2002

The impact of adventure-based training on team cohesion and psychological skills development in elite sporting teams

Ian T. Boyle
University of Wollongong

Recommended Citation
NOTE

This online version of the thesis may have different page formatting and pagination from the paper copy held in the University of Wollongong Library.

UNIVERSITY OF WOLLONGONG

COPYRIGHT WARNING

You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site. You are reminded of the following:

Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material. Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.
THE IMPACT OF ADVENTURE-BASED TRAINING ON TEAM COHESION AND PSYCHOLOGICAL SKILLS DEVELOPMENT IN ELITE SPORTING TEAMS

A thesis submitted in partial fulfillment of the requirements for the award of the degree

DOCTOR OF EDUCATION

from

THE UNIVERSITY OF WOLLONGONG

by

Ian T Boyle

BPE (in outdoor pursuits) Calgary
BED Sydney
MED Wollongong

Faculty of Education
2002
DECLARATION

I, Ian Thomas Boyle, declare that this thesis, submitted in partial fulfillment of the requirements for the award of Doctor of Education, in the Faculty of Education, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Signed

Date 15-11-02

Ian T Boyle
ACKNOWLEDGMENTS

This doctoral journey has been undoubtedly one of the toughest challenges I have had to face in my life to date. Along the way there have been many obstacles that have tested one's resilience, however, I have been fortunate to be blessed with many people that have helped me along the way.

My wife Sue and son Jaxon have been an inspiration. Sue your patience through what has been an emotional roller coaster over the past few years, is testament to the special person you are. Being there to soothe my frustrations and encourage me to continue when I felt like giving up was greatly appreciated. For the weeks of proofing my writing, I promise to keep that lifetime supply of chocolate stocked in the “secret” cupboard for you. Jaxon, you have been instrumental in maintaining my sanity. When the clock hit five o’clock you were banging on my door for your afternoon rumble, before our obligatory walk to the lake to throw rocks. This is something I will always treasure. I love you both!

To my mum and dad, thank you for supporting my dreams, you were always there offering encouragement and support every step of the way. There were also many others who contributed to this thesis process as well.

A soon to be famous Australian philosopher M. J. Searl must be thanked for imparting with what has to be one of the most necessary pieces of advice for anyone undertaking tertiary studies. Mike’s advice for finishing a thesis is called “the three nail principle”: You nail your chair to the floor, your bottom to the chair and your books to the table, and simply sit there until it is completed, easy! During many frustrating times, these words of guidance have helped. The second piece of philosophical advice came from Michael Gass, who instructed me in the 99% principle, which included the following words of wisdom. “99% done, is 1% incomplete, it is often that final 1% that people stumble on. This helped me maintain my focus right until the end, thanks to both of you for your philosophising.

To my academic supervisors at the University of Wollongong, you have been an inspiration. Thanks especially to Tonia Gray, for your enthusiasm, encouragement and the time you invested in helping me overcome the endless hurdles. You truly know what the role of a teacher is about; which is, making time for your students! To others who have helped me along the way, Ted Booth, Gary Wilsmore, Jan Wright, thank you for your generous
donation of time, support and advice. To John Patterson, thanks for having your door open every time I needed help with statistics, even though you never had the time, you always made it. To Ken Russell, the Wollongong statistical whiz, I appreciate the extra effort you went to in helping me through draft after draft of statistical results.

Outside the University of Wollongong, there were two people that gave up valuable time mentoring me in the use of SPSS and how to interpret page after page of what at first appeared to be a mass of incomprehensible numbers. James Neill from the psychology department at the University of Canberra and Peter Cook from the department of applied mathematics at the University of NSW; to give up days of your time with the workload you both have was a wonderful gesture of support; I will always be appreciative of this.

To the coaching staff of NSW netball, Anita Keelan, Rob Wright, Jo Macdermid, Jenny O'Keefe, Young Mrs. Blades, Deb and the players of the Under 19 and Under 17 teams, thank you for having faith in me to deliver something special to your teams. I hope the memories and lessons stay with you forever and that you pass them on to others in the coming years.

To those who helped me deliver the adventure-based training programs, Stuart McNeill, Mike Searl, Amber Brindle and Ben Binder, your professionalism, enthusiasm and expertise was instrumental to the success of these interventions. You know what working as a team is all about!

Finally, to the two Grandma Maureen’s, thanks for being there when we needed you through all the rewrites and final drafting. This thesis would not have been finished without you.
The genesis of this thesis had its beginnings back in January 1988 in a frozen ice gully known as the Junkyards in Canmore, Alberta, Canada. I was on a weekend ice-climbing instructional course, led by Bill March, the then coordinator of the outdoor pursuits program at the University of Calgary. Throughout the weekend I had progressed quickly, top roping most of the climbs that had been set up. Bill soon thought I was ready to lead my first ice-climb. I began confidently, but halfway up the ice face the distraction of the height and the sudden fear of falling had me hanging on to my ice axes for dear life. Bill coolly and calmly solo climbed across and gave his customary "looks like you are in a spot of bother, here let me put an ice screw in for you". He then clipped my rope into this safety device, and I was off to finish the climb.

Upon reaching the ground, we spent some time talking about how good climbers develop themselves in order to block out the distractions of the environment; and just focus on climbing around them.

A short time after this ice-climbing course, Bill unexpectedly passed away. He however left a legacy that has stayed with me ever since that day, that legacy was:

“One's mind, if used to its full potential has the power to overcome enormous challenges and obstacles.”

I have used the lessons of the 'Canmore Junkyard' continuously throughout my life since. It helped me as a high school drop out to obtain a degree in physical education, a Masters Degree, and then this Doctoral degree. During every step of this tertiary journey, I have stopped part way through and questioned whether I had what it took to finish. Through the lows that one has during these times, Bill always would find his way into my thoughts, "Come on Ian, believe in yourself, block out the doubts and focus on the job you are here to do".
The lessons from that cold February day have also helped me in my sporting career. It has taught me how important mental focus is during the heat of competition. I have used these skills to win national championships in sailing, marathon kayaking, and rogaining. It is clear to me that when all else is equal, my mind has given me the edge over opponents.

Now as a teacher, outdoor educator, sporting coach and father, Bill's legacy is being passed on to another generation through the work I do. It was a marriage of these loves; the power of the outdoor environment, sport, and a willingness to teach others as Bill had taught me, that led to this doctorate study.

Knowing personally the power of psychology in the sporting process, I was originally disheartened when I observed young athletes coming back dejected and bored after sport psychology sessions that were supposed to put fire in their bellies, and develop skills for dealing with the pressures of sport. Remedying this problem, like overcoming my own fears of ice climbing, became a passion. This thesis is the culmination of searching for ways to put this fire back in the bellies of our young athletes.

It is my hope that this work is the beginning of something special. It is my dream that all athletes and children have the opportunity to develop their mental skills so that they may get the most out of their sport and their lives. I trust that the ideas in this thesis are listened to and addressed by the wider sport psychology and adventure training movements, and that the powerful synergy between the outdoor adventure environment and sport psychology is one that is utilised by future practitioners that want to make a real difference to the lives of those they are working with.
ABSTRACT

Adventure-based training has become an effective medium for delivering experiential training programs within a variety of disciplines such as; school outdoor education, corporate teamwork development, youth at risk and psychological counseling. In addition, Meyer & Wenger (1998) and Meyer (2000) were instrumental in pioneering research in to the efficacy of adventure-based training with sporting teams. This investigation adds to the growing body of knowledge in this area by demonstrating the positive effects an adventure training intervention has on athletes ability to learn new team and psychological skills. In addition, results indicated that individual and team performance might have been enhanced because of skills learnt during the intervention.

This study examined the impact of an adventure-based training intervention on the group cohesion and psychological skills development of elite netball players. Data was gathered using both quantitative and qualitative methodologies. Many researchers are of the belief that the two methodologies compliment one another and thereby strengthen the total research model (Henderson, 1993).

Thirty-six members of state age netball teams in NSW, Australia provided informed consent to participate in the study. Participants were either members of one of two treatment groups; the NSW under 17 (n=12) or the NSW under 19 (n=12) state netball teams. A control group from a rival interstate team made up the control group (n=12).

Quantitative data measuring group cohesion was assessed by means of the group environment questionnaire (GEQ) (Carron, Brawley & Widmeyer, 1985). The GEQ was derived from a conceptual model that considers cohesion to be a multidimensional construct that includes task and social aspects, each of which reflects both an individual and a group orientation. Four subscales of cohesion are contained in the GEQ, these include: Individual attractions to the group-task (ATG-T), individual attractions to the group-social (ATG-S) group integration-task and (GI-T) group integration-social (GI-S). Using a quasi-experimental design, students were administered two pre-tests and tracked at regular intervals throughout the intervention and sporting season with two post-tests, in order to ascertain longitudinal changes in group cohesion.
In order to quantify the impact of the intervention on group cohesion, a series of 3 (group) X 4 (time) repeated-measures analyses were conducted, with treatment group and time as the independent variables. Further testing was conducted using a series of analysis of variance tests to assess differences in groups at each time-period within each sub-scale. Post hoc Bonferroni tests were used to identify where these differences occurred. Finally, the longitudinal effects of the intervention were examined using “effect size” calculations. These were calculated for each group to determine the degree and significance of any change between each testing time. In three of the four sub-scales ATG-T, ATG-S, and GI-T highly significant differences were noted between the treatment and control groups. These significant results were supported by the athletes’ qualitative accounts of the intervention.

In qualitative terms, focus group and one on one phenomenological interviews were triangulated against observational and statistical data to help build a picture of the athletes’ experience. In the phenomenological tradition, obtaining the athletes’ perspective of the intervention was most important. With this in mind, both the outcomes and the process that led to the outcomes were documented.

A phenomenological approach to qualitative data collection was followed based on the work by Dale (1996). Knowing how the intervention impacted on the participants from their perspective, is a critical question often overlooked by researchers. Results clearly indicated how athletes’ changed and developed during and after the intervention. Improved cohesion around task issues was especially evident, along with enhanced mental skills to handle the pressures of major competition. Lewin’s change theory was examined to explain the learning process; modifications to this theory were suggested. Recommendations were outlined for improving sport psychology teaching practice, along with improved facilitation of adventure programming.
TABLE OF CONTENTS

Title Page .................................................................i
Declaration ..........................................................ii
Acknowledgements.................................................iii
Preface ................................................................iv
Abstract ..................................................................v
Table of Contents.....................................................vii
List of Figures..........................................................ix
List of Tables ............................................................xv

Chapter 1 ..................................................................1

Introduction ..............................................................1
BACKGROUND AND NEED FOR THIS STUDY ..................1
EXPERIENTIAL EDUCATION ........................................3
ADVENTURE BASED TRAINING .....................................7
STATEMENT OF PROBLEM ..........................................9
STATEMENT OF PURPOSE ..........................................12
HYPOTHESES AND RESEARCH QUESTIONS ..................14
Quantitative Hypotheses ..............................................14
Qualitative Research Questions ..................................14
OPERATIONALISATION OF TERMS ..............................15

Chapter 2 ..................................................................18

Review of Literature ..................................................18
PROCESSES OF ADVENTURE TRAINING AND CHANGE ....19

THE WILDERNESS ENVIRONMENT ..............................20
Stress ....................................................................23
Stress and Anxiety ....................................................25

GROUP DEVELOPMENT AND GROUP DYNAMICS ............33
Group Roles ............................................................37
Group Norms ............................................................37

GROUP COHESION ....................................................38
Cohesion and Performance ........................................41
Building Team Cohesion ............................................42
Research in Team Cohesion ........................................43

FACILITATION ..........................................................46
Stages of Adventure Facilitation ...................................47
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debriefing the Experience</td>
<td>48</td>
</tr>
<tr>
<td>Frontloading the Experience</td>
<td>49</td>
</tr>
<tr>
<td>Framing the Experience</td>
<td>50</td>
</tr>
<tr>
<td>Transderivational Search</td>
<td>51</td>
</tr>
<tr>
<td>Facilitation Research</td>
<td>53</td>
</tr>
<tr>
<td>Edgework</td>
<td>54</td>
</tr>
<tr>
<td>PSYCHOLOGICAL SKILLS TRAINING</td>
<td>57</td>
</tr>
<tr>
<td>Current State of Psychological Skills Training</td>
<td>57</td>
</tr>
<tr>
<td>Efficacy of Psychological Skills Training?</td>
<td>60</td>
</tr>
<tr>
<td>Imagery</td>
<td>61</td>
</tr>
<tr>
<td>Goal Setting</td>
<td>63</td>
</tr>
<tr>
<td>Attention / Concentration Control</td>
<td>64</td>
</tr>
<tr>
<td>Self-Talk</td>
<td>65</td>
</tr>
<tr>
<td>Recommendations for Future PST Programs</td>
<td>65</td>
</tr>
<tr>
<td>Models for Delivering Psychological Skills Training</td>
<td>66</td>
</tr>
<tr>
<td>ADVENTURE-BASED TRAINING &amp; SPORT PSYCHOLOGY</td>
<td>69</td>
</tr>
<tr>
<td>Brief commentary or research with methodological limitations</td>
<td>69</td>
</tr>
<tr>
<td>Program Descriptions in Sporting or Outdoor Journals</td>
<td>71</td>
</tr>
<tr>
<td>Refereed Research Articles from Academic Journals or Theses</td>
<td>72</td>
</tr>
<tr>
<td>Summary of Literature Review</td>
<td>75</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>77</td>
</tr>
</tbody>
</table>

**Methodology**

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHODS LITERATURE</td>
<td>77</td>
</tr>
<tr>
<td>RESEARCH DESIGN</td>
<td>78</td>
</tr>
<tr>
<td>Participants</td>
<td>80</td>
</tr>
<tr>
<td>The Subjects</td>
<td>80</td>
</tr>
<tr>
<td>Coaching Staff</td>
<td>81</td>
</tr>
<tr>
<td>Facilitators</td>
<td>81</td>
</tr>
<tr>
<td>Researcher Facilitator as Instrument Statement</td>
<td>82</td>
</tr>
<tr>
<td>Researcher-Facilitator, Participant-Observer Role of the Facilitator</td>
<td>82</td>
</tr>
<tr>
<td>Site</td>
<td>84</td>
</tr>
<tr>
<td>QUANTITATIVE APPROACH</td>
<td>87</td>
</tr>
<tr>
<td>Instrumentation</td>
<td>87</td>
</tr>
<tr>
<td>Quantitative Procedure</td>
<td>88</td>
</tr>
<tr>
<td>Statistical Analysis</td>
<td>89</td>
</tr>
<tr>
<td>Significance Testing and Effect Size</td>
<td>90</td>
</tr>
<tr>
<td>QUALITATIVE APPROACH</td>
<td>93</td>
</tr>
<tr>
<td>Observations</td>
<td>93</td>
</tr>
<tr>
<td>Interviews</td>
<td>94</td>
</tr>
<tr>
<td>Debriefing</td>
<td>95</td>
</tr>
<tr>
<td>Informal Conversational Interviews</td>
<td>96</td>
</tr>
<tr>
<td>Focus Group Interviews</td>
<td>96</td>
</tr>
<tr>
<td>Phenomenological Interviews</td>
<td>100</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>102</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Group Integration-Social GI-S</td>
<td>177</td>
</tr>
<tr>
<td>Evidence of GI-S during the adventure-based training weekend</td>
<td>177</td>
</tr>
<tr>
<td>Evidence of GI-S after the adventure-based training weekend</td>
<td>179</td>
</tr>
<tr>
<td>Group-Cohesion Results Summary</td>
<td>180</td>
</tr>
<tr>
<td>Improved on Court Performance</td>
<td>181</td>
</tr>
<tr>
<td>Increased Concentration</td>
<td>181</td>
</tr>
<tr>
<td>Increased Anxiety Control</td>
<td>185</td>
</tr>
<tr>
<td>Increased Confidence</td>
<td>186</td>
</tr>
<tr>
<td>Improved on Court Results Conclusion</td>
<td>188</td>
</tr>
<tr>
<td>Change Outside of Netball</td>
<td>188</td>
</tr>
<tr>
<td>PROCESS RESULTS</td>
<td>189</td>
</tr>
<tr>
<td>Unfreezing</td>
<td>191</td>
</tr>
<tr>
<td>Forming / Storming</td>
<td>191</td>
</tr>
<tr>
<td>Stress / Disequilibrium</td>
<td>193</td>
</tr>
<tr>
<td>Unfreezing Results Conclusion</td>
<td>195</td>
</tr>
<tr>
<td>Moving</td>
<td>196</td>
</tr>
<tr>
<td>Change Agents</td>
<td>196</td>
</tr>
<tr>
<td>Norming</td>
<td>197</td>
</tr>
<tr>
<td>Focus on Personal &amp; Team Improvement</td>
<td>201</td>
</tr>
<tr>
<td>Moving Results Conclusion</td>
<td>202</td>
</tr>
<tr>
<td>Refreezing</td>
<td>202</td>
</tr>
<tr>
<td>Communication</td>
<td>203</td>
</tr>
<tr>
<td>Increased Trust / Break down of cliques</td>
<td>203</td>
</tr>
<tr>
<td>Improved Roles and Norms</td>
<td>204</td>
</tr>
<tr>
<td>Phenomenological accounts of refreezing</td>
<td>204</td>
</tr>
<tr>
<td>A Control Group Perspective</td>
<td>207</td>
</tr>
<tr>
<td>Refreezing Results Conclusion</td>
<td>208</td>
</tr>
<tr>
<td>Dissenting Data</td>
<td>208</td>
</tr>
<tr>
<td>Conclusion</td>
<td>209</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>210</td>
</tr>
<tr>
<td>Discussion</td>
<td>210</td>
</tr>
<tr>
<td>OUTCOMES OF THE ADVENTURE-BASED TRAINING EXPERIENCE</td>
<td>211</td>
</tr>
<tr>
<td>TEAM COHESION</td>
<td>211</td>
</tr>
<tr>
<td>INDIVIDUAL ATTRACTION TO THE GROUP-TASK. ATG-T</td>
<td>212</td>
</tr>
<tr>
<td>INDIVIDUAL ATTRACTION TO THE GROUP-SOCIAL. ATG-S</td>
<td>213</td>
</tr>
<tr>
<td>GROUP INTEGRATION-TASK. GI-T</td>
<td>215</td>
</tr>
<tr>
<td>GI-T During The Adventure-Based Training Weekend</td>
<td>215</td>
</tr>
<tr>
<td>GI-T After The Adventure-Based Training Weekend</td>
<td>217</td>
</tr>
<tr>
<td>GI-T at the National Championships</td>
<td>218</td>
</tr>
<tr>
<td>Ceiling Effect</td>
<td>219</td>
</tr>
</tbody>
</table>
IMPLICATIONS OF THIS RESEARCH ................................................................. 256
Implications For Sport Psychology ........................................................... 257
Implications for Adventure-Based Training .............................................. 258

RECOMMENDATIONS FOR FUTURE RESEARCH ....................................... 259
Retaining the Qualitative Methodologies .................................................. 260
Refinement of Instrumentation ................................................................. 260
Replication of this Study .......................................................................... 261
Further Research ..................................................................................... 261

CONCLUDING COMMENTS ........................................................................ 262

REFERENCES ............................................................................................... 264

Appendix 1 ................................................................................................. 277
Appendix 2 ................................................................................................. 279
Appendix 3 ................................................................................................. 289
Appendix 4 ................................................................................................. 291
Appendix 5 ................................................................................................. 293
Appendix 6 ................................................................................................. 295
Appendix 7 ................................................................................................. 297
Appendix 8 ................................................................................................. 316
Appendix 9 ................................................................................................. 320
Appendix 10 ............................................................................................... 324
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1: Experiential Learning Model</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Figure 2: The Stress Process</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Figure 3: Stages of group development and the corresponding activity sequence</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Figure 4: Conceptual model of group cohesion</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Figure 5: Carron's model for cohesiveness in sporting teams</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Figure 6: Matching program type with change requirements.</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Figure 7: Edgework</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Figure 8: Expanding the comfort zone</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Figure 9: Three step process for teaching PST</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Figure 10: Data collection time line for quantitative and qualitative data</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>Figure 11: (A): Analysis of variance tests (B) Effect size analysis</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Figure 12: Flow Chart of a Phenomenological research Project</td>
<td>103</td>
<td></td>
</tr>
<tr>
<td>Figure 13: Working as a team to negotiate the cliff line</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>Figure 14: The Northwest end of Mount Carialoo. “The lunch spot”</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>Figure 15: The &quot;squeeze&quot; in Argyle cave</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>Figure 16: The cave opens up to allow for a team discussion on the events that have unfolded</td>
<td>146</td>
<td></td>
</tr>
<tr>
<td>Figure 17: Players assisting each other to overcome the vertical drain hole</td>
<td>146</td>
<td></td>
</tr>
<tr>
<td>Figure 18: The “Squeeze” section in Argyle Cave</td>
<td>148</td>
<td></td>
</tr>
<tr>
<td>Figure 19: Repeated measures analysis for the ATG-T sub-scale.</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>Figure 20: Comparison of effect size change for three groups across time for ATG-T subscale</td>
<td>156</td>
<td></td>
</tr>
<tr>
<td>Figure 21: Repeated measures analysis for the ATG-S sub-scale</td>
<td>157</td>
<td></td>
</tr>
<tr>
<td>Figure 22: Comparison of effect size change for three groups across time for ATG-S subscale</td>
<td>159</td>
<td></td>
</tr>
<tr>
<td>Figure 23: Repeated measures analysis for the GI-T sub-scale</td>
<td>161</td>
<td></td>
</tr>
<tr>
<td>Figure 24: Comparison of effect size change for three groups across time for GI-T subscale</td>
<td>163</td>
<td></td>
</tr>
<tr>
<td>Figure 25: Repeated measures analysis for the GI-S sub-scale</td>
<td>164</td>
<td></td>
</tr>
<tr>
<td>Figure 26: Factors contributing to the outcomes of the adventure-based training intervention</td>
<td>168</td>
<td></td>
</tr>
<tr>
<td>Figure 27: Photo sequence used to guide part of the phenomenological interview</td>
<td>187</td>
<td></td>
</tr>
<tr>
<td>Figure 28: Factors contributing to the process of the adventure-based training intervention</td>
<td>190</td>
<td></td>
</tr>
<tr>
<td>Figure 29: Players developed a team chant “out of this hole” to help focus their attention on task</td>
<td>217</td>
<td></td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 1: Scale for interpreting effect sizes in outdoor education research......................................................... 91
Table 2: Effect sizes from meta-analyses of intervention programs........................................................................ 92
Table 3: SWOT analysis for under-19 netball team ................................................................................................. 110
Table 4: Outlines the key activities that were conducted during the intervention..................................................... 111
Table 5: Means and standard deviations for 4 time measures of ATG-T sub-scale x 3 groups................................. 153
Table 6: Analysis of Variance for ATG-T sub-scale across 4 time measures............................................................ 154
Table 7: Post Hoc analysis showing multiple comparison of ATG-T sub-scale at time 4........................................... 155
Table 8: Effect Sizes for each group showing change on the ATG-T sub-scale....................................................... 156
Table 9: Means and standard deviations for 4 time measures of ATG-S sub-scale x 3 groups............................... 157
Table 10: Analysis of Variance for ATG_S sub-scale across 4 time measures.......................................................... 158
Table 11: Post Hoc analysis showing multiple comparison of ATG-S sub-scale at time 4......................................... 159
Table 12: Effect Sizes for each group showing change on the ATG-S sub-scale....................................................... 159
Table 13: Means and standard deviations for 4 time measures of GI-T sub-scale x 3 groups................................ 160
Table 14: Analysis of Variance for GI-T sub-scale across 4 time measures............................................................. 161
Table 15: Post Hoc analysis showing multiple comparison of GI-T at time 3........................................................... 162
Table 16: Post Hoc analysis showing multiple comparison of GI-T at time 4.......................................................... 162
Table 17: Effect Sizes for each group showing change on the GI-T sub-scale......................................................... 163
Table 18: Means and standard deviations for 4 time measures of GI-S sub-scale x 3 groups................................. 163
Table 19: Shows significant between group results across four team cohesion subscales....................................... 250
Table 20: Summary of the effect score results across four team cohesion subscales.............................................. 251
Chapter 1

INTRODUCTION

BACKGROUND AND NEED FOR THIS STUDY
Throughout the history of sporting competition, athletes have been searching for ways to gain the edge over their opponents (Orlick, 1986). With an increased amount of funding and resources being channeled into coach development, sport science and athlete preparation, success is contingent upon how well the pressures are handled on the day. Having a mental disposition to work as a cohesive unit and the ability to block out the distractions that can inhibit performance, is often the difference between opponents in the heat of competition (Williams, 1986).

While many coaches are preparing their athletes physically for competition, in some cases it has become apparent that they have neglected the importance of training athletes for the mental aspects of competition. Goldsmith (1996, p.6) states, “Sport psychology is an integral part of the sport sciences network, yet is often the most neglected of the sport sciences”. As a coach working with sporting teams, I have often been alarmed at the lack of psychological preparation of our elite athletes. Worth (1995), coach of the Australian Junior Kayak Team for the 1995 World Championships observed that his team had no formal psychological skills training upon their selection for their first overseas international competition. Further to this, with Andrew Trim and Danny Collins (Personal communication, 2000), (Australia’s Sydney 2000 Silver K2 Kayak Medallists), confirmed a belief, that mental skills training is not a priority. To this end, Trim and Collins stated that, “most Australian elite paddlers don’t have the skills to handle the pressures of big competition, and is one reason for our poor performances come the Olympics”.

The same inadequacies have been mirrored in the junior New South Wales (NSW) Netball ranks, with whom I have conducted consulting work. Observations have identified three main weaknesses in the psychological skills training that they have received.

1. It is very elementary or introductory.
2. It is a “one-off” event.
3. The training is often just a lecture with no opportunities for athlete involvement in the learning process.

I began to question whether my successful experiences as an outdoor education teacher in helping students learn about themselves in an experiential adventure setting, would lend itself to the sport psychology teaching process. After interviewing junior elite athletes upon their return from a training camp where they participated in sport psychology lectures, a common reoccurring theme emerged; athletes were not engaged in the learning process. Comments such as: "It was so boring, it put us to sleep", "We just sat there and listened; it was just like being at school" were common.

While these responses are typical of teenagers in any learning environment when they are not actually involved in their learning, my experience as an outdoor educator had shown that learning could be challenging and exciting. Students appeared to respond better to learning opportunities when they were placed in a new and novel environment that created uncertainty and stress. Engagement was enhanced when the activities mirrored issues that were real and relevant in their lives. In an attempt to provide new challenging modes of program delivery for young athletes the impetus for this study emerged.

At this time, I was formulating views on psychological skills training based on my own experience as a competitive marathon kayaker and a keen outdoor enthusiast. Through my own personal experience in whitewater kayaking, caving, rogaining, rock climbing and mountaineering, I have found myself in many challenging situations that had taken me to the edge of my perceived ability and my self imposed comfort zone. However, when you are halfway up a mountain, or running a big river, there is no place for self-doubt. Therefore, I had to learn to focus on the task and block out the natural fears with which one is confronted when at the extreme edge of your abilities.

Many of the individual psychological skills contained in sports psychology text books, such as goal setting, positive self talk, anxiety control, imagery, activation levels, relaxation, attention control (Williams, 1996) along with all aspects of team work, are being practiced intuitively when participating in a wilderness adventure activity. It was through my involvement in adventure pursuits, (which resulted in my own personal growth and valuable lessons in mental control) that I began to formulate ideas for a possible experiential teaching method for teaching sport psychology skills to athletes.
I first put my ideas into practice, with several pilot sport psychology training programs with Australian Canoeing, and NSW Netball teams. Qualitative data collected from these teams suggested that not only did the training lead to an increased knowledge of sport psychology concepts, but that these concepts were directly transferable to the sporting arena. Interestingly, athletes claimed that the marriage of adventure-based training and sport psychology had helped their sporting performances.

In my excitement about the success of these initial programs, I sought expert opinion from the sport psychology department at The University of Wollongong, and the Sport Psychology Internet listserv, out of Temple University in the USA. Comments from several leading experts in the field were critical of my approach. They were skeptical of the concept of taking athletes into the wilderness, to teach them psychological skills for sport. Comments such as, “Athletes would never be able to transfer the learning back to their sporting situation”, “Why bother taking them away from their sporting environment, it’s a waste of time”, were common responses. My preliminary investigations into this field were not met with the same enthusiasm that I had for my own ideas.

My initial reaction to this feedback was that I was too far off in left field and that I should perhaps attempt a more conservative research project. The work of one research team (Meyer & Wenger 1998) however, demonstrated that my ideas were not too far fetched. I felt I could add to this initial attempt to build a body of knowledge in this area of study.

This then brings me to the motivation for this study. I believe that adventure-based training (an experiential based teaching methodology), which utilises adventure-based activities, is a valid, viable and potentially powerful method for teaching sport psychology concepts to athletes. I therefore wanted to set about conducting a research project that could question this assumption and gather evidence to support or refute my beliefs. It was hoped that future athletes might benefit from their involvement in this kind of intervention.

In order to understand the theoretical framework of this study the following section gives an overview of key elements that have underpinned the adventure based training field of study.

**EXPERIENTIAL EDUCATION**

Adventure-based training has been built upon a solid theoretical base, with its roots traceable to the field of experiential education. Greenberg, (1978, cited in Quinsland and Van Ginkel, 1984, p. 9), suggests that, “it is critical for anyone in the position of facilitating experiential
education, to have a conceptual foundation or theory upon which to test one's ideas and to base the planning or learning activities/contexts/events/situations”. This begs the question, what is experiential education?

There have been many attempts in the literature to define experiential education, Itin (2000, p.1), states that experiential education is:

A holistic educational philosophy that recognizes the transactive process between teacher, student, subject, environment, placing equal importance on both the content to be taught and the process by which it is taught; recognising and incorporating the experiential learning process of both the teacher and student.

In laymen terms Priest (2000, p.2), affirms that all learning is experience based: “Whether we hear a lecture, watch a video, or read a book, our learning is “based” on those experiences. Unfortunately, we remember 20% of what we hear, 50% of what we see, but 80% of what we do.”

Experiential learning is founded more on the “active” doing, rather than the “passive” being taught to, the latter unfortunately being the norm in modern education. In this way, people practice the very skills they are learning and are more likely to maintain their change back in life outside the experiential training program. Experience-based learning becomes “experiential” when elements of reflection, support and transfer are added to the base experience. These will be discussed in the literature review contained in chapter two.

There have been several individuals in the field of education who have been instrumental in defining and furthering experiential education philosophy. William James in the late 1800's furthered a pragmatic approach to philosophy (Donalson & Vinson, 1979). Pragmatism is based on the belief that the value of any learning experience is determined by the degree of learning that occurs from the actions and consequences of such learning experiences. The motto of the pragmatic approach states that theories, experiences and any learning only possess value if they are practical, that is, if they help an individual learn and apply new learning to everyday life (Priest and Gass, 1997).

Due to James’s, place in history during the late 1800’s, and a lack of profile in the educational community, it was left up to John Dewey to spell out most of the educational implications of their jointly held philosophy. This was because Dewey came on the scene later and because he was associated with one of Americas best known centres for education. (Donalson &
Dewey is widely regarded as the father of the experiential education movement and it is his theories that form the basis for many of today's experiential programs. He believed that "experience plus reflection equals education" (Dewey, 1938, cited in Greenaway, 1991, p.16).

Dewey based his philosophy on the educational belief that when we experience something we act upon it, we do something with it, then we suffer or undergo the consequences. Dewey thought that the degree to which we connect our actions with the following, is a measure of the value of the experience. This experience had to be more than mere activity without thought. "His aim was to use experiences to change individuals by helping them reflect and become consciously aware of how actions are connected to the resulting consequences". (Knapp, 1992, p29). This emphasis on experience also led Dewey to advocate the use of a wide variety of educational settings, a thought much in keeping with experiential educators of all persuasions (Kraft, 1981).

Dewey's philosophies have been built upon since forming the foundation of today's experiential programs. Proudman (1992, p.20) outlined the essential elements of good experiential learning which include:

The combination of direct experience that is meaningful to the student with guided reflection and analysis. It is a challenging, active, student-centred process that impels students toward opportunities for taking initiative, responsibility and decision making......Experiential education engages the learner emotionally. Students are so immersed in the learning that they are often uninterested in separating themselves from the learning experience. It is real and they are part of it.

Simply put, participants in experiential programs learn by doing, and from direct involvement in the experience, and the consequences of this involvement. Kolb (cited in Stice, 1987) developed a model to explain how learning occurs during an experiential adventure setting (See Figure 1). He suggests adventure training can be conceived as a four-stage process.

1. **Do**: An activity is constructed to meet certain specific outcomes.
2. **Review**: The participants performance is analysed either through reflection or with the assistance of a facilitator.
3. **Learn**: The participant attempts to see where the learning fits into their lives.
4. **Apply**: The learning is applied to new situations in their lives where behaviours are changed or improved.
This model lends itself to the active process of athletic team development, which is supported by a psychological rationale for learning. Piaget (cited in Sakofs, 1989, p.159) gave an overview of the stages of cognitive development children and adolescents progress through as they develop. These stages are:

1. Sensory Motor (Ages 0-2)
2. Pre-operationalisation (Ages 2–7)
3. Concrete Operationalisation (Ages 7–11)
4. Formal operationalisation (Ages 11–14)

He acknowledges that these ages may vary from culture to culture or as a function of experience.

The common thread linking the first three stages is that the learner is dependent upon concrete interactions with their environment in order to grow and learn. It is not until the later stage of formal operations, that children are capable of mentally manipulating abstract concepts in an effective manner. According to Piaget, most people attain the level of formal operations between the ages of 11 and 14 years, therefore it seems reasonable for educators to develop lessons and training based on an abstract teaching method, as this is more efficient in terms of time, money, and energy, than structuring an experiential lesson.

From my observations of sport psychology training with junior athletes, a similar approach to teaching psychological skills has followed traditional education methods. Training is often one dimensional, and thus devoid of stimulation beyond the abstract manipulations of the
mind, they require the athlete to possess the cognitive capabilities to effectively process this information. That is they must have the cognitive constructs, which Piaget defined as formal operations.

It would seem that the majority of psychological skills training presented to junior athletes is done so at the abstract level, past research however has shown that many adolescents operate below this level of functioning. Maynard (1975) indicated that nearly 85% of all middle school and 69% of senior high school students are still functioning within Piaget's stage of concrete operations. Thus, this research indicated that our methods of teaching require students to use cognitive skills, which they do not possess. The consequence of such action is that students or junior athletes are turned off and become frustrated and dissatisfied with what they are learning. This outcome would mirror my own observations of many junior athletes when they are taught sport psychology concepts in a formal lecture style presentation.

In contrast with traditional educational programs utilising formal operations, experiential programs focus on concrete experiences to foster learning. These programs are more in tune with the cognitive capabilities of the majority of students attending these classes or workshops. One form of experiential learning that focuses on concrete experience is adventure-based training. Its teaching methodology engages students fully in the learning process. The following section gives a brief overview of the adventure-based training field.

ADVENTURE BASED TRAINING

Adventure-based training has evolved utilising the philosophies of experiential education. Priest and Gass (1997, p.17) identify two main areas of focus in adventure-based training, these involve interpersonal and intrapersonal relationships. They then define the key elements in these areas:

The process of adventure-based training involves the use of adventurous activities that provide a group or an individual with compelling tasks to accomplish. These tasks often involve group problem solving, often requiring judgment, cooperation, communication, and trust, as well as personal challenge testing competence against mental, social, or physical risks.

Itin, (2000, p.1) adds to the definition of adventure-based training where he describes how programs are designed to, "Effect a change in behaviors (both increasing function and
positive action and decreasing dysfunction and negative action) especially as it relates to professional, organisational and community contexts.”

Historically, Kurt Hahn is considered the father of adventure-based training. In the 1920’s, he helped found a co-educational school called Salem Schule in Germany. The curriculum at the school emphasised personal responsibility, equality, social justice, respect and service to the community. These principles however were in opposition with the immerging Nazi leadership, and forced Hahn to flee to Britain (Gray, 1997; Priest & Gass, 1997).

It was here that he set up the Gordonstoun School, which was based on the Hahnian philosophies developed at Salem. Due to World War II, Hahn was forced to move his operation to Aberdovey in Wales, where in conjunction with Lawrence Holt a shipping magnate, set up training programs for young seaman that were destined for the armed services at the time. In 1941, the result of this work was the foundation for what became known as Outward Bound. A typical course consisted of orienteering, search and rescue training, athletics, small boat sailing, ocean and mountain expeditions, obstacle course, and service to the local communities. Holt summed up Hahn’s training methods with his comment, “The training at Aberdovey must be less a training for the sea than through the sea, and so benefit all walks of life” (Miner, 1990, p.59).

From these beginnings, adventure-based training spread across the world, with the Hahn philosophy being the basis for training programs that addressed a variety of areas of social decline or societal needs. These included: school based outdoor education programs, (Gray, 1997), adventure therapy programs helping a variety of clientele needing psychological support (Gass, 1993), corporate team building programs helping business people work more effectively together (Priest & Lesperance, 1994), and sport psychology programs preparing athletes for competition (Meyer & Wenger, 1998). Like Hahn’s original programs being, “less a training for the sea than through the sea”, all these modern equivalents attempt to use adventure-based training methods as a means to initiate “functional change” in their participants (Gass, 1993, p.5).

Most of the above adventure-based training programs are founded on the belief that several key elements need to be present for behavioural change to occur. It must take place in an unusual new setting, most often in the outdoors. The learner is placed in a situation that often involves an element of potential risk, and an uncertain outcome. This type of learning requires the participant to ask questions, explore new meanings and possibilities, solve
problems and overcome fears and at the end of the process are asked to reflect and look at what they have learnt, and how they might apply this to other areas of their lives (Ewert, 1989).

Learning through adventure experience, is based on a Piagetian belief, (Piaget, cited in Appleton, 1994, p.3), “that change occurs when people are put in situations outside of their comfort zones, and into a state of disequilibrium”. Nadler and Luckner, (1992, p.7) define disequilibrium as a cognitive process where participants have:

an awareness that a mis-match exists between old ways of thinking and new information. It is a state of internal conflict, which provides motivation for an individual to make personal changes. Disequilibrium must be present for learning to occur.

To return to a new state of equilibrium, an individual is challenged to make changes to their existing thought and action processes. Kraft and Sakofs (cited in Gass, 1993, p.4) put forward a suggested list of key elements that successful adventure programs follow, that would enhance this learning process:

- The learner is a participant rather than a spectator in learning.
- The learning activities require personal motivation in the form of energy, involvement and responsibility.
- The learning is real and meaningful in terms of natural consequences for the learner.
- Reflection is a critical element of the learning process.
- Learning must have present, as well as future relevance for the learner and society of which the participant is a member.

STATEMENT OF PROBLEM

Several areas of concern have come to my attention over the past few years in the area of sport psychology and adventure-based training. Wanting to address these concerns has arisen out of a need expressed by junior athletes with whom I have consulted with. What follows, briefly outlines a chain of events that helped mould my interest in this area.

My experience working with elite school level athletes and witnessing their frustration with formal sport psychological consulting services was something that perturbed me. Why was something with such a potential for bringing about positive learning outcomes for athletes, perceived as such an unconstructive experience? Anecdotally, the lack of opportunities for athletes to “experience” what they were learning appeared to be a problem. I wanted to
rectify this by developing an experiential based program and testing its impact on athletes' psychological skills development and the evolution of team cohesion through the season.

In order to obtain feedback on my ideas, I presented a theoretical paper at the National Sport Coaches Conference in Melbourne titled, “Adventure-Based Training to enhance performance in Athletes” (Boyle, 1998). At the conclusion of my presentation, I was taken to task by a coach and sport psychologist associated with elite netball coaching in Australia. They expressed deep concern at their past experiences with adventure-based training, outlining how they felt their experiences had left some of their athletes emotionally scarred. After deeper analysis of the issues, it became evident that the course provider facilitated the program at a level different from the expectations of the their netball clients. Priest and Gass (1997, p.184) articulated the following concerns when one is planning and providing programming for clients:

You have a responsibility to your adventure program, which provides a service, and to your clients, who consume that service, to be clear as to the level of facilitation you can and should provide. For example, the reputation and credibility of the profession suffers when a client requests therapy with the intent of getting specific prescriptive change, the program provides education with a more general focus, and the leader offers recreation with little or no facilitation! Thus, you have the responsibility to consider the types of programs you can offer, which generation (kind of facilitation) is most appropriate for your program, and how the choice of approach will impact on clients.

After some time trying to explain to these coaches my perspective on what had occurred, I convinced them to be subjects in my upcoming doctoral research. I would provide a service to their teams, in return for subjects for my thesis. I had a strong belief in the power of adventure-based training, and I wanted to demonstrate how a well-facilitated program could make a difference to sporting teams. Hence, my doctoral thesis emerged and my vision for testing these beliefs, were beginning to come to fruition.

In my attempts to find out what other researchers had been doing in this field of study, it soon became apparent that adventure-based training and sport psychology was a relatively new area of investigation, with only a few studies being published in recognised journals (Meyer, 2000; Meyer & Wenger, 1998). Both these studies utilised ropes and challenge course activities in their training of athletes and were exploratory in nature. Outcome and process results were documented, however these studies did not attempt to measure how athletes applied this learning directly to their actual sporting competition arena. Instead, Meyer
focused on how the team generally developed into a more cohesive unit around social relationships. (A more in depth critique will take place in chapter two). Several other unpublished investigations used similar adventure-based methodology to develop team processes with athletic teams (Allain, 1996). While Dale & Conant (1998) attempted to describe the “how too” components of conducting interventions with sporting teams using experiential methods.

These studies have contributed to show how adventure-based training can enhance team cohesion and psychological skills development within sporting teams. However, they did not take that extra step to investigate how team members may be utilising their new skills in their actual sporting performance. Knowing whether athletes can take skills learnt during their adventure-based experience back into their real-life sporting environment is a key unanswered question. While these studies have contributed valuable information to the research line of sporting team development, the shortfall in these previous studies needs to be addressed to further the adventure-based training / sport psychology field.

The final motivation for this study comes from previous attempts to explain adventure-based training interventions. These attempts have often left the reader unclear of the “processes” that may have led to change during the intervention. Neill (1998, p.3), when commenting on past research in the adventure field stated that:

> There is still much unexplained variation in the outcomes of programs. Part of the problem is that empirical research evaluation studies have tended to lack descriptive detail about how the programs were conducted....This lack of detail limited the extent to which further insights about program processes could be gained.

He then recommends that future research provide “more information about the nature of the participants, activities, instructional techniques, and other aspects of the program which may influence the outcomes” (Neill, 1988, p6). This recommendation for future research is not a new idea. Ewert, (1982, p.126), postulated that, “in essence, we have discovered an educational black box; we know something works (the outdoor adventure program format), but we don’t know how or why”. The educational black box Ewert was referring to is the processes that are going on during an adventure program that lead to change in individuals.

Nearly twenty years after Ewerts’ study, there have been increased efforts to open up the “Black Box” and understand what has been going on in adventure training. Gass, (2000, P.72) reflecting on the black box states:
It (the black box phenomena) is a fallacy.......As a field we do know a great deal about which processes tend to help clients the most – whether we choose to use this knowledge becomes the question. This may be distressing to those who would have the “Mountains speak for themselves”, but as a profession, we know we can strengthen the mountains voice by augmenting it with appropriate processes.

Having this understanding of the processes of adventure-based training will greatly enhance program effectiveness. It is critical that future studies (including this study) outline in detail, the key procedures they followed to ensure this information can be replicated in future research, or implemented in the field by those wanting to follow the processes used. Anderson (1994, p1) reiterates this stating that, “it is necessary to understand the process variables that are creating change so that optimal benefits can be derived from the adventure experience”.

STATEMENT OF PURPOSE

As alluded to previously, there has recently been an interest in the application of adventure-based training techniques to the advancement of sporting teams’ psychological skills development and team cohesion (Allain, 1996; Dale & Conant, 1998; Meyer, 2000; Meyer & Wenger, 1998). These studies have utilised the use of rope and challenge course training techniques, along with expeditioning in their interventions. (These will be discussed in more detail in the literature review in chapter two). This present investigation however, attempted to complement and extend this previous research with the addition of several important areas. These are listed in order of importance and included:

- The triangulation of quantitative findings with qualitative methodology, with the aim of providing rich description of the athletes’ experiences, both during the adventure-based training intervention and back in their competitive sporting environment. One aim of this is to document how psychological skills were developed in the adventure environment and used specifically to help sporting performance.

- An awareness to those coaching or providing psychological skills training to sporting teams, that some of the traditional delivery methods for team development and psychological skills enhancement could be structured more appropriately to cater for the stages of cognitive development of our junior athletes (Maynard, 1975). Adventure-based training may provide practitioners opportunities for improved psychological skills delivery, which will increase the enjoyment and performance of our future athletes.
• The provision of descriptive detail of the intervention in the methods section, so the research can be easily replicated, so practitioners can emulate the processes involved in the intervention in their own programs, and to allow for comparison with other models being used in the field of adventure-based training.

• The quantitative measurement of the effectiveness of adventure-based training on the development of team cohesion, using an instrument that has been utilised in previous studies with sporting teams.

This research was conducted at The Scots College Glengarry, outdoor education centre in Kangaroo Valley, and the surrounding Morton and Bungonia National Parks, in NSW, Australia. Three groups participated in the study. All were elite junior state netball teams, preparing for their national championships. They were either from the under 19 or under 17 age groupings. Group one and two, the treatment groups, received an adventure-based training intervention lasting two and a half days. Activities such as experiential team building games, bush walking, caving, camping and climbing were used as a means to teach sport psychology techniques to the treatment groups, with the hypotheses that these skills would be transferable to the athletes’ sporting arena. Group three acted as a control group, they did not participate in the adventure training weekend, but continued conventional training methods at their interstate home base.

A quasi-experimental mixed mode time series research design was utilised. For quantitative data collection, dependent variables were measures of team cohesion of athletes. Independent variables were either allocation to the treatment group that received the adventure-based training intervention, or the control group that did not. Qualitative measures consisted of focus group and phenomenological interviews with players and coaching staff, along with field observations during the intervention, at training and at the national championships; with a focus on issues surrounding team cohesion and psychological skills development.

As outlined below, the quantitative aspect of the research was designed to determine the longitudinal changes in team cohesion. The qualitative data was designed to extract the participants’ perspective as to how the intervention impacted on their netball performance as a team and an individual within the team.
HYPOTHESES AND RESEARCH QUESTIONS

Quantitative Hypotheses
The following hypotheses were designed to direct the quantitative aspects of the research project:

- Athletes who received an adventure-based training program intervention, would show increased team cohesion when compared to a control group.

*Prediction:* Adventure-based training would provide experiential based teaching methods, which will enhance learning opportunities for athletes to improve their team cohesion. This will be confirmed with increased scores in all four sub-scales of team cohesion measured by the “Group Environment Questionnaire” (GEQ), (Carron, Brawley & Widmeyer, 1985).

- The duration of the intervention will see longitudinal improvements in all four sub-scales of team cohesion, when compared to a control group.

*Prediction:* The intervention will provide athletes with skills to improve task and social cohesion both at an individual and group level, the follow up training will ensure these gains are maintained, and continue to improve.

Qualitative Research Questions
The Qualitative aspect of this research attempted to address the following research questions.

- From an athletes’ or coaches’ perspective, what were the major outcomes of the adventure-based training program; and how did they impact most upon the team in the following areas: 1) Personally, 2) In developing teamwork and team cohesion, and 3) Transferability to specific netball competition situations?
  a. What new skills or knowledge about themselves or other teammates did individuals take away with them from the adventure-based training camp?
  b. How did the team or individuals within the team change as a result of their adventure experience? What new skills were developed that helped the team?
  c. Was there any direct evidence that psychological skills learnt during the adventure training camp were directly transferable to netball training or competition?
From an athletes' or coaches' perspective, what processes during the adventure-based training weekend had the most impact on the team? What was it about these situations that made them so beneficial?

a. What elements of the training intervention had the most impact on athletes? Why was this significant for these athletes?

b. How did this camp differ (if at all), from previous adventure-based training camps, which the athletes had been on in the past?

c. How did the outdoor bush environment impact on the program? Was it an advantage or a disadvantage traveling away from their usual training venues?

OPERATIONALISATION OF TERMS

The following definitions are included to ensure all those reading this thesis have an understanding of the key terms and principles that will be discussed throughout the paper.

Experience-based: All learning is experience-based. Whether we hear a lecture, watch a video, or read a book, our learning is "based" on those experiences. Unfortunately, we remember 20% of what we hear, 50% of what we see, but 80% of what we do (Priest, 2000).

Experiential learning: Is founded more on the active doing rather than the passive being done to. In this way, people practice the very skills they are learning and are more likely to maintain the change that takes place. Experience-based learning becomes "experiential" when elements of reflection, support and transfer are added to the base experience (Priest, 2000).

Adventure-Based Training: Adventure-based training is a specific subset of experiential programming where the outcome of the experience is uncertain and may contain risks (physical, emotional, social, financial, etc.). "Direct participation in [these and other] action events" requires us to use our competence to face our fears of the risks and to resolve the uncertainties of the outcomes. In dealing with these challenges, and by turning perceived limitations into abilities, we learn a great deal about our relationships with others and ourselves (Ewert, 1989).
Reflection: Purposefully examining the process of an experience enhances the awareness of learning and leads to changes in feeling, thinking or behaving that derive from that experience (Priest & Gass, 1997).

Isomorphic Metaphors: In an isomorphic metaphor, the introduction is presented as if it is actually the reality of the teams situation. Isomorphs are the parallel structures added to the adventure experience, by the facilitator so clients are encouraged to make certain metaphoric linkages that enhance transfer, because the two learning environments (adventure and sport) become mirror images of one another (Gass, 1991).

Transfer: When change obtained in an experiential program shows up in real life after the training program: this transfer of experiential learning can be enhanced by the use of metaphors and isomorphs (Gass & Priest, 1993).

Facilitation - Since reflection is the key to deeper learning that leads to more lasting change, anything that a “facilitator” does to enhance reflection before, during, or after an experience is called "facilitation."

Team Cohesion – (also referred to interchangeably as group cohesion in this paper). A dynamic process that is reflected in the tendency of a group to stick together and remain united in the pursuit of its goals and objectives (Carron, 1982).

Social Cohesion - Players are motivated toward developing and maintaining social affiliation with their teammates (Carron, 1982).

Task Cohesion - Players are committed to achieving team goals and objectives (Carron, 1982). The degree to which members of a group work together to achieve a specific and identifiable goal (Cox, 1985).

Team Building - An intervention in which groups experientially learn, by examining their purposes, structure, norms, values, and interpersonal relationships in order to increase their skills for effective teamwork (Leibowitz & DeMuse, 1982).

Positive interdependence - Positive interdependence exists when members perceive a link with their teammates. They feel that success is dependent on the success of themselves and their teammates. The players must coordinate their efforts, so that a team task can be realised (Johnson & Johnson, 1991).
Psychological Skills Training – Involves helping athletes learn, acquire and master the self-regulatory skills needed to succeed in sport (Martens, 1987).

In summary, adventure-based training has a growing body of literature to support it as a viable teaching methodology for those involved in the psychological skills development of athletes. This research project will attempt to weave teaching methods from the fields of experiential education with those of sport psychology and test their efficacy in helping elite junior netball players perform to their full potential at a national netball championship. The remainder of the thesis is structured in a traditional format with the literature review preceding the methods, results and discussion.
Chapter 2

REVIEW OF LITERATURE

This study synthesised knowledge from three broad areas: social psychology, sport psychology and adventure-based training. The primary focus of this investigation was on the use of adventure-based training as a means to improve team cohesion and psychological skills training (PST) in athletes, with the goal of enhancing athletic performance. Thus, the outdoor adventure-based training literature was reviewed to document:

1. The processes of adventure-based training in relation to the change process in this study.

2. Techniques and teaching strategies that are utilised to aid the change process.

3. The identification of theories and models that would help explain the data.

The following sections are utilised to help order this section of the literature review.

THE PROCESS OF ADVENTURE TRAINING AND CHANGE: The literature was examined to investigate theories that could apply to the understanding of functional change that occurs because of outdoor adventure experiences.

Areas deemed important in this study included:

- The Wilderness Environment: Which can lead to stress and anxiety, and a willingness to change.
- Group Development Theory: The stages of group development are described as a structure for training programs. These are based on where a group is along this development continuum.
- Group Cohesion literature was delved into to determine how improved cohesion could impact on performance.
- The role of the facilitator in planning, leading an educational training session, and acting as a change agent is reviewed.

PSYCHOLOGICAL SKILLS TRAINING: This section reviewed the literature concerned with:

- The current state of psychological skills training with athletes.
Psychological skills that were important for athletes during this intervention.
Recommendations for future psychological skills programs.
Existing models of best practice were examined to give guidance and direction to the methodology.

ADVENTURE-BASED TRAINING AND SPORT PSYCHOLOGY RESEARCH. This section synthesised the current literature in the field of adventure-based training and sport psychology. Highlighted were studies by Meyer and Wenger (1998), which provided much impetus for this present investigation. A subsequent publication by Meyer (2000) (which was published after the data collection of this study) provided valuable material for contrasting and comparing results, and giving direction to areas requiring further investigation.

PROCESSES OF ADVENTURE TRAINING AND CHANGE

Individual or group change is one of the fundamental aims of adventure-based training programs. Many theoretical models have been put forward to explain how people change. Meyer & Wenger, (1998) identified over fifty change theories in the literature, most utilising stage models for describing and effecting cognitive or behavioural change. These models are concerned with efforts at intentional change, as opposed to maturation or development factors (Gordon, Houghton, & Edwards, 1999).

Much of the research into adventure-based training has been focused on the beneficial outcomes derived from the programs, rather than how the outcomes were achieved. Meyer and Wenger, (1998, p.244) noted that “there has been a call among adventure education researchers and practitioners to move beyond descriptive outcome focused studies, toward an understanding of the processes, which lead to positive outcomes”. When examining the adventure-based training process, they believed researchers should facilitate:

1. An understanding of the inner workings of such programs.
2. The identification of variables and elements related to the success or failure of these programs.
3. The identification of positive elements or procedures that should be continued in future programs. (p.244)

McKenzie (2000, p.19) recently supported this call for greater understanding of adventure programming, stating that, “more information on how the various characteristics of a
program interact to achieve program outcomes would better enable adventure educators to tailor the design and implementation of programs to maximize their effectiveness.

There is a growing body of literature which outlines key critical factors that need to be present in adventure-based training programs, if change is to occur in participants. This section of the literature review describes processes and theories that can be part of the change process for participants of adventure-based training programs.

THE WILDERNESS ENVIRONMENT

Within an adventure-based training context, the wilderness experience, at its very simplest involves stripping people of conveniences and artificiality of life, and placing them in the bush where they can appreciate nature, both its beauty and wildness. In this process, participants learn self-reliance, by discovering or rediscovering literally, how they and the world work (Davis-Berman, Berman & Capone, 1994). This point is reiterated by Miles (1987, p.36-37) when he states that:

Wilderness places also challenge the whole person and thereby contribute to growth.......modern life plagues us with doubt, alienation, and separates us from the natural community and even from ourselves. In wilderness we have a chance to overcome these problems and get in touch with the self and nature.

Interactions between the wilderness environment, and the participant, activate internal processes (Potter, 1995). These processes in turn, are catalysts for personal and social growth. Handley (1993, p.3) corroborates with this notion when he states that:

The wilderness experience is a journey into the unknown where people meet nature as a stranger in kind but a friend in spirit: an experience of risk, of self reliance, of freedom to both fail and succeed, and an opportunity to see ourselves as ourselves, stripped of other world facades and facing the wilderness within.

The wilderness experience is a potentially powerful tool and Potter (1992, p.92) believes that “the most significant and worthwhile purpose of a wilderness experience is the empowerment of self and the magnification of personal awareness and interpersonal skill development”. Along this same train of thought, Bacon (1983) advocates that when individuals and wilderness are united, there is an inherent potential for personal transformation. He argues that wilderness provides the challenges, which are for the most part, instrumental in urging humans towards their highest potential. When viewed in this
light, the wilderness experience has the potential to enhance personal, social and spiritual growth.

It must be stipulated, that the inherent power of the wilderness experience is contingent upon "the successful transition of the participants from their known, accepted and comfortable everyday life reality to the foreign reality of wilderness living" (Potter, 1992, p.93). When devoid of the trappings associated with our modern buffered society, participants become responsible for their very survival. Consequently, for their potential to be fully realised, participants must possess the ability to step out of their perceived comfort zone and face the unknown discomforts of the wilderness episode in a productive manner. Potter (1992, p.93) reiterates this aspect when he states that "it is this unpredictability and loss of convenience and control that form new physical and subsequently emotional and social realities for the students".

The "unpredictability and loss of convenience" that Potter talks of above, has been the focus of process theory development in adventure-based training. This development focused on how the new and unfamiliar nature of the wilderness environment can contribute to the program outcomes of adventure-based training (Kimball & Bacon, 1993; Nadler, 1993; Walsh & Gollins, 1976). Walsh & Gollins, (1976), suggest that the contrast provided by an unfamiliar environment can enable participants to gain new perspectives on the familiar environments from which they came. As alluded to in the introduction, the disequilibrium or dissonance created by the outdoor environment, can provide stimulus for growth and change (Piaget, cited in Appleton, 1994; Ewert, 1989).

Nadler and Luckner, (1992, p.7) described disequilibrium as:

an awareness that a mis-match exists between old ways of thinking and new information. It is a state of internal conflict, which provides motivation for an individual to make personal changes. Disequilibrium must be present for learning to occur.

Nadler (1993, p.61) supported the concept, that an unfamiliar environment was important in adventure-based training, because it causes participants to experience a state of disequilibrium by creating a "constructive level of anxiety, a sense of the unknown, and a perception of risk". It is by overcoming this disequilibrium, through the mastery of the tasks presented by the environment, that participants are believed to experience positive benefits (McKenzie, 2000).
Choosing the appropriate environment that will elicit the correct balance of disequilibrium is quite important if a sound outcome is to be achieved. The flow model of Csikszentmihalyi (1990) proposes that the achievement of a balance between the challenges of an activity and the individual's abilities tends to generate an intense level of concentration coupled with an absorbing level of task involvement. Such intense affective and cognitive involvement is considered to enhance perceptions of satisfaction with the experience and to generate strong feelings of psychological well being, which together enhance the potential for an experience to have a lasting effect on the individual (Scherl, 1989).

Participating in a new and unusual environment requires mental skills that many people do not normally use on a daily basis. In caving, for example, the participant is required to centre attention on a narrow range of concerns, i.e., the space around them, on problems literally at hand, and only concerned with the present time. Attention is also required to be quickly and efficiently shifted between a narrow internal focus, necessary for the acute kinesthetic awareness of monitoring your bodies response to a claustrophobic situation, and a narrow external focus, necessary for effectively navigating through the immediate surroundings, or monitoring your partner nearby (Nideffer, 1976). To accomplish the task of getting through a cave in control of ones emotions, distracting, and therefore irrelevant concerns, must be screened out from ones cognitive processing.

The ability of an individual to be in control of their physical and mental faculties in a stressful outdoor adventure environment like caving, requires the participant to shift attention inward in order to confront and control their heightened level of emotional arousal (Scherl, 1989). Emotion focused coping (Lazarus & Folkman, 1984) of this type has been shown to be associated with affect, which results in perceptions of more intense sensations and experience (Matthews, Carver, & Scheier, 1982). Perceptions of emotional control further serve to provide immediate feedback of performance effectiveness, with feelings of control signaling effective performance and correct task strategy, and fear or anxiety signaling poor performance and the need for strategy adjustment. In this way, the participants learn to know, guide, and command their own performance (Robinson, 1992).

As well as a heightened awareness of ones emotions Robinson, (1983) posits that adventure participants tend to engage in a positive mode of communication that is of a very different nature than everyday life. For example, many sport-training situations have teammates communicating in order to complete the training or competition task. Participation in an
adventurous activity like caving however involves close interaction with another person or members of a group, such that the act of caving becomes a common, unifying bond that usually produces a sense of close identification, and a community of feeling among participants. Within such settings, interactions are proposed as being of a more intense, authentic and meaningful nature and as differing from those usually in evidence in the many noncommittal contacts characteristic of everyday interactions.

In conclusion, the unfamiliar environment variable has been manipulated in many ways through adventure programming. Initiative and problem solving activities, (Rohnke, 1984) and low and high rope courses, (Meyer, 2000; Meyer, & Wenger, 1998; Rohnke, 1989) have been widely used with success, however, several authors suggest that a wilderness environment offers additional advantages and is therefore optimal (Hattie, Marsh, Neill, & Richards, 1997; Kimball & Bacon, 1993; Walsh & Gollins, 1976). The wilderness environment is thought to encourage self awareness and self responsibility by providing rules in the form of natural consequences which participants are unlikely to discount as being unfair or inappropriate (Kimball & Bacon, 1993). In addition, the concrete straightforward nature of the tasks associated with the wilderness environment is believed to encourage mastery (Walsh & Gollins, 1976). The wilderness is also said to be a healing place (Miles, 1987) that has special qualities that can provide personal restoration (Hattie et al, 1987), and transformation, (Bacon, 1983). Finally, Priest & Gass, (1997, p.21), believe that:

The unfamiliarity of the learning environment, that is full of social and physical risks can also be highly stimulating, enhancing the likelihood that clients will learn. Furthermore, the uniqueness can act as an equalizer, placing learners on par with one another; no one has the outdoor experience to be seen as the "expert", so preexisting hierarchies may dissolve or be put aside, allowing people to begin to think for themselves.

In the context of this present investigation, the importance of the wilderness experience was a crucial part of the intervention's methodology. The recommendation's of Kimball & Bacon (1993), Handley (1993), Miles (1987), Nadler & Luckner (1992) and Walsh & Gollings (1976) all articulated the power the wilderness environment had in fostering change and growth within individuals.

Stress

While the above literature review focused on the direct impact that the wilderness environment has on participants in an outdoor setting, another group of researchers and
theorists have focused their attention on the stress levels produced during adventure-based activities. Watts, Coleman, Clure, Daggett, Gallagher, Sustrich, & Wilkins (1999) & Bunting, (1995); found that various outdoor adventurous activities can elicit extreme and rapid increases in heart rate and neuroendocrine responses, that is, the participants' bodies are responding to the stress it is under. In her seminal work, Bunting and her colleagues (Bunting, Little, Tolson & Jessup, 1986) found heart rates in excess of 200 beats per minute, during activities such as rock climbing and abseiling. In looking at the health implications of older participants in adventure programs, Priest & Montelpare (1995) also found heart rates during adventure programming elements, averaging near 167 beats per minute. These results demonstrate the power of the environment and how a new and novel setting can impact on the psycho-physiological responses of participants elevating their stress levels to extremely high values.

Researchers have long claimed benefits for some degree of creative tension or exhilarating stress (Selye, 1950; Yerkes & Dodson, 1908 cited in Bunting, 1995). However, stress has been theorized as being of two types, one negative, known as distress, the other positive and euphoric, known as eustress. Those involved in adventure-based training, have identified the positive benefits of eustress, and have attempted to capitalise on its benefits when programming activities.

Several researchers have attempted to explain how exposure to the stress experiences can enhance growth and change in individuals. Mitchell (1988) believes that without challenge or stress in life, less is required of an individual, and less, therefore, is possible. Jackson & Csikszentmihalyi (1999) indicate that feelings of personal control are strongest in activities of an autotelic nature that is, they are intrinsically rewarding and require full involvement of the participant. If an individual is self-motivated to overcome this stress, then real meaningful outcomes are likely to occur from the experience (Robinson, 1992).

It is interesting to note in the context of this study, that the stress and anxiety caused through the calculated and deliberate selection of particular activities in a particular environment can simulate the stress and anxiety that athletes might experience in competition. The work of Bunting (1995), Bunting, Little, Tolson & Jessup (1986), Priest & Montelpare (1995), Watts, Coleman, Clure, Daggett, Gallagher, Sustrich, & Wilkins (1999) all demonstrated how the outdoor environment impacted dramatically on the physiology and psychology of participants. This isomorphism (parallel structure between the stress in the outdoor
environment and the athletes' competitive environment) will be discussed later in the literature review; it is however, instrumental in the process and transfer of learning, (Gass & Priest, 1993) and is instrumental in the design of the intervention for this study.

Stress and Anxiety

In order to understand the relationship between stress and anxiety in the adventure setting, one needs to delve into the construct a little deeper. Over the past twenty years, sports psychologist have become increasingly concerned about anxiety in competitive situations. The intricate nature of anxiety was first recognised by Spielberger (1966), where he advocated that anxiety be examined in two dimensions, trait anxiety and state anxiety:

1. Trait Anxiety: "is a motive or acquired behavioural disposition that predisposes an individual to perceive a wide range of objectively nondangerous (physically or psychologically) circumstances as threatening, and to respond to these with state anxiety reactions, disproportionate in intensity and magnitude of the objective danger" (Spielberger, 1966, p.17).

2. State Anxiety: refers to the ever changing mood component of an individual and is defined as, "an emotional state characterised by subjective, consciously perceived feelings of apprehension and tension, accompanied by or associated with activation or arousal of the autonomic nervous system (Spielberger, 1966, p.17). State anxiety is further divided into two areas:

   a. Cognitive State Anxiety: which is concerned with the degree to which one worries or has negative thoughts and may result from negative expectations, poor concentration, or disrupted attention (Weinberg & Gould, 1995).

   b. Somatic State Anxiety: is representative of the body's physical state, including physiological reactions such as elevated heart rate, respiration, and increased muscled tension. (Weinberg & Gould, 1995).

In tying stress and anxiety together, McGrath (1970, p.20) defined stress as a "substantial imbalance between demand (physical and/or psychological demands) and response capability, under conditions where failure to meet that demand has important consequences. McGrath proposed a simple model consisting of four interrelated stages (See Figure 2).
These are: environmental demand, perception of demands, stress response, and behavioural consequences. McGrath provides the following framework:

Stage 1: Environmental Demand. In the first stage of the stress process, some type of demand is placed on an individual. The demand might be physical or psychological, such as going caving underground and having to squeeze and crawl through narrow passageways.

Stage 2: Perception of Demands. People do not perceive stress in exactly the same way. This is the individual's perception of the physical or psychological demands. For example, two people that are attending the caving experience may interpret the challenge in totally different ways. A person's level of trait anxiety, can influence how they see the world. High trait anxious people, tend to perceive more situations as threatening than low trait anxious people. Trait anxiety is an important influence at stage 2.

Stage 3: Stress Response. The third stage of the stress process is the individual's physical and psychological response to a perception of the situation. If
someone's perception of an imbalance between demands and response capability causes them to feel threatened, increased state anxiety results, bringing with it increased worries (cognitive state anxiety), heightened physiological activation (somatic state anxiety), or both. Other reactions, such as changes in concentration and increased muscle tension, accompany increased state anxiety.

**Stage 4: Behavioural Consequences.** The fourth stage is the actual behaviour of the individual under stress. If the cavers we met earlier, perceive an imbalance between capability and demand, and feel an increased in state anxiety, performance may deteriorate, or improve, due to increased intensity.

The final stage of the stress process feedbacks to first part of the model. If a participant becomes overly threatened, performing poorly, further demands are placed on the athletes increasing the intensity of the anxiety and inability to perform. (Weinberg & Gould, 1995).

The interaction of stress and anxiety has been investigated in a wilderness adventure setting by several researchers. Bunyan, McMorris, & Macdonald (1990), investigated the changes in anxiety that are experienced by novice kayakers in the period leading up to their first whitewater kayaking experience. Results from the competitive state anxiety inventory 2 (CSAI-2) (Martens, Burton, Vealey, Bump, & Smith, 1990) showed significant changes in both cognitive and somatic anxiety, between 24 hours and immediately before the event. With this increase in anxiety, a corresponding decrease in self-confidence was evident. Bunyan et al, attributed the changes in cognitive anxiety, to the unknown conditions in the river environment, such as rocks, rapids and strainers that the paddlers anticipated they would encounter. Qualitative data supported the increase in anxiety, accrediting a threat to personal safety as the main cognitive distracter. Two main recommendations came from the study (Bunyan et al, 1990, p.30):

1. They advised coaches and instructors to monitor high A-trait individuals as they can pass through optimum anxiety levels quickly and as a result, experience a decrease in performance.

2. They recommended choosing experiences that are progressive and in part similar to the final task, this providing opportunities to talk freely about what is expected and will make the ultimate goal more realistic, therefore reducing anxiety.
While discovering the anxiety levels of participants prior to their kayaking expedition was valuable information, it can be argued that Bunyan et al (1990) missed a great opportunity to teach psychological skills to participants that could have improved their performance and enjoyment of the trip.

Following the same stream of research, Robinson and Stevens (1990) sought to better understand the antecedents of stress in challenging and potentially dangerous recreational settings, this being a canoe expedition in remote northern Canada. They examined four precursors to stress:

1. **Intensity**: task demands and self-efficacy related concerns.

2. **Social Interaction**: social relationships and social evaluation related concerns associated with being part of an interdependent group.

3. **Novelty**: concerns associated with the incongruency and uncertainty of living in and moving through an unfamiliar environment.


Results of this study were similar to Bunyan et al (1990), where stress was highest prior to and during the early stages of the expedition. Robinson and Stevens (1990, p.230) explain that “the result is theoretically logic….uncertainty plays a central role in the development of anxiety, and it is often at the pre-event and initial stages that uncertainty associated with both task demands and personal and group competencies is generally highest”. An unexpected result of the study confirmed “novelty” to be the dominant stressor throughout the expedition, with participants continually adjusting to the remote wilderness setting.

Several key recommendations offered by Robinson & Stevens as a guide for future expedition practice include:

1. The recognition that both distress and eustress are part of an adventure experience and that distress is one of the unavoidable consequences of the search for eustress. For facilitators in the adventure-based training area, the most important factor determining when eustress becomes distress is that of one’s perception of control over event outcomes. When the participant can exert sufficient control over an event, arousal tends to be experienced positively as feelings of competence and enhanced sensations.
2. Pre-trip psychological preparedness training outlining the expeditions scheduling and sources of stress, may help alleviate expedition stress levels.

3. Once the stressors of the expedition have been identified the introduction of stress management techniques to deal with these kind of stressors could be practiced. (ie. positive self talk, muscle mind relaxation).

4. The expedition should have a progressive nature where the demands of the trip are slowly increased giving participants time to adjust to the new stresses like, the outdoor wilderness setting, new social situations, and the routines of expedition living and group dynamics (Robinson and Stevens, 1990, p233).

Recommendations from Robinson and Stevens research have been considered in the design of this present study. In the above point number two, they recommend outlining sources of stress for the activity prior to departure. This was done where safety was a concern, however, withholding some information about what is to come is a way of enhancing the uncertainty and disequilibrium of participants; providing it is done within ethical boundaries (Hunt, 1990). The implementation of psychological techniques to assist participants as outlined in point three was integrated into the methodology of intervention to help athletes cope with the intervention stress, and hopefully arm them with the tools to cope with the pressures of elite sporting competition.

The above review so far, has documented how the outdoor environment can lead to increased stress and anxiety during adventure-based programs. However, several researchers (Mace and Carroll, 1985; Mace, Carroll & Eastman, 1986; 1986a), have attempted to use the adventure setting in a slightly different manner, using it to create stress intentionally to test the efficacy of a stress inoculation training program (SIT) using a model developed by Meichenbaum (1985). It was a multi-dimensional approach to stress management based on the principle of immunisation, meaning participants would receive a training program in stress management prior to exposure to a stressful situation, therefore reducing anxiety levels.

The SIT program comprises three phases:

1. **The Conceptualisation Phase:** This is where participants are educated about the effect of psychological and physiological stress and are encouraged to discuss their own experiences with the goal of establishing a collaborative working relationship.
2. **The Skills Acquisition Phase:** Is where participants are helped to develop a variety of coping skills. The training procedures usually include, relaxation training, imagery, self-instructional training, like positive self-talk, and centering. An emphasis on regular practice to enhance gains should be emphasised during this phase.

3. **The Rehearsal Phase:** Is where participants practice, using the coping skill taught. They are exposed to small, manageable units of stress, which are gradually increased. The rationale for this being, that successfully using the coping skills to overcome small units of stress may have a beneficial effect regarding coping in similar but more stressful situations. This phase can include imagery, behavioural rehearsal, role-playing, modeling, and graduated in vivo practice (Jones & Hardy, 1990).

Once completing their SIT training, Mace & Carroll, (1985) examined the effect of SIT on the level of anxiety experienced by subjects just prior to abseiling from the roof of a 21 metre building. Subjects in the SIT group were compared to a group that received abseiling practice but no SIT training, and a control group that did not receive the SIT intervention or abseiling training. The stress inoculation group had significantly lower self-reported stress intensity scores and observer estimated stress scores, than both the control group and the abseil practice group.

Mace, Carroll & Eastman, (1986) repeated their 1985 study, this time with the addition of the measurement of heart rates, prior to, and throughout the abseil. The results indicated that the stress inoculation group showed significantly less self reported stress, observer rated stress, and state anxiety, when compared to the control group. However, there were no significant differences between heart rates within the groups, where means for the abseil control group were 146 bpm and the SIT group 141 bpm. This indicated that cognitive state anxiety was lower in the SIT group, while somatic state anxiety was the same. This would seem to indicate that athletes high in cognitive anxiety would require different psychological interventions compared to those displaying somatic symptoms.

The linking of a treatment intervention to a specific type of anxiety is known as the matching hypothesis. It is hypothesised that the treatment of anxiety maybe more effective if the method of treatment is directed at the system most activated by the stressor (Maynard, MacDonald, & Warwick-Evans, 1997; Terry, Coakley, & Karageorghis, 1995). Martens, Burton, Vealey, Bump, & Smith, (1990), believe that relaxation therapies, systematic desensitisation, implosive therapy, and biofeedback are expected to be better suited to
reducing somatic anxiety. While, rational emotive, cognitive therapies, thought stopping, and expectancy manipulations should be more effective in reducing cognitive state anxiety. These principles formed the basis of psychological skills training sessions during this intervention.

Maynard et al (1997) found positive support for the matching hypothesis theory. Their experimental group consisted of novice rock climbers who displayed both somatic and cognitive anxious participants. The group however, was only given somatic relaxation techniques. The somatically anxious group significantly reduced anxiety, when compared to the cognitively anxious group. Contrary to these findings however, Terry et al’s (1995) research did not support the need to match intervention to anxiety sub-component. What was interesting though in their results, was the effectiveness of brief pre-competition interventions such as 20 minutes of centering or mental rehearsal in reducing anxiety. The netball subjects of this present study were exposed to small sessions of mental skills training throughout their weekend intervention. This was then continued after the intervention at netball training.

Neither of the above abseil or rock climbing studies investigated the impact of SIT on athletic performance, so a further controlled study was carried out in a gymnastics setting which, it was anticipated, would normally evoke high levels of anxiety (Mace, Carroll & Eastman, 1986a). Subjects were divided into a SIT group, or a placebo-training group. They were then tasked to perform a routine under low and high levels of stress, and were assessed for the same measures of stress as the previous studies, this time however, performance was adjudicated by an international judge. Results displayed a reduction in self-reported and observer reported stress levels. Again, heart rate displayed no differences between groups. However, the most important aspect of this study was the significant difference between the groups performances. The SIT intervention prevented performance disruption and a decrement in overall performance when compared to the control group, which showed clear signs of stress effecting performance.

While Mace et al demonstrated the link between an adventure environment and its ability to elicit high levels of anxiety, it is interesting to note that none of the researchers used any facilitation techniques to link the experimental environment with that of the athletes’ sporting environment. That is, the experimental situation was conducted in isolation to the athletes’ reality, rather than attempting to make links between the two. It is one thing to know that your intervention can reduce stress in an experimental setting, what is critical however, is that
this learning can be transferred to real life situations outside of the experiment. This present study will take that extra step by learning from the limitations of these previous studies. The facilitation techniques used to enhance this learning transfer were of critical importance in this investigation; they will be discussed in the “facilitation” section of the literature review beginning on page 46 of this chapter.

The above studies were all using instruments to assess Martens, Burton, Vealey, Bump, & Smith (1990) multi-dimensional approach to anxiety in sport. This model however, is not universally accepted among sport psychology researchers. Fazey and Hardy (1988) put forward the catastrophe model of anxiety and performance. They propose that anxiety can have either a facilitating or a debilitating effect upon performance depending on the physiological arousal being experienced by the performer.

In follow up studies to test this theory, Edwards & Hardy (1996), examined elite netball players for the intensity and direction of competitive state anxiety symptoms, and the interactive influences of anxiety subcomponents. Results demonstrated that higher levels of cognitive anxiety had a detrimental effect upon netballers’ performances when they were physiologically aroused, but had a beneficial effect when they were not physiologically aroused. Taken together, these results indicated that cognitive anxiety intensity can sometimes exert a beneficial effect upon performance, depending on the level of physiological arousal (Hardy & Parfitt, 1991).

Up until now, much of the research reviewed has relied on active intervention techniques to reduce anxiety. Prapavessis and Carron (1996) however, looked at the effect of group cohesion on competitive state anxiety in athletes. They found that individuals with higher perceptions of task cohesion reported less cognitive state anxiety. They believed that individuals with higher perceptions of team cohesiveness felt lower state anxiety prior to competition because the pressure to carry out group responsibilities and satisfy the expectations of valued members is minimised. In other words, in a cohesive group, the individual feels less pressured.

The theory and studies critiqued in this section were included to build a picture of how the environment in adventure-based training can lead to elevated stress levels for participants. Early research in this area (Mace and Carroll, 1985; Mace, Carroll & Eastman, 1986; 1986a) used the outdoor environment as a “lab” setting where the stress causing environment was simply used to elevate stress as a dependent variable, against the independent variable of
Meichenbaum's (1985) stress control SIT intervention. The effects of stress on performance in the adventure setting were then measured. One of the limitations of these studies, was that there was no attempt to investigate whether the learning that took place during the intervention was transferred to the athletes’ sporting environment. The methodology of this present investigation ensures that this missing step will be investigated. In addition, the role of a facilitator in helping athletes' make the connection between the intervention and their sporting endeavours will be explored.

GROUP DEVELOPMENT AND GROUP DYNAMICS

“If everyone is moving forward together, then the success takes care of itself” (Successories Poster, 1998).

Both adventure-based trainers (Ewert & Heywood, 1991; Kerr & Gass, 1987) and sport psychologists (Weinberg & Gould, 1995; Anshel, 1990) have recognised that for groups to be successful, they must learn to work together. This next section of the literature review examines the essential elements of working in groups, and discusses models of group development which teams pass through as they evolve.

Being a member of a group or a team has several defining characteristics, the main criteria being the interaction among members:

- Group members have to depend on each other and share common goals. There needs to be feelings of interpersonal attraction and open lines of communication. Groups also exhibit task interdependence, they must interact to get the job done (Weinberg & Gould, 1995, p.166).

The importance of group interdependence was also echoed by Johnson and Johnson (1975), when they identified that positive interdependence can only exist when group members perceive that they can reach their goals, if, and only if the other members also do so. One of the keys to reaching this interdependence was, rather than requiring group members to compete to see who is best in the team, group members must work together to achieve mutual goals. When people cooperate, they tend to like each other more, trust each other more, are more candid with each other. Furthermore, they are more willing to listen to, and be influenced by each other. When people compete against each other, then liking, trust, influence, and candor tend to decrease (Johnson and Johnson, 1975). Priest (1995, p.107) recognised that the adventure-based setting:

.... has been used as a means for enhancing trust and trustworthiness between individuals and among group members by placing them in
situations of interdependence. Many adventure activities in which either the actual or the perceived risks are elevated, can enhance participants levels of engagement and their interdependence, thus leading to greater degrees of trusting behaviours.

Walsh and Golins (1976, p.5) point to the need for creating an “interdependent peer group with anywhere from 7-15 individuals who have a common objective”. They identified four group dynamics that support adventure-based teaming in a group, these included:

1. The group needs to be large enough to produce a wealth of differing behaviours, yet small enough so that separate subgroups diversify and form around these behaviors.

2. The group needs to be large enough that conflict will result from differing participant opinions, yet small enough that the group possesses the ability and resources to resolve any conflicts.

3. The group needs to be large enough to create a collective force through which individuals can and cannot reach certain goals working separately, yet small enough that the group can also support each client's individual goal.

4. The group needs to be large enough that a supportive state of reciprocity occurs ie. an exchange system whereby strengths and weaknesses can be traded off within a group, yet small enough that the group members can contribute their individual strengths, and through such exchange, utilise the strengths of others (Walsh and Golins, 1976, cited in Priest & Gass, 1997, p.21).

Walsh and Golins (1976) recommendations for groups were very influential in this study, allowing for new channels of communication to open within the group.

When a sporting or adventure-based training group come together in an attempt to foster group interdependence, the group passes through a number of stages before they are functioning at their optimum. A number of models have been presented in the literature to outline this group development. The foundation model by Tuckman & Jensen, (1977) outlines several stages of development that a group traditionally passes through. The duration of each stage might vary for different groups however the sequence they follow is invariable in the process of team development. The stages are: forming, storming, norming, and performing (Tuckman & Jensen, 1977).
1. Forming includes getting to know each other's positions, strengths and weaknesses. In this stage, learning about how the group functions and handles the positive and negative feelings that result from the lack of clarity, often make the process uncomfortable. Interpersonal relationships are formed and tested, including relationships with leaders or coaches. This uneasy period of development, can be enhanced through opportunities for easy team interaction away from the competitive sporting arena (Tuckman & Jensen, 1977, cited in Weinberg & Gould, 1995).

2. Storming is characterised by rebellion, resistance to control, and conflict among team members. In the end, this can increase the level of trust, however, if handled incorrectly trust can be lost. Generally, infighting occurs as leaders and group members establish their roles and status within the group. Most of this upheaval is social and interpersonal in nature. Open and constructive communication during this time is critical to resolve issues with the team (Tuckman & Jensen, 1977, cited in Weinberg & Gould, 1995).

3. In the norming stage, solidarity and cooperation replaces the conflict of earlier stages. Members begin to work together to achieve common goals. Group cohesion occurs during this stage as team unity builds. This increased team focus, can be an impetus for improved satisfaction amongst team members, it can also be the foundation for future success. Respect for team mates develops, and the focus of the group strengthens around the task at hand (Tuckman & Jensen, 1977, cited in Weinberg & Gould, 1995).

4. Performing is characterised by the group functioning as one unit, all energies are channeled for team success. Members help one another to succeed. The main-focus is on team goals, and working together to achieve success. In a sporting team, the coach can structure individual or team sessions, where players are given feedback on their efforts (Tuckman & Jensen, 1977, cited in Weinberg & Gould, 1995).

In an attempt to determine how best to facilitate this progression of team development, Bisson (1998) examined the effect of sequencing adventure-based training activities in a specific order that matched Tuckman & Jensen's (1977) stages of group development (See Figure 3).
Group Formation Activities: During the forming stage of group development, group formation activities are most appropriate. These would include activities such as: icebreakers, deinhibitors, socialisation games, goal setting, trust building and communication. The focus of this phase is designed to help the members of a new group become acquainted. This progressive set of activities allows participants to experience fun in a safe social setting (Bisson, 1998).

Group Challenge Activities: During the storming phase of group development, activities should focus on group challenge, group problem solving, cooperative team initiatives/games and team tasks to challenge the physical and mental capability of the group. To resolve these challenges, the group must make decisions while cooperatively recognising the need for leadership and fellowship (Bisson, 1998).

Group Support Activities: During the norming phase of group development, activities need to elicit self-confidence and determination from the participant, along with psychological support and compassion from the group as a whole. Activities like climbing wall, abseiling, low or high ropes course activities would be suitable during this phase (Bisson, 1998).

Group Achievement Activities: During the performing phase of group development, activities that challenge the group to rally together around a common set task is most appropriate. Activities such as a caving expedition, backpacking trip, mountaineering or canoe expeditions would meet this criteria (Bisson, 1998).

Bisson (1997) tested the efficacy of the above “hypothetically correct” model, against an “altered sequence” of activities. He found his model was effective in developing team cohesion among participants. Priest, (in press, cited in Bisson, 1997) conducted similar research in the corporate adventure-training sector, with his findings supporting Bisson’s
conclusions. In discussing Priest's work, Bisson (1998, p.7) stated, “these findings are important because they are the first to support the assumption that the sequencing of adventure activities can have either a positive or detrimental effect on the way adventure program participants develop teamwork skills and attitudes”. These findings are also important, in that the above principles will guide the sequencing of training administered to subjects in this present study.

**Group Roles**

As groups develop through each of the above phases, an expectation emerges among the group as to what are appropriate behaviours for members. For a group of athletes to become a cohesive and effective team, they must develop certain structural characteristics. Two of the most important, are group roles and group norms (Weinberg & Gould, 1995).

A role consists of a set of behaviours required or expected of the person occupying a certain position in the group. A teams’ effectiveness can be improved by ensuring players understand (role clarity) and accept their roles (role acceptance), as unclear team roles can hurt team performance. In order to strengthen role clarity, helping players set specific goals will give them direction and focus. Organising opportunities for open communication where each players role is defined with everyone else present, ensures clear understanding within the team of the roles of not only themselves, but their teammates (Weinberg & Gould, 1995).

Role acceptance can also enhance group structure. In a team environment, when there are many roles to fill, players can easily feel left out or disenchanted with the coaches’ decisions. Minimising the status difference among roles and emphasizing a commitment to team success through each individuals contribution, can alleviate concerns players may have (Weinberg & Gould, 1995).

**Group Norms**

A norm is a “level of performance, pattern of behaviour, or belief” (Weinberg & Gould, 1995, p.169). Norms can either be developed formally or informally. Each norm carries expected behaviours and expectations for group members to follow. Because norms can have powerful effects on behaviour, it is imperative for a coach to establish positive group norms to guide the team at practice, in preparing for competitions, in game situations, and when on the road traveling to competitions. Weinberg & Gould (1995, P.169) recommend “involving all team members in decision making about norms”, so as ownership of the norms will be universally accepted. Finally, Zander (1982) advises pointing out to each team
member how their contribution toward developing and maintaining the standards contributes to the team’s success.

In summary, it is critical for sporting teams to learn to work together in the quest to attain a common goal. Johnson and Johnson (1975) identified that positive interdependence can only exist when group members perceive that they can reach their goals, if, and only if the other members also have this belief. One of the keys to reaching this interdependence was to have group members working together to achieve mutual goals, rather than competing against each other to see who is best in the team. Traditional sporting teams have try outs at the beginning of a season in an attempt to identify the best players, this model, if applied to Johnson & Johnson's work, might lead to players having feelings of animosity towards one another, rather than a feeling of interdependence. The inclusion of an adventure-training component at the beginning of the sporting season, was an attempt to foster this team interdependence, ridding the team of any divisive cliques or dysfunctional team attitudes.

The work of Walsh & Gollins (1975) gave the present investigation guidelines for the implementation of group work, which would test the communication and group dynamic processes of the intervention teams. Team and individual reflection sessions were set up throughout the adventure intervention to help team members resolve conflict and open the channels of honest and functional communication.

Finally, Tuckman & Jensen (1977) described the stages of group formation, which ranged on a continuum from forming, storming, norming through to performing. Having knowledge of this information is critical in the planning phases of an adventure intervention. Bisson (1997) identified the importance of matching a groups stage of development with a correct sequence of activity that mirrors this stage. He found that following this model, could enhance cohesion in groups. As this investigation had a goal of improving team cohesion, these recommendations were deemed extremely important and incorporated into the methodology of the intervention.

**GROUP COHESION**

Group cohesion is related to group development and group dynamics and has been defined as “a dynamic process, which is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives” (Carron, 1982, p.124). Cohesion is described as a multidimensional construct that includes task and social aspects, each of which reflects both an individual and a group orientation (Carron, et al, 1985) (See Figure 4).
Carron, Brawley & Widmeyer (1998, p.217) outlined in detail these specific constructs constituting perceived cohesiveness in teams. The following highlights these four constructs:

**Group Integration-Task (GI-T)** Individual team member’s feelings about the similarity, closeness, and bonding within the team as a whole around the group’s task; for example, “Our team is united in trying to reach its goals for performance.”

**Group Integration-Social (GI-S)** Individual team member’s feelings about the similarity, closeness, and bonding within the team as a whole around the group as a social unit; for example, “Members of our team do not stick to together outside of practices and games.”

**Interpersonal Attraction to the Group-Task (ATG-T)** Individual team member’s feelings about his or her personal involvement with the group task, productivity, goals and objectives; for example, “I do not like the style of play of this team.”

**Interpersonal Attraction to the Group-Social (ATG-S)** Individual team member’s feelings about his or her personal acceptance, and social interaction with the group; for example, “some of my best friends are on this team.”

Using these constructs for his team cohesion model, Carron (1982) developed a conceptual framework for systematically studying cohesion, within this model he identified four antecedents that could affect the development of cohesion (See Figure 5).

1. **Environmental Factors:** refers to the normative forces holding the group together, such as geographic location, age grouping of team eg). If a netball player that lives in Sydney makes the New South Wales Under 17 netball team she is confined to playing with that team, this is a force that is constraining her options for playing the sport.
2. **Personal Factors**: refers to the individual characteristics of group members which attract them to the group. Bass, (1962, cited in Weinberg & Gould, 1995) identified three primary motives: a) task motivation b) affiliation motivation & c) self-motivation. Task and affiliation motivation are closely linked to task and social cohesion. Self-motivation refers to the attempt to obtain personal satisfaction by performing up to one’s level of ability, which contributes to both social and task cohesion.
3. Leadership Factors: include the leadership style of the coach, ranging from democratic to autocratic. The coach-athlete relationship where the coach fosters rapport and understanding with each player. The coach-team relationship where leadership can vary from task to interpersonal depending on situational factors.

4. Team Factors: the above three factors all contribute to cohesion however there are some general team factors which have a strong independent impact upon the presence of cohesiveness, these forces are within the group as a whole. They can be considered under two categories: Social forces and task forces. If a group is predominantly socially focused they may have strong cohesion, but the team will generally be unsuccessful. If the team is too task focused, it is possible for individuals to lose sight of the team goal. Understanding the nature of the sport ie) whether it is a co-acting or interacting sport, can result in varying degrees of cohesion.

Carron (1982) published this model with the goal of having future researchers structure their research projects around these antecedents, therefore building a stronger picture as to what factors are influencing cohesion.

Cohesion and Performance

When using a conceptual model to guide research, one would imagine that the measurement of team cohesion would be straightforward, however this has not been the case as the following indicates. Prior to Carron et al (1985) many researchers used instrumentation that did not include a measure of task cohesion. As a result, there were inconsistent findings across the board with team cohesion research. Researchers found both positive findings (Ball & Carron, 1976; Widmeyer & Martens, 1978) and negative findings (Landers & Leueschen, 1974; Lenk, 1969) when conducting team cohesion research. The arrival of the Group Environment Questionnaire (GEQ) however, addressed this weakness in measurement.

A second explanation for inconsistent findings in the team cohesion literature may result from the diverse nature of task demands that sporting teams face. Interactive sports, for example, like netball, require teammates to work together to achieve their team goals. Cox (1985, p.292) supporting this stance, stated that:

Team cohesion is most effective at facilitating high performance when an interactive as opposed to coactive sport is involved. Coaches in sports such as basketball, volleyball, baseball, soccer, and football need to be more concerned with teams cohesion than coaches of golf, archery, or bowling.
The results of research tend to suggest that positive cohesion-performance relationships are reported more often for sports that are interactive and requiring extensive coordination, and cooperation among team members. Conversely, coactive sports requiring independent performance, with little interaction such as tennis, typically show no relation between cohesion and performance (Weinberg & Gould, 1995). While anecdotal, recent media interviews with elite sporting athletes from the Rider Cup (Golf) and Davis Cup (Tennis) would suggest that team cohesion does play a big part in overall team performance. Further research needs to be completed in this area before any clear-cut position could be put forward.

The question as to whether performance leads to cohesion, or cohesion leads to performance also warranted investigation. Carron & Ball (1997) determined that having a high cohesion at the start of the season did not necessarily lead to high performance at the end of the season. Inversely, they did find that the teams, who performed well at the beginning of the season, had higher cohesion at the end. Subsequent research suggested that the performance-cohesion relationship was circular where performance affected cohesion then, the changes in cohesion affected subsequent performance (Landers, Wilkinson, Hatfield, & Barber, 1982).

**Building Team Cohesion**

There are many co-acting variables that may affect team cohesion. Weinberg & Gould (1995) subdivide these into two areas. 1) What can the coach do? And 2) What can team members do?

**What can the Coach Do?**

- **Explain individual roles in team success.** Coaches should clearly outline individual roles to team members, stressing the importance of each player's role in the journey toward team success.

- **Develop pride within subunits:** In sports where sub-units exist players should be encouraged to support one another. For example, players who are reserves need to be focused incase they are subbed into the game. Likewise, players who do not get selected in the starting line, need to be supportive from the bench rather than hold negative grudges.
- **Set challenging team goals**: Setting challenging team goals has a positive impact on individual and team performance. Taking time to set goals, and strategies to achieve them can guide the players focus.

- **Encourage team identity**: Developing ideas which sets the team apart from other teams, can have an impact on cohesion. Team uniforms, team chants, or common experiences can all help.

- **Avoid the formation of social cliques**: Cliques often form with small groups of players excluding others from their social group. This has the ability to alienate team members, causing friction, and in the end, the whole team can suffer.

- **Conduct periodic team meetings to resolve conflict**: Positive communication flow throughout the team is critical. Opportunities for the team to discuss pertinent issues that could impact on the team should be regularly scheduled. The coach should facilitate this session ensuring the discussion remains focused and positive.

- **Know something personal about each team member**: Coaches can monitor athletes’ lives and ensure the outside pressures are not affecting their performance.

### What can Team Members Do?

Team members, as well as coaches can impact on team cohesion; so individual members can constantly do their part in bringing the team closer. Rather than expand on this area a brief summary will soon reveal the logic of this process.

Team members can: get to know teammates better; help teammates wherever possible; give each other positive reinforcement; be responsible; communicate openly and honestly; resolve conflicts quickly; and give 100% effort at all times.

Incorporating these recommendations was an important part of the intervention design.

### Research in Team Cohesion

There is a plethora of research in the team cohesion area, very little however, has examined the effects of an adventure-based training (ABT) intervention on team cohesion in a sporting team context. (The studies that have utilised ABT with a sporting team will be reviewed in
the final section of the literature review in chapter two, under the heading of “Adventure-based training and sport psychology”). There is one study however, from the team cohesion and sport literature that is pertinent to this study.

Prapavessis, Carron, & Spink (1996) attempted to measure a team-building intervention with several teams of soccer players. The entire group was initially pre-tested for existing levels of team cohesion using the Group Environment Questionnaire. They were then subdivided into three treatment groups.

- A team-building group which received training from coaches who had been through a specific training program that up-skilled them in the enhancement of team cohesion.
- A placebo attention control group, which was designed to control for attention effects.
- A control group that received no extra training.

At the conclusion of the interventions, athletes were post tested using the GEQ. Results showed no significant improvement across any of the treatment groups.

After reading the results, those aware of what elements are needed in an intervention to elicit change, might hypothesis that no change occurred because of a lack of “disequilibrium” in the intervention. Nadler & Luckner (1992) noted that for change to occur within an individual or group, several key criteria must be present.

1. They must be put into a situation that are new or novel.

2. The intervention must have challenge that puts participants into situations outside of their comfort zones. As a result, players need to adjust their existing ways of thinking, and develop new ways of coping with stress.

Trying to introduce team building into situations, which the athletes were very familiar with, along with the fact that the coach was the change agent, may be a combination that reduced the chances for change to occur in the above study. Incorporating an independent change agent in a new and novel setting may have resulted in a different outcome. (This will be investigated in this present study).

In summary, Carron (1982, p.124) developed a model for group cohesion defining it as “a dynamic process, which is reflected in the tendency for a group to stick together and remain
united in the pursuit of its goals and objectives”. Four separate constructs or sub-scales were identified that made up the multidimensional cohesion model, these were:

- Group Integration-Task (GI-T)
- Group Integration-Social (GI-S)
- Interpersonal Attraction to the Group-Task (ATG-T)
- Interpersonal Attraction to the Group-Social (ATG-S)

Carron also identified four antecedents that could affect the development of cohesion; these were environmental factors, personal factors, leadership factors and team factors. This research project followed Carron’s (1982) recommendation of utilising these four areas as a point of reference for investigating which of these factors were impacting the most on a team’s cohesion.

In an attempt to explain the variability in team cohesion research results (Cox, 1985) noted that the research tended to suggest that positive cohesion-performance relationships were reported more often for sports that are interactive and requiring extensive coordination, and cooperation among team members. Conversely, coactive sports requiring independent performance with little interaction such as tennis typically show no relation between cohesion and performance. This factor will need to be considered when comparing and contrasting research findings from this present investigation, with previous research in the field.

Weinberg & Gould (1995) recognised that the coach and players have an important role in enhancing cohesion within a team. Key areas that coaching staff could work on developing included: Explaining individual team roles in team success; developing pride within the team; setting challenging team goals; encouraging team identity; avoiding the formation of social cliques; conducting periodic team meetings to resolve conflict; and getting to know the players as individuals. Team members had to follow a process of positive interaction with their peers, with a focus on 100% effort, and open and honest communication. These issues underpinned the intervention methodology. From this, activities were designed to address and foster the development of key facets of cohesion.

This intervention attempted to impact team cohesion by incorporating the above recommendations in a team camp training situation in a new and novel adventure setting. The inclusion of an independent change agent was designed to facilitate this process.
FACILITATION

The role of facilitation in the change process is of crucial importance with many areas of the adventure-based program requiring careful planning in order for change to occur. Priest (1996) outlined the relationship among change, program type, and facilitation techniques. He postulates that change can be directed by the participants and facilitated by the leader toward feelings, thinking, behaviour, and misbehaviour. In turn, these directions dictate the program type. Figure 6 summarises Priest’s ideas.

<table>
<thead>
<tr>
<th>TO CHANGE</th>
<th>ANTICIPATED OUTCOMES</th>
<th>PROGRAM TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feelings</td>
<td>New skills, energy, enjoyment, fun</td>
<td>Recreational</td>
</tr>
<tr>
<td>Thinking</td>
<td>New knowledge, attitude, awareness</td>
<td>Educational</td>
</tr>
<tr>
<td>Behaviour</td>
<td>New ways to act &amp; increase function</td>
<td>Developmental</td>
</tr>
<tr>
<td>Misbehaviour</td>
<td>New ways to cope &amp; decrease dysfunction</td>
<td>Therapeutic</td>
</tr>
</tbody>
</table>

Figure 6: Matching program type with change requirements. (Priest, 1996, p.23)

Matching the change requirement of the group, with the program type, begins long before a group arrives for their adventure experience. Needs assessment and setting clear goals for the program will help identify what kind of change participants require. Priest (1996, p.23) gives an overview of the four programming possibilities.

1. **Recreational Programming**: is aimed at having fun, learning new activities or being entertained through adventure. This method changes the way people feel by re-energising or re-creating them. This learning may be used in life long recreation by the individual. An example might be learning how to kayak.

2. **Educational Programming**: is aimed at understanding concepts, enriching the knowledge of old concepts or generating an awareness of previously unknown needs through adventure. Educational programming changes the way people think, by allowing them to see things in life from a fresh perspective. They gain new attitudes and transfer these attitudes to the way they conceptualise daily life. An example might be demonstrating the impact of a new way to solve problems.

3. **Developmental Programming**: is aimed at improving functional behaviours and training people to behave in new and different ways. Developmental programs
change the way people behave, by showing them successful ways to interact on their own or with others. These new behaviours are transferred to other life situations. An example might be learning new positive ways to trust and communicate with each other, or learning new ways to cope with the high pressures of sporting competition.

4. Therapeutic Programming: is aimed at reducing dysfunctional behaviour, and encouraging people not to behave negatively. These programs show participants the impact of their behaviour and offer alternative behaviours that would be more functional in their lives.

An often-overlooked factor in the adventure-based programming field involves assuring the correct facilitation techniques are being utilised for the type of program one is conducting. Having appropriately trained staff who are experienced in facilitation and ensuring correct application of these techniques is of utmost importance and will greatly enhance the delivery and outcomes of a program. Knottenbelt (2001) outlined three key principles that a facilitator should strive for if they are to have an impact on their clients lives, these include:

1. A good facilitator must build rapport. Facilitation is about connecting and building a relationship centred on trust and mutual respect. This will take time!

2. You must believe in the group you are working with. They quickly sense whether you are genuine or simply going through the motions. You must exude your passion and belief in people. It is difficult to achieve point one without having point two in your heart.

3. You must strive to be inspirational. By inspiring people, they will reach and go beyond those limitations that restrain each one of us. We can all achieve miracles and dreams way beyond our wildest dreams, it often however, requires the guidance of a teacher or facilitator to unchain us from those limitations.

Priest, Gass & Gillis (2000, p.33) in summarising the importance of staff who lead adventure based experiences, stated that: "the effectiveness of a learning experience depends heavily on the quality of its facilitation...Facilitation becomes everything done before, during, and after learning experiences that enhance the reflection, integration, and continuation of change.

Stages of Adventure Facilitation

The facilitation process has undergone an evolution over the past few decades, passing through several distinct stages of development. The elements in each stage are different, with
the earlier stages being the foundation for more recent stages. Priest and Gass (1992, p.23) grouped each of these stages in order of development and sophistication.

1. **Letting the experience speak for itself.** "Learning and doing" ie. here the participants just have a good time making their own meaning out of the experience.

2. **Speaking for the experience.** "Learning by telling" ie where the facilitator tells the students what they have learnt and what they can improve.

3. **Debriefing the experience.** "Learning through reflection" ie. participants reflect on their experience and through guidance from carefully designed questions bring up points and issues for open discussion in the group.

4. **Frontloading the experience.** "Direction with reflection" ie key learning points are given before the experience occurs guiding participants in the direction of important issues. The debrief process at the end simply looks at the success or failure of these key points.

5. **Framing the experience.** "Reinforcement in reflection" ie the adventure experience is put together in such a way that it is a “metaphor”, or a mirror image of reality for the participants. If learning and change can occur in the adventure experience, then all that is required is for the participants to implement these same changes back in their normal lives.

While all models have their place in adventure-based training, the latter three played a major role in facilitating the netball /adventure experience in this study. The following subsection addresses these later three models in more detail.

**Debriefing the Experience**

Priest and Naismith (1992), explored the above third generation model, debriefing the experience, "Learning through reflection". They believe that in order to learn from an experience, participants must actively reflect on their experience by evaluating the lows and highs, the mistakes and the triumphs, consider the impact of actions and decisions, and by doing so will be able to anticipate consequences and commit to different behaviours for next time. In many cases, participants require help in achieving these tasks, and the open forum debriefing process is used by a facilitator as a means to actively guide the participants through this process.

Debriefing is conducted by a facilitator who has been observing the group through their experience, taking note of actions and behaviours that will form the basis of the debrief. Questioning during the debrief can either be “problem focused”, where the facilitator focuses on what went wrong or did not work, or “solution focused”, where the facilitator asks
questions that draws out successful events that the team could benefit from (Priest & Gass, 1997b). The facilitator is responsible for setting the group norms in the debriefing process, enforcing safety and developing rapport with the participants. Facilitators can assist here by first revealing or disclosing something about themselves before asking questions of the group. In choosing a leadership style to facilitate a debrief session, Jordan (1987, p.74) recognised that:

An overly aggressive or autocratic leader or an overly lackadaisical or laissez-faire leader may inhibit both the number and quality of participant contributions...The leader should take care not to inadvertently tell participants how they are functioning and feeling, but rather probe and verbally guide the participants into discovering their own emotions and attitudes.

Gass (1993) and Gass & Gillis (1994) point out that the earlier mentioned "debriefing the experience" model is adequate for when one is operating in the recreational or educational programming field. However, there needs to be a more sophisticated approach when operating in the developmental or therapeutic domain. Such as, working with groups where improving functional behaviour and training new and different behaviours is the purpose, as would be the case with the training of netball teams in this present study.

**Frontloading the Experience**

Unlike the "debriefing the experience" model where facilitators debrief participants at the conclusion of the activity, the frontloading model operates on the theory of addressing learning issues, before the activity and learning have actually occurred. Rather than just provide material for discussion, as is the case with the "debriefing the experience" model, frontloading serves as a means to:

Foster actual change during the activity. Not only would clients be working on issues of greatest importance to them, but they would also use the strongest part of the adventure experience (ie., the experience itself) to work on resolving issues (Gass 1993, p.226).

Priest and Gass (1994, p.8), suggests a five stage framework for frontloading a group which includes:

- **Revisit**: what behaviours or performances were promised and learned from the last activity.
- **Objectives**: the aims of the activity and what can be learned or gained from this experience.
• **Motivation:** why the experience might be important and how it relates to life.

• **Function:** what behaviours will help bring about success and how to optimise these.

• **Dysfunction:** what behaviours will hinder success and how to overcome these barriers.

Having these questions answered up front, gives the activity a certain structure and focus where learning is not left to chance as can be the case with the “debriefing the experience” model. As Priest (1995. p.8) states, frontloading provides “an emphasis on learning rather than reactive discussion”. That is, the learning is proactive. This style of debriefing was used frequently during the intervention to help players focus on key areas that needed developing.

Another variation to the frontloading technique, which was utilised in this intervention, was “frontloading with double binds” (Priest & Gass, 1994). With this variation of the frontloading technique, the team is placed in a win-win bind. A set of expectations for the upcoming trip is negotiated by the group and the facilitator, with this outlined the activity then commences. The participants then have two choices, they can follow the guidelines they set for themselves, with the post activity discussion focusing on the behaviours that led to this success; or they can choose to carry on with dysfunctional behaviours, with the teams lack of adherence to their own guidelines becoming painfully obvious in a post activity debrief.

**Framing the Experience**

The next generation of facilitation, “framing the experience”, is regarded as one of the more sophisticated facilitation techniques, and when conducted well provides great opportunities for participants to change. Priest and Gass (1997, p.210) outline the essence of this model stating that framing:

> Focuses on matching a client's needs, mind-set, and objectives with an adventure experience in such a way that successful completion of the adventure experience mirrors successful resolution of the client’s issue back in their everyday life.

The key to the success of “Framing the Experience” lies in the use of metaphor. Technically a metaphor refers to a figure of speech, wherein one thing is likened to another in such a way that the comparison throws new light on the subject. In adventure-based training, metaphor
is used in reference to an anecdote, story, or set of experiences that somehow clarify a real life situation. Bacon (1983, p.5) believes:

> The key factor in determining whether experiences are metaphoric is the degree of isomorphism between the metaphoric situation and the real life situation. Isomorphic means having the same structure. When all the major elements in one experience are represented by corresponding elements in another experience, and when the overall structure of the two experiences is highly similar, then the two experiences are metaphors for each other. This does not imply that the corresponding elements are literally identical, rather, they must be symbolically identical.

As can be imagined, the facilitator needs a thorough insight into the client group they are working with in order to prescribe appropriately “metaphorically framed experiences” that will elicit change. Examples of how this framing technique was used during the intervention, can be found in the methodology section of Chapter three, under the heading, “Research Design; Intervention Weekend”.

**Transderivational Search**

During the planning and researching of this project, much skepticism was encountered as to whether athletes could transfer learning from the adventure-based training bush setting, to the netball court. In answering critics the following explanation is offered to explain how this process might work; it is known as the transderivational search.

Being able to “transfer” the learning that has taken place during an adventure-based learning experience, as well as have the participants use this new knowledge back in other areas of their lives is one of the real challenges facing adventure programmers. Gass (1985, p18), emphasised that, “any outdoor programs credibility is based upon the positive effects they have on the participants’ futures”. An explanation for how this transfer occurs comes from the field of neuro-linguistic programming. It is known as the transderivational search.

When using a metaphoric model in adventure programming the whole experience is designed to mirror real life situations (isomorphism). Participants have to develop new strategies to solve problems that will lead to successful resolution. A successful outcome in the adventure setting provides skills that can be used in other areas of the participants’ lives. The glue that fastens the metaphors so tightly to real life situations, the reason that changed behaviour on a course will generalise to the regular world, is the transderivational search (Bacon, 1983).
A transderivational search is essentially the process of searching back through one’s stored memories and mental representations to find the personal reference experiences from which a current understanding or mental map has been derived (Bacon, 1983). When a person is asked to, “go inside and think of a time when ...”, they will typically do a transderivational search, ie, search their memories, beliefs, wishes, etc for an event which matches the meaning of the experience they are having. Transderivational searches are constantly occurring during any attempt to understand experiences we are having. “Human beings are cognitively designed so that they can make sense of the present, only in terms of the literal experiences in their past”. (Bacon, 1983, p.6)

If one does not have experiences in their past to help make meaning of their new experience, one then has to initiate fresh transderivational searches, which in turn reorder their concrete memories into a new alignment. This ability to learn a new strategy by reordering and reorganising concrete memories is the fundamental process and the active ingredient in traditional psychotherapy and education (Bacon, 1983). This is also the way in which anecdotal and experiential metaphors help people change and grow, however, the metaphoric approach is usually more powerful and more permanent than conventional approaches as it draws on all the senses, not just the intellectual level as with say traditional classroom teaching. In addition, the metaphor usually matches whole patterns of experience rather than single concepts. The process of matching a whole pattern is so powerful that the metaphor and its real life counterpart become entwined as one (Gass, 1993).

At the conclusion of a successful metaphoric experience, participants now have two ways to respond to a new situation, the old way or the new. The latter option leading to new confidence and mastery of the task in which they were involved. This new strategy will now be available in any real life situation, which is isomorphic with the metaphoric experience. Bacon (1993, p.10) believes that “there is no question that in well formed metaphors, there will be profound and meaningful links with isomorphic real life experiences”.

In order to effectively generalise the learning from the participants adventure-based training back to real life, the course components have to be highly isomorphic. If they are, and if the course activities have provided successful resolutions to formerly unproductive behavioural and/or cognitive patterns, then there will be functional change in real life (Bacon, 1983). Bacon however advises that for this transfer to be successful instructors leading these kinds of interventions should possess the following:
1. The instructor must understand the covert psychological messages implicit in the typical activities of an adventure course.

2. The instructor must have the ability to adapt the course activities so that the course metaphors are maximally isomorphic with the needs of the client group.

3. The instructor needs to master a set of techniques that can help facilitate successful resolutions to the metaphoric challenges.

4. Know the groups contexts and needs.

In summary, adventure-based training can use isomorphic metaphors to help link the adventure experience to selected real life situations. Due to the principles of the transderivational search, changing the metaphoric experience changes the real life situation for the participants. To transfer learning, adequate isomorphism and framing of the experience must be present.

Facilitation Research

To date there has been scant research into the efficacy of facilitation techniques to aid the change process in adventure programming. Doherty (1995), attempted to quantitatively research the effect of different facilitation styles on university students social interaction following a one day ropes course. Overall, the results indicated positive support for learning using the frontloading style when compared to groups who’s interventions involved the “Letting the experience speak for itself” model or “Debriefing the experience” model. These results however were achieved with intact groups and one should be cautious if generalising to other populations.

Priest (1996b, p 40) investigated the effect of two different approaches of using the “debriefing the experience” model. One group received a “general” debrief which focused on “any and all issues arising from the experience”, while the other received a “specific” debrief, with discussion “targeted solely at the desired outcome for the program”. These were then compared to a control group who did not receive the intervention. Results showed that those receiving the specific debrief, accrued greater benefits which lasted longer than those receiving the general debrief. This concept is important for transfer from the adventure setting to the sporting arena.

Boyle (1999) replicated Doherty’s (1995) study by testing the effect of three different facilitation techniques on the locus of control of school students after a caving experience. He found that “framing the experience” resulted in an effect size (ES) of .43 when compared to the other treatment group that received a “debriefing the experience” style of facilitation.
(ES .1), and the control group that received only a caving experience without facilitation (ES 0). (An effect size of between .4 and .5 is considered a medium to large change, with the average in adventure education settings being between .3 and .4. Cason & Gillis, 1994, Hattie et al, 1997).

In summarising the research into these latter generations, it is clear that one can facilitate changes before and after the experience. The facilitator has an important part to play in the structure and implementation of these more powerful facilitation techniques. In this present study the use of frontloading and framing the experience were crucial in assisting athletes to make connections between the adventure experience and their sport, while the former “debriefing the experience” was mainly used to resolve interpersonal issues with the team.

Edgework

Priest & Gass’s, (1997) “stages of adventure facilitation” (that were discussed earlier on page 46) all involved techniques that were utilised either prior to or at the completion of an adventure activity. Nadler & Luckner (1992) however, posited that if processing the adventure experience was left to only the beginning or the end of an activity, then a major opportunity to help participants could be lost. They proposed a model called “edgework”, where facilitation takes place right in the heat of the activity.

Early in the literature review, it was described how being in an activity in an unfamiliar environment could lead to increased stress and anxiety, eventually leading to a state of disequilibrium. It is the participants application of new ways of thinking or behaviour, with the objective of returning to equilibrium, which was the main goal of this style of program. During this state of disequilibrium, participants may find themselves at “the edge” of their comfort zone. Nadler & Luckner (1992, p.59) believe the edge is a place where major learning into oneself may occur, and can be a catalyst for change. It provides real possibilities for gaining new insights into one’s life.

When at the edge, a person has two choices (See Figure 7). They can stay within their comfort zone, retreating or turning back from the edge, or they can push themselves to a breakthrough or success into new territory. Nadler & Luckner (1992) summarise their beliefs in “edgework” by stating that:

Edgework puts this moment at the edge under the microscope and examines the components. Old and outdated edge patterns are recognised and altered or discarded in favour of trying some new behaviours, thoughts,
and feelings. These new actions or resources can then become the gems to
treasure, transfer, and generalise the experience to the new territories of the
office, home (sporting field) or school (p.74).

Figure 7: Edgework. (Nadler & Luckner, 1992)

Facilitator support and guidance to participants at this time can have major positive effects in
helping participants over their edge and into new unexplored territory (Nadler & Luckner,
1992). Having expanded their edge or comfort zone, results in participants experiencing
increased self-esteem, growth, and confidence (Nadler, 1995) (See Figure 8). The program
design for this intervention utilised Nadler & Luckner's edgework model when there were
opportune teaching moments with participants at their edge, like when they were under
extreme stress during the caving part of the intervention.

Figure 8: Expanding the comfort zone. (Nadler & Luckner, 1992)
In summary, the matching of client's goals and preferred learning styles with the skills of the facilitator, is of critical importance for the success of any training program. In the adventure training setting, Priest (1996) emphasised the importance of a needs assessment and setting clear outcome goals, so that the kind of change participants required was identified. With this information, a training program could be developed ranging in a design continuum from recreational, to educational, through to developmental or therapeutic. The degree of sophistication and planning increases, depending on the model chosen.

Research indicated that learning from the adventure environment could be transferred back to the client's life outside the training venue (Boyle, 1999; Doherty, 1995; Priest, 1996b), however, this learning transfer can be greatly enhanced and influenced by the facilitator who is working as a change agent. Bacon (1983), Nadler & Luckner (1992) and Priest & Gass (1997) recognised that more advanced facilitation techniques could greatly improve the "isomorphism" of the training environment to aid in this learning transfer. Facilitation techniques such as "debriefing the experience", "frontloading the experience", "framing the experience" and "edgework", were all utilised in this present investigation in an attempt to ensure maximum chance of learning transfer from the adventure experience to the netball court.

A criticism this research project received during its conception, was that it was pointless taking athletes away from their normal athletic training venue, as the adventure environment had nothing to do with their sporting world or endeavours. Bacon's (1983) work on "transderivational searches", which explained the process of transferring learning from the adventure setting to other areas of one's life, was seen as important in addressing this concern as it provided theoretical support for the chosen methodology and design of this present investigation.

The role of the facilitator in adventure programming cannot be underestimated. The facilitator is probably the most important ingredient that goes into any training intervention whether it is conducted in an adventure setting or back at netball training.
PSYCHOLOGICAL SKILLS TRAINING

Overview

Many coaches know of the frustration of working with a team of talented athletes, who excel in practice but fail to live up to their potential during competition. In any sport, a team's success or failure is dependent upon a combination of physical skills, (e.g. strength, speed, balance, co-ordination, and sport specific skills) and mental skills (e.g. concentration, anxiety control, and confidence). Anecdotally, coaches are often heard espousing, for example, that sport is 50% mental, 50% physical (Weinberg & Gould, 1995).

Most serious athletes however, allot ten to twenty hours to physical training per week, yet, little time to the psychological side of preparation. With the advances in physical and technical skills training for athletes, most teams come to competition being equal, how they perform on the day usually determines the outcome. The team that wins is usually the one that applies their psychological skills best to the situational circumstances that unfold during the game (Weinberg & Gould, 1995). Coaches at the cutting edge of their field, ensure that psychological skills training (PST) is a regular and integral part of their teams yearly training program. Vealey (1988, p.319) defines PST as “techniques and strategies designed to teach or enhance mental skills that facilitate performance and a positive approach to sport competition”.

Current State of Psychological Skills Training

Despite an acknowledgement that psychological skills can enhance sporting performance, there is still a lack of commitment to PST by some coaches, especially outside the environment of Olympic or elite sporting institute teams. Goldsmith (1996, p.4) articulates his perception of sport psychology in the canoe coaching community in Australia:

> Sport psychology is an integral part of the successful sport sciences sport medicine network, yet is often the most neglected of the sports sciences. Generally, the physical fitness of the athlete is taken care of throughout the training program, but the mental fitness of the athlete is left to a few encouraging words before an important competition.

While this sentiment is not founded on scientific research, it is a common belief of many involved in coaching in NSW Australia.

Joan Duda (1997), a sports psychology researcher and author conducted a thought provoking lecture series around Australia in 1997. One of the foci of her presentation was the
preparation of athletes for competition. She felt that junior athletes are trained well in the technical skills of competition, performing competently at the junior level. However, when they step up into the senior ranks, or more difficult competition settings, the athletes are often left naked, with little or no mental skills to support the high pressures of this kind of competition. Similarly, my personal anecdotes from Australian canoeing in the introduction of this thesis attest to this fact.

Duda's sentiments have been shared by a variety of well-known sport psychologists. Williams (1986, p.xvi), declared that: “coaches and athletes acknowledge the importance of mental factors in athletic development and performance, yet the time athletes actually spend discussing or practicing mental skills belies this view”. While Anshel (1990, p.ix), offers this insight: “Ignoring (or perhaps unaware of) revelations by sport psychology research over the past two decades, many coaches use strategies for teaching skills, motivating athletes, and planning for competitive events that are no different than those used decades ago. In many ways the coaching profession is sadly ineffective”. It has become apparent that some coaches are not preparing the whole athlete for competition; they are only addressing the physical domain.

This claim is supported by Daw & Burton (1994) who evaluated a comprehensive psychological skills training program for tennis. They identified that insufficient time was being provided for athletes to adequately practice and develop the psychological skills necessary to improve performance. They recommended coaches be more aware of the importance of practice time for PST, or periodise PST as part of the season training program.

The publication of sport psychology texts has proliferated in the last few decades (Anshel, 1990; Jones & Hardy, 1990; Hardy, Jones, & Gould, 1996; Pargam, 1998; Wann, 1997; Weinberg, & Gould, 1995; and Williams, 1986). These have been accompanied by many quality studies documented in a number of highly regarded international sport psychology research journals. Despite this pooling of knowledge and ease of access to this information, my personal observation as an athlete, and sports training consultant, is that this literature, and the potential boost to athletes it offers, is not reaching the grass roots level of sport in Australia.

To this end, Jackson and Csikszentmihalyi (1999), in their book *Flow in Sports*, testify to the importance of preparing the physical as well as the mental aspects of competition if one is
going to reach their optimal flow performance in sport. It seems that in Australia at present there appears to be a real lack of mental skills or team skills training in junior sport.

Weinberg & Gould (1995, p.243) attempted to answer the question as to why coaches are not administering PST programs to their athletes. Their findings illustrated:

1. **Lack of knowledge**: many people do not know how to teach or practice PST skills, they are still coaching sport based on experiences from when they were juniors. Simply, many coaches and athletes still have not access to the latest research.

2. **Psychological skills are viewed as unchangeable**: it is a common belief that athletes are equipped with mental skills that are innate in their genetic make up. This is a misconception. All champions have to learn and consistently work on staying cool under pressure, blocking out distractions while maintaining a competition focus, and keeping confident despite the possibility of failure. These skills are not genetic.

3. **Lack of time**: too little time is often cited as a justification for not practicing PST, as they barely have time for the physical skills. These coaches are often the first to complain that their team lost because they lost their concentration, despite this, they will not spend time on developing these skills in training.

4. **PST is for problem athletes**: there is a concern that only athletes that have some kind of mental disorder need psychology consultations or training. All athletes can benefit from PST.

5. **PST is only for elite athletes**: many elite teams in Australia have access to sport psychology through their connections to sport institutes, however, there is strong evidence that PST benefits junior athletes as well (Duda, 1997; Orlick & McCaffrey, 1991; Weiss, 1991).

6. **PST is not useful**: there is still “the old school” of coaching prevalent today where it is believed that mental training is hocus pocus without anything to offer.

Many significant studies exist that support the use of PST programs (Gould, Medbery, Damarijan, & Lauer 1999; Vealey 1994; Gould, Tammen, Murphy & May 1989; Greenspan & Feltz 1989; Orlick & Partington 1989), it is hoped that this study will add to this body of knowledge. Several of these significant studies are outlined below.
Efficacy of Psychological Skills Training?

Several key studies have investigated the importance of PST, either through the canvassing of expert coaches and athletes, or through original research studies. Williams (1986) compared successful and less successful athletes in terms of psychological skills. He observed that more successful athletes, had higher self-confidence, more task oriented thoughts, lower levels of anxiety and used more positive thoughts and imagery to visualise success.

Gould, Tammen, Murphy & May (1989) surveyed elite coaches with US Olympic national governing body to ascertain their perceptions of the most important psychological skills. They rated relaxation training, concentration, imagery, concentration, attention training, stress management and self talk strategies as being critically important topics. Gould, Medbery, Damarijan, & Lauer (1999) replicated the above study this time with 153 junior tennis coaches. They asked them to rate the importance of psychological skills. The skills rated most important were, concentration focus, self-confidence, emotional control, motivation, practice intensity, and self-talk.

Arguably, the most influential study documenting the impact of PST on athletes comes from a study by Orlick & Partington (1989). After interviewing Olympic athletes that had performed or exceed their potential at the 1988 Olympics, they uncovered that these athletes had developed plans for competition, evaluated performance, and learnt to deal with unexpected disruptions. They could overcome adversity by sticking to their plans and channel performance anxiety and arousal positively.

Reviewing the psychological skills training research, Greenspan & Feltz (1989) appraised twenty-three published studies that used educationally based psychological interventions as their intervention. They concluded that PST improved the performance of collegiate and adult athletes. Vealey (1994) examined the current state of research in the area of PST and found that nine of twelve studies reviewed concluded an effect for interventions using PST with athletes. One of these reviewed studies, Hellstedt (1987), investigated teaching mental skills to young athletes at a ski academy. Positive results from participant evaluations of the intervention, and reduction in the sport competition anxiety post-test scores, indicated that various components of the course were helpful in developing skills in sport and athletes' lives in general.
In summarising the literature on what coaches and athletes believed are the most important PST skills, Weinberg & Gould (1995, p.247) identified the following as being most important:

- Anxiety and Arousal regulation.
- Imagery (mental preparation).
- Confidence building.
- Increasing motivation and commitment (goal setting).
- Attention/concentration skills (self talk, mental plans).

As the teaching of these mental skills form an important part of this intervention, a brief overview of each skill and relevant research in these areas will now follow. Dealing with anxiety and achieving optimal arousal levels was an important theme of this study, this was discussