	4
Challenge ropes practical experience	1	4
Climbing artificial practical experience	1	3
Climbing natural practical experience	1	6
Cycle touring practical experience	2	5
Kayak practical experience	1	6
Mountain biking practical experience	1	2
Rafting practical experience	0	0
Sea kayaking practical experience	1	4
Snorkelling practical experience	1	2
Qualifications, standards, legislation, guidelines	54	464
Acts	3	4
Food act 1984	1	1
National parks act 1975;	1	1
Wildlife act 1975	1	2
Legislation	1	1

Code tree	Sources	References
Working with children check	1	1
Licences	5	5
Recreational boat operators licence.	1	1
Qualifications	48	350
Australian national training scheme	14	42
Community qualifications	22	51
Education and training	10	12
HE	15	54
Lack of qualification available	3	3
Qualification level	2	23
Rescue and first aid	21	54
Vocational education	18	111
Regulations	15	66
Department of primary industries—fisheries	1	1
Land managers	5	6
Local government	1	1
Marine safety requirements	1	1
Quarantine areas	1	1
Total fire ban	1	1
Workplace health and safety	1	1
Standards and guidelines	9	30
AAS	5	23
Australian standard as 2299.3 and in Victoria, the dive	1	1
Australian standard (AS-NZS 4360 risk management).	2	2
Food Safety Australia and New Zealand (FSANZ) standards	1	3
Safety guidelines for education outdoors (DEECD)	1	1

Appendix V.

Adventure Activities Identified in Document Review for Outdoor Leaders and Outdoor Education Teachers

Outdoor leaders	Outdoor education teachers
Abseiling	Abseiling
Abseiling Artificial Surfaces	Artificial Abseiling and climbing walls
Abseiling (Artificial) Guide Single Pitch	Bushwalking
Abseiling (Artificial) Instructor Multi Pitch	Canoeing and Kayaking
Abseiling (Artificial) Instructor Single Pitch	Challenge ropes courses
Abseiling Natural Surfaces	Cross country skiing
Abseiling (Natural) Guide Multi Pitch	Cycling
Abseiling (Natural) Guide Single Pitch	Downhill skiing and Snowboarding
Abseiling (Natural) Instructor Multi Pitch	Horse Riding
Abseiling (Natural) Instructor Single Pitch	Orienteering
Bushwalking	Overnight camping
Bushwalking Guide—Controlled Environment	Rafting
Bushwalking Guide—Intermediate Environment	Recreational swimming
Bushwalking Guide—Uncontrolled Environment	Rock climbing
Canoeing and kayaking	Sailing
Canoeing	Scuba Diving
Canoeing Guide Flat Water	Sea Kayaking
Canoeing Guide White Water Grade 2	Snorkelling
Canoeing Guide White Water Grade 3	Surfing
Canoeing Instructor Flat Water	Water Skiing
Canoeing Instructor White Water Grade 2	Wind Surfing
Canoeing Instructor White Water Grade 3	
Canyoning	
Canyoning Guide Multi Pitch	
Canyoning Guide Single Pitch	
Canyoning Instructor Multi Pitch	
Canyoning Instructor Single Pitch	
Caving	
Caving Guide Multi Pitch	
Caving Guide Single Pitch	
Caving Instructor Multi Pitch	
Caving Instructor Single Pitch	

Outdoor leaders	Outdoor education teachers
Challenge Ropes	
Challenge Ropes Course Conduct—High Ropes	
Challenge Ropes Course Conduct—Low Ropes	
Challenge Ropes Course Manager (High Ropes)	
Challenge Ropes Course Manager (Low Ropes)	
Challenge Ropes Course Supervise—High Ropes	
Challenge Ropes Course Supervise—Low Ropes	
Climbing	
Climbing Artificial surfaces	
Climbing (Artificial) Guide Top Rope	
Climbing (Artificial) Instructor Multi Pitch Lead	
Climbing (Artificial) Instructor Single Pitch Lead	
Climbing Natural Surfaces	
Climbing (Natural) Guide Multi Pitch Lead	
Climbing (Natural) Guide Single Pitch Lead	
Climbing (Natural) Guide Top Rope	
Climbing (Natural) Instructor Multi Pitch Lead	
Climbing (Natural) Instructor Single Pitch Lead	
Climbing (Natural) Instructor Top Rope	
Cycle touring	
Cycle Tour Guide (Overnight and Extended Tours)	
Cycle Touring Guide	
Cycle Touring Instructor	
Fossicking ~ Prospecting ~ Goldpanning	
Generic Skills	
Horse Riding	
Kayaking Inland	
Kayaking Guide Flat Water	
Kayaking Guide White Water Grade 2	
Kayaking Guide White Water Grade 3	
Kayaking Instructor Flat Water	
Kayaking Instructor White Water Grade 2	

Outdoor leaders	Outdoor education teachers
Kayaking Instructor White Water Grade 3	
Sea Kayaking	
Sea Kayaking Guide—Easy to Moderate Conditions	
Sea Kayaking Guide—Moderate to Difficult Conditions	
Sea Kayaking Instructor—Easy to Moderate Conditions	
Sea Kayaking Instructor—Moderate to Difficult Conditions	
Mountain Biking	
Mountain Biking Guide—Intermediate Environment	
Mountain Biking Instructor—Intermediate Environment	
Rafting	
Recreation	
Recreational Fishing	
Snorkelling, Scuba, Wildlife Swims	
Snorkelling Guide	
Snorkelling Instructor	
Snow Skiing	
Surfing	

Appendix W.

Responsibilities of a Bushwalking Leader

The Bushwalking Adventure Activity Standard (AAS) Version 3.1 produced by the Outdoor Recreation Centre (2010b) provides a detailed list of specific responsibilities that are in addition to actually leading the group:

- Take reasonable steps to ensure that the level of knowledge, ability, skill, and equipment of each participant is adequate for the level of difficulty and complexity of the activity.
- Ensure that a process has been undertaken to research and plan for likely hazards, and that the leader is familiar with the measures required.
- Introduce themselves as leader and introduce any other key people.
- Ensure that minimal environmental impact message is conveyed and adhered to.
- Manage and minimise the environmental impact that may be caused by the activity.
- Where considered necessary nominate an assistant leader (or assistant leaders) who has/have known skills and experience relevant to the activity and are willing to perform defined duties.
- Ensure a briefing is conducted and understood by all participants.
- Undertake headcount before, during and immediately following the activity.
- Maintain awareness of the physical and psychological condition of the group.
- Control the pace of the group.
- Delegate responsibility to other group members as necessary (whip, navigation, first aid, etc).
- Notify relevant people of safe completion of the activity.
- Ensure that any incidents are managed, reported, and recorded.

- Manage the group to avoid or minimise the effects of hazards ensure land manager's requirements are followed confirm the activity plan.
- Ensure that the group has access to safe drinking water.
- Check suitability, condition, and use of all group equipment prior to departure and on return.
- Ensure group equipment is secured and stored correctly at all times.
- Ensure to the best of their ability that group members do not get into situations beyond their capabilities.
- Check first aid kit equipment prior to activity.
- Check communication equipment prior to activity.
- Frequently check weather forecasts prior to the activity and, if possible and relevant, during the activity.
- Ensure all documentation has been completed and collated arrange for the signing of waivers where these apply.
- Individual tasks may be delegated but the responsibility remains with the activity leader (Outdoor Recreation Centre, 2010b, p. 10).

Appendix X.

NOLRS Registration Checklists for Bushwalking, Controlled, Intermediate, and Uncontrolled Environments



Registration Checklist
 Bushwalking Guide - Controlled Environment
 V 2.0 June 2013, © OCA

To be eligible for NOLRS registration you need to meet the requirements of sections A, B and below:

A Skills and Knowledge*

Option

1: [SIS10 Bushwalking Guide - Controlled Environment Skill Set](#)

OR

Option

2: NOLRS Recognised Outdoor Leader Course:

- Certificate III in Outdoor Recreation (SRO99, SRO03, SIS10); or
- Certificate IV in Outdoor Recreation (SRO99, SRO03, SIS10); or
- Diploma in Outdoor Recreation (SRO99, SRO03, SIS10); or
- Recognised University Course (see NOLRS website);

AND

Activity Level Specific Units:

- Bushwalking Guide - Controlled Environment Unit Group
(see NOLRS website: SRO03 or SIS10);

B Currency (Logbooks)^

Option 1:

In order to demonstrate currency, an applicant seeking registration must have verifiable evidence of *guiding or instructing* a minimum of **18 hours** of bushwalking on tracks classified as Class 4 or above as defined within the Australian Standard™ . The sessions must:

- be in the past twelve (12) months,
- involve different locations and/or different groups, and
- involve at least one (1) dependent client group~.

(~ Commercial client groups or groups led by a volunteer within an organised club like environment.)

OR

Option 2:

Meet the currency requirements of the relevant Re-registration Table for the previous 3 years (The Re-registration Table must be filled in and included in the application)

There is a maximum of **8 logged hours** per day that can be used for meeting registration requirements.

C

Current First Aid and CPR Documentation*

* This evidence must be certified. Certified under the NOLRS means it has to be signed by somebody from the Australian Government's Statutory Declaration Signatory List. Each document must include the signatory's name, signature, occupation and acknowledgement that they have sighted the original.

<http://www.ag.gov.au/Publications/Pages/Statutorydeclarationsignatorylist.aspx>

^ Each logbook entry must be supported by a verifying contact name and contact number. The person is ideally a supervisor or manager and must be able to confirm the details of the session including the role of the leader.



Registration Checklist
 Bushwalking Guide - Intermediate Environment
 V 2.0 June 2013, © OCA

To be eligible for NOLRS registration you need to meet the requirements of sections A, B and C below:

A	Skills and Knowledge*	
1:	Option SIS10 Bushwalking Guide - Intermediate Environment Skill Set	
OR		
2:	Option NOLRS Recognised Outdoor Leader Course: <ul style="list-style-type: none"> • Certificate III in Outdoor Recreation (SRO99, SRO03, SIS10); or • Certificate IV in Outdoor Recreation (SRO99, SRO03, SIS10); or • Diploma in Outdoor Recreation (SRO99, SRO03, SIS10); or <ul style="list-style-type: none"> • Recognised University Course (see NOLRS website); AND Activity Level Specific Units: <ul style="list-style-type: none"> • Bushwalking Guide - Intermediate Environment Unit Group (see NOLRS website: SRO03 or SIS10); 	
B	Currency (Logbooks)^	

Option 1:

In order to demonstrate currency, an applicant seeking registration must have verifiable evidence of *guiding or instructing* a minimum of **24 hours** of bushwalking on tracks classified as Class 5 or above as defined within the Australian Standard™. The sessions must:

- be in the past twelve (12) months,
- involve different locations and/or different groups, and
- involve at least one (1) dependent client group~.

(~ Commercial client groups or groups led by a volunteer within an organised club like environment.)

AND

In addition, evidence must be supplied of at least **two** overnight camps during the guided bushwalks.

OR

Option 2:

Meet the currency requirements of the relevant Re-registration Table for the previous 3 years

(The Re-registration Table must be filled in and included in the application)

There is a maximum of **8 logged hours** per day that can be used for meeting registration requirements.

C

Current First Aid and CPR Documentation*

* This evidence must be certified. Certified under the NOLRS means it has to be signed by somebody from the Australian Government's Statutory Declaration Signatory List. Each document needs to include the signatory's name, signature, occupation and acknowledgement that they have sighted the original.

<http://www.ag.gov.au/Publications/Pages/Statutorydeclarationsignatorylist.aspx>

^ Each logbook entry must be supported by a verifying contact name and contact number.

This person is ideally a supervisor or manager and must be able to confirm the details of the session including the role of the leader.



Registration Checklist
 Bushwalking Guide - Uncontrolled Environment
 V 2.0 June 2013, © OCA

To be eligible for NOLRS registration you need to meet the requirements of sections A, B and C below:

A	Skills and Knowledge*	
1:	Option SIS10 Bushwalking Guide - Uncontrolled Environment Skill Set	
OR		
2:	Option NOLRS Recognised Outdoor Leader Course: <ul style="list-style-type: none"> • Certificate III in Outdoor Recreation (SRO99, SRO03, SIS10); or • Certificate IV in Outdoor Recreation (SRO99, SRO03, SIS10); or • Diploma in Outdoor Recreation (SRO99, SRO03, SIS10); or <ul style="list-style-type: none"> • Recognised University Course (see NOLRS website); AND Activity Level Specific Units: <ul style="list-style-type: none"> • Bushwalking Guide - Uncontrolled Environment Unit Group (see NOLRS website: SRO03 or SIS10);	
B	Currency (Logbooks)^	

Appendix Y.

Phase 2 Semistructured Interviews Code Tree, Selective, Axial, Open

Code tree	Sources	References
Practical experience	6	183
Outdoor education leadership knowledge and skill development	6	42
Group development	3	12
Teaching and learning—experience	2	4
Safety	2	4
Risk management	2	3
Context experience	1	3
Place based knowledge	1	3
Outdoor living and travel skills	3	3
Interpersonal development experience	2	2
Client type experience	1	2
Experience transference	2	2
Build the skills	1	1
Links technical with soft skill	1	1
Soft skills	1	1
Management of practical experience	6	34
Processing those experiences	5	12
Duration	3	8
Logbook of experience	3	5
Quality of experience	2	4
Currency	1	3
BMLCC offered a unique practical education	1	2
Leaders own personal development through experience	6	29
Maturity	3	7
Consolidation	1	7
Confidence	2	3
Leaders own personal development through experience	2	3
Intuitive	1	1
Attention to detail	1	1
Multitask	1	1
Knowledge	1	1
Self sufficiency	1	1
Problem solving	1	1
Type of practical experience	3	27

Code tree	Sources	References
Education and training provider	2	14
Personal experiences	2	4
Workplace probation period to build experience	2	3
Placement	2	2
Apprenticeship	1	2
Summer programs	1	1
Older style training was often like military training	1	1
Scope of experiences	2	18
Variety of contexts	2	18
Variations in leaders due to experience	3	12
Less experienced leaders	3	10
Experienced leaders	1	1
Age	1	1
Limitations to practical experience	4	9
Age of leaders	2	2
Negative experiences	1	2
Ve training packages	1	1
Personal experience not good for	1	1
Still don't get it even with experience	1	1
Repetitive	1	1
Leader knowledge	6	175
Pedagogy	6	56
Teaching	6	41
Learning	5	15
Program design	5	32
Settings for outdoor education	2	16
Program types	5	15
Program design skills	1	1
Leadership	5	29
Theories and frameworks	3	11
People skills	3	9
Group management	1	5
Decision making	1	2
Outdoor living, activity, and travel skills	6	18
Hard skill general	3	7
Definitely need technical skills	3	6
Bushwalking	1	2
Leaders need 4 or 4 activity areas	1	1

Code tree	Sources	References
Hard skill not	1	1
Basic skills	1	1
Client relationship	2	16
Client types	1	7
Working with teachers	1	2
Client diversity	1	1
Safety and risk management	5	15
Risk management	3	7
Safety	2	3
Self awareness	2	8
What motivates you.	1	1
Approach	1	1
Why you do what you do	1	1
Knowing where you're strong, knowing where you're weak	1	1
Knowing how you engage with people	1	1
Influences on outdoor education	6	102
Client	5	45
Schools	5	40
Client generally	2	5
Education system	5	19
Curriculum	5	15
Education department	3	4
Outdoor industry	4	10
Outdoor education provider	4	6
Freelancing for outdoor education providers was a major employment stream	1	3
Society	4	9
Multi level influences	1	3
Social context	1	1
Outdoor educator courses	1	7
Change in the knowledge and skill required of outdoor educators over time—soim	1	6
Risk management	1	7
The big change has been in the risk management—soim	1	2
Land managers	1	2
Insurance	1	1
Resources	2	5
Time	1	3
Cost	1	1

Code tree	Sources	References
Outdoor education outcomes	6	84
Personal development	5	23
Intrapersonal development.	5	8
Life lessons	2	5
Interpersonal skills	2	4
Challenging	1	2
Therapeutic	1	1
Community and group development	6	17
Group work	4	7
Sense of belonging	2	4
Socialization	2	3
School curriculum links	3	16
Areas identified as not being developed	1	9
Pe	1	2
History	1	1
Geography	1	1
Cross curriculum	1	1
Vet outdoor rec curriculum	1	1
Wellbeing	5	11
Psychological	4	6
Physical	1	3
Environmental education	3	10
Environmental awareness	3	5
Environmental knowledge	3	5
Outdoor activities	4	6
Challenge activities	2	2
Outdoor activities	2	2
Outdoor recreation	1	2
Qualifications, standards, legislation, guidelines	6	51
Qualifications	6	35
Adventure activity qualifications	5	9
University degrees	4	8
Safety	2	4
You don't actual have to have any	1	1
Vocational education diploma	1	1
Standards and guidelines	3	8
Aas	3	3
Building codes	1	2

Code tree	Sources	References
Work safe	1	1
Uaa	1	1
Education department guidelines	1	1
Legislation	3	8
Working with children.	2	2
Police check	1	1
Workcover	1	1
Work safe	1	1
Outdoor educators traits	6	27
Well rounded person	3	4
Attitude	2	3
Passion	3	3
Qualification vs enthusiasm	1	1
Empathy	1	2
Interest, life experience	1	2
Ego	1	1
Interest in people	1	1
Credibility	1	1
Interpersonal	1	1
Maturity	1	1
Grounded	1	1
Honest with themselves	1	1
Socially intelligent	1	1
Prepared to learn	1	1
Confidence	1	1
Common sense	1	1

Appendix Z.

Question Twenty Five, Participant Responses

Question twenty five: Is there anything else regarding the knowledge, skill and practical experience of outdoor educators or this survey you would like to tell us about or comment on?

Question twenty-five participant responses

With youth at risk, personal development and group skills are important

Ultimately regardless of the theory and technical skills it still requires the leader to have the personal qualities to make the experience a positive outcome for the participants. Reliance on technical skills and formal qualifications is often over riding the real catalyst which is the individual personality that makes the experience. Technical skills can always be taught, however, the personal qualities of the individual are not so easy to instil, therefore it is important to keep the aim of the activity in the forefront to ensure that the best outcomes are achieved.

There needs to be more feedback from supervisors so that the leaders can continue to improve the areas where they lack skills, knowledge, and experience.

The white water industry uses practitioner guides from all over the world. Due to the seasonal nature of the industry, many guides must be prepared to travel

The majority of learnings an Outdoor Leader can achieve occur best in an experiential setting, such as in the field with clients.

The change from lectures and practical experience sessions to online seminars and online videos/lecture notes for outdoor education courses is backward. This is in dire need of a reversal of attitude if we are to appropriately and adequately educate our future outdoor educators. Outdoor education is commonly looked upon as frivolous and often dangerous; safety aspects are being hounded upon more frequently, and the aims and purposes of the field are being challenged. Yet how is this supposed to improve—practice made effectively sound and more available to a greater variety of people—without the means to immerse and educate future leaders in their 'classroom'/'office' properly?

Students to learn about sustainability.

I'll be very interested to see the results of your research. Good luck.

Question twenty-five participant responses

Some very good questions that have provoked a great deal of thinking and could promote some good discussion amongst Outdoor Educators and students. Certainly interested in seeing the end product.

Outdoor Leaders need to be able to facilitate effective group development to ensure the groups they lead develop into cohesive performing groups!

Outdoor education should not be in the national curriculum. The introduction of another soft academic subject (to an already crowded curriculum) will only serve to further diminish the value of the outdoors and to ensure that now we will have to somehow test and report on each child's performance in OE. Students then come out of secondary school with a distorted view of OE. When combined with the current level of training OE practitioners receive we have a recipe for disaster. Most OE courses (in the tertiary sector) are combined with PE or Human Movement and I would see the two fields as coming from two fundamentally different paradigms. We will be writing about how OE destroyed the outdoors for a generation. The Certificate level courses (TAFE) have seen OE follow the appalling mistakes of the fitness industry. Will we end up with a Michelle Bridges equivalent running a reality TV series called 'How many grade threes can you get on a giant swing in hour' ? Or risk management for the outdoors—lessons from the sausage factory?

Outdoor educators should have an awareness to engage with those they are working with- delivering programmes that challenge and invoke thoughts of the environment and activity that the participants are engaging with. Participants should leave the day having learnt something new—delivered by a safe, skilled and knowledgeable leader who has a passion for the subject area.

Outdoor ed, is an area that needs time on placement and in the outdoors to develop. The higher the experience level of the leader the more chance they have to build upon their educational skills

One of the most important aspects for new leaders is to have time in the field. This needn't be on a formal training course or Uni based/organised trip. Having attended a one-week sea kayak trip organised by Uni doesn't make a proficient or even competent sea kayaker. I would much rather employ someone who's grown up on the coast surfing,

Question twenty-five participant responses

swimming, and snorkelling with no formal OE training than someone who's only exposure to the outdoors were thorough their tertiary study. There also seems to be a paucity of basic life skills amongst recent graduates which negatively impacts on their employability. While I applaud graduates who can give me a monologue on their philosophical beliefs on the pedagogy of OE I'd much rather they could competently tie-down the fleet boats to a trailer and back the 4x4 into the shed.

Number one focus: ability to teach people skills. You can teach a monkey all of the necessary technical skills, but it is very difficult to teach the critical people skills it takes to lead a group on a transformational experience.

My workplace is a mental health organisation. As such, we focus on using outdoor education principles to improve participants' mental and physical health.

More qualifications. Please.

Leadership skills and personal awareness

It was hard to put down number of days needed to lead. Reality is that I think most training courses expose outdoor ed students to less than 30 days in-field, supervised experience before they are qualified to lead a group. However, obviously, the more experience you have in the field, the greater your skill and knowledge set becomes. Personally, I don't think an outdoor instructor ever stops learning. I've only been instructing full-time for 2.5 years, but every program still teaches me a lot and I don't see those learnings stopping. I also think it is easy to concentrate on the technical aspects of outdoor ed, whereas most of the learnings for participants tend to be around personal development (resilience, persistence, compassion), leadership, group/community development and environmental learnings.

It was hard to make a decision on how many days people should complete as it depends on what is included in these days and the background of the participant. I also think that people should go from student to assistant to leader to senior leader...or something similar...not just student then-leader

Interesting survey, look forward to the results.

Question twenty-five participant responses

In NSW TAFE systems, many of our courses are being reduced to 6-months as a cost-saving measure. The graduates coming out of these programs are not fit for purpose, yet they believe that they are, which makes them dangerous in the work environment because they are not open to employment guidance. It would be amazing to convince policymakers of the real benefits of outdoor education, however in the short term we probably need to piggy-back on the adventure tourism sector (a major financial contributor to the economy) to encourage the government to more adequately support out training needs.

I would expect the answers from the last few questions to be warped as the importance of the different learning outcomes depends upon the focus of the programme being delivered (whether it is a personal development programme, environmental programme, team development programme, behavioural development programme, technical skills programme etc.) I expect aspirant outdoor leaders to have, Experience—both personal and practitioner, with personal experiences significantly above the level they lead at Competency—technical competency within the activity and environment they are operating in, this should be current competency, and again their personal competency should exceed the environment they lead others in Qualification—credible technical (preferably practitioner) qualification from a leading national or international organisation within the activity area, IE. paddlesport qualifications from AC (Australian Canoeing) or international equivalents (BCU, NZOIA ETC.)

I have answered the survey based on experiences I had managing a large program in the Northern Territory. I was in this role for a considerable length of time but have since moved on. The area in which I believe staff often lacked was the more generic skills such as tying down a load, working with trailers, attaching lights, lifting dolly wheel etc, working to lists/prioritising workloads. I believe most of my staff were very strong at hard skills, for instance, setting up anchors (climbing) navigation(bushwalking) but lacked more of the broader above mentioned skills relevant to most programs.

Question twenty-five participant responses

I fully support research into the field of outdoor and environmental education and think this is a fantastic thing to explore. Some limitations with this type of survey may be the context of why I may have checked a certain box at a certain level which can not be explained. Some areas of the survey, e.g. the number of days graduates should spend in the field in general, in specific activities and on certain areas of learning may obviously cross over and was hard to articulate or discern this. But basically, I believe the more time in the field the better, and the more complex or specialised the area of knowledge or activity, the more time is required to reach a level of competency and confidence to perform well. This can be achieved through a range of methods if planned and mapped well. Hopefully, this helps in your research and good luck.

I find a number of the questions in this survey misleading. * All listed teaching modes for leader skills can offer some value—none is on its own sufficient * Learning aims for outdoor ed should not be taught as fixed—OE should be a form of pedagogy, not a fixed syllabus * Amount of required practicum time is difficult to estimate and is linked to learner progress Great to see this kind of research being done!

I believe the participant's personal development and experience is very important to not only the education of the outdoors but ensuring that the message you are trying to relay to each participant may be passed on to the next person.

I believe it is time that there is a radical shift in the momentum of Outdoor Education within Australia at the Primary, Secondary and Tertiary level. I see Tertiary students (TAFE and University) graduating with poor skills, minimal knowledge, and overrated egos. It is time to encourage the outdoor education industry to pull up it's pants to ensure quality for the long term.

I am more likely to hire a student who understands what they need to work on. Personal passion and development is everything I like to hear that students have explored the outdoors themselves and not just on per organised trips. Placement and experience n leading groups is important. Students need to explore a variety of programs as a broad experience will give them a better insight into outdoor education programs and their purpose.

Question twenty-five participant responses

Good 'outdoorsies' are hard to find. Plenty of skill out there, but the interpersonal skills are lacking. The ability to pass on the information and skills to participants is also lacking in a lot of (especially) younger graduates. I am personally big into personal development for participants, and that is what I mainly do through abseiling, rock and (believe it or not..) tree climbing, canyoning and white water paddling. To find the right staff member to provide the right group and individual dynamic is here you guys can help. Also, if a guide/leader truly understands Risk Management first, then a lot of the other stuff will follow. Anyone down there want to work with problem kids? Thanks for the thought to do a survey it takes a long time and a lot of panning. Bravo to you guys. Keep up the good work.

Confidence and feedback resources are vital to improve the quality of outdoor leaders and aspiring leaders so the clients can benefit from the unique environmental and journey of sense of self within their community, school, and society expectations. -Thank you for this opportunity -

Before I employ someone, I want to know that they have 6 months-years experience as an assistant group leader under a variety of leaders

Appendix AA.

Elements of Knowledge and Skill for HE Outdoor Education Graduates

Element	Domain(s)	Description	Knowledge	Skill
Safety	Rudimentary	<p>Includes leader skill and knowledge to ensure the safety of the leader and a group during an outdoor education program within the context of the environment and activities.</p> <p>Safety is required by all leaders in the outdoors.</p>	Safety policies, procedures, and response protocols.	Activity and environment specific first aid and rescue skills, group crisis management, search and rescue, mental health first aid
Risk management	Rudimentary	<p>Includes skill and knowledge to identify and manage risk in outdoor education programs to increase leader and student safety and decrease organisational loss</p> <p>Risk management is required by all leaders in the outdoors.</p>	Understand risk management theories, legal responsibilities, and risk management frameworks.	Assess risk, plan risk treatment, and document risk management plans, emergency response planning, and evacuation procedures
Technical outdoor activity instruction	Rudimentary	<p>Leader knowledge to effectively teach the technical aspects of an outdoor activity with the aim of students participating safely in the activity under supervision.</p> <p>Technical outdoor activity instruction is required by all leaders of adventurous activities in the outdoors.</p>	Theories of adventure activity education, guiding and instructing outdoor adventure activities.	Ability to manage a group to effectively teach the technical skills of an outdoor activity, session planning, provide safety briefings for an activity, apply a variety of instructional techniques, select session locations, plan technical skill progressions, and communicate environmental impact reduction techniques relating to the activity

Element	Domain(s)	Description	Knowledge	Skill
Outdoor education leadership	Foundations	<p>Outdoor education leadership refers to leader knowledge and skill required for the management of outdoor education programs.</p> <p>Outdoor education leadership is required by all outdoor educators.</p>	<p>Understanding of outdoor leadership theories within the context of outdoor education, professional ethics, responsibilities of outdoor educators, and group dynamics in an outdoor education environment.</p>	<p>Applying leadership techniques (communication, facilitation) to manage groups in outdoor education.</p> <p>Pre-program planning and design, leadership (decision making, problem-solving, conflict resolution, logistics, coordination), managing community relationships, managing client relationships, and developing experience-based judgement.</p>
Outdoor education pedagogy	Foundations	<p>Outdoor education pedagogy refers to leader knowledge regarding the pedagogies and education practice of outdoor education.</p> <p>Outdoor education pedagogy is required by all outdoor educators.</p>	<p>Knowledge: Understanding of pedagogical theories, learning theory, curriculum, ethics in education, and codes of practice.</p>	<p>Applying education practice to achieve outdoor education outcomes.</p> <p>Curriculum interpretation, lesson planning, and assessment; educator communication skills, reflective practice for self-awareness, professional conduct when working with young people, engagement with community of practice.</p>

Element	Domain(s)	Description	Knowledge	Skill
Outdoor education leader personal skills	Foundations Rudimentary	<p>Outdoor education leader personal skills refer to leader knowledge and skill of the inner self, observable in behaviour beneficial to self, others (with a focus on students), nature, and the workplace.</p> <p>Outdoor education leader personal skills are required by all outdoor educators.</p> <p>Rudimentary domain outdoor education leader personal skills focus on the leader being introspective and self-correcting regarding work performance to complete workplace tasks effectively.</p> <p>Foundations domain outdoor education leader personal skills focuses on outdoor educators being introspective to apply critical thinking to outdoor education pedagogy.</p> <p>In the specialisations domain of outdoor education, leader personal skills are further developed through elements such as participant personal development, community and group development, and human/nature relationships.</p>	Intrapersonal awareness displayed through being positive, confident, common sense, prepared to learn, passionate, humble, and mature.	Interpersonal adroitness displayed through empathy, interest in people, credibility, and being socially intelligent.

Element	Domain(s)	Description	Knowledge	Skill
Place based knowledge	Specialisation Foundations Rudimentary	<p>Place based knowledge refers to leader knowledge regarding a specific geographical location and its relationship to people past and present, including the outdoor education program</p> <p>Rudimentary domain place-based knowledge focuses on the technical aspects of a place as they relate to the provision of a safe outdoor adventure experience</p> <p>Foundation domain place-based knowledge focuses on the relationship between place and outdoor education pedagogy.</p> <p>Specialisation domain place-based knowledge focuses on the outdoor education learning outcomes for students.</p>	<p>Place based knowledge is specific to a location. It includes understanding the geography of a place and historical and contemporary narratives associated with the location.</p>	<p>Research and interpret the landscape and facilitate learning regarding natural history, human history, and the current and previous management of a place.</p>

Element	Domain(s)	Description	Knowledge	Skill
Outdoor living, activity, and journeying	Specialisation Foundations Rudimentary	<p>OLAJs refer to knowledge and technical skills to live and travel safely in the outdoors.</p> <p>Rudimentary domain OLAJs focuses on the leader's capacity to remain safe and comfortable in the outdoors. OLAJs are required by all outdoor leaders. Technical outdoor activity instruction regularly includes the teaching of OLAJs to students.</p> <p>Foundation domain OLAJs focuses on their relationship to outdoor education pedagogy and programming.</p> <p>Specialisation domain OLAJs focuses on the outdoor education learning outcomes for students.</p>	Personal awareness to live, undertake adventure activities, and journey safely, with minimum harm in outdoor environments during outdoor education programs	Personal technical ability in lightweight travel (particularly bushwalking and camping), bushcraft, minimum environmental impact skills, adventure activity skills suited to environment (mountains, rivers, deserts, oceans, lakes) and outdoor education program.
Participant personal development	Specialisation	<p>Participant personal development refers to leader knowledge regarding the intrapersonal and interpersonal development of students through outdoor education programs.</p> <p>Participant personal development is an outdoor education learning outcome for students.</p>	Understanding of personal development theory, including theories and concepts regarding identity, resilience, leadership, challenge, and facilitation.	Facilitation skills to develop intrapersonal and interpersonal outcomes for students regarding personal challenge, prosocial behaviours, resilience, personal knowing, affective awareness, goal setting, value development, problem solving, assertiveness, communication, leadership, and tolerance.

Element	Domain(s)	Description	Knowledge	Skill
Community and group development	Specialisation	Community and group development refers to leader knowledge regarding the temporary communities established through outdoor education programs. Community and group development is an outdoor education learning outcome for students.	Theories and concepts regarding community development, stages of group development, temporary communities, relationship building and maintenance.	Facilitating community, group development, and associated learning outcomes; group goal setting, group decision-making strategies, conflict resolution and strategies, and developing empathy for others.
Health and wellbeing	Specialisation	Health and wellbeing refer to leader knowledge regarding health and wellbeing through outdoor education programs. Health and wellbeing is an outdoor education learning outcome for students.	Theory and principles of health and wellbeing. Concepts of challenge, risk, safety, human development, nutrition knowledge, physical health, and mental health.	Communicating principles and facilitating practices regarding health and wellbeing during outdoor education programs regarding: behaviours to enhance and promote safety in young people, healthy menu planning, cooking and food preparation, physical activity planning and facilitation, safe social practices, positive mental health practices (relaxation, meditation), and encouraging the benefits of active living.

Element	Domain(s)	Description	Knowledge	Skill
Human/nature relationships	Specialisation	Human/Nature relationships refer to leader knowledge of human/nature relationships through outdoor education programs. Human/Nature relationships are an outdoor education learning outcome for students.	Understanding of the theories and concepts regarding ekistic relationships and their relationship to outdoor education, Personal and social responses to risk and nature, perceptions of environmental impact, concepts of caring for environment, indigenous connections to land, environmental philosophy, and ethics.	Facilitation of ekistic relationship through outdoor education programs. Facilitation of theoretical, philosophical, and ethical concepts. Practical technical skills for sustainability and conservation practices.
Environmental science	Specialisation	Environmental science refers to leader knowledge of rudimentary ecology and environmental management to interpret natural environments during outdoor education programs. Environmental science is an outdoor education learning outcome for students.	Environmental science theory and principles including basic ecological principles, landscapes, flora, fauna, human impacts, and land management.	Frameworks to interpret natural environments Communicating scientific principles to a group.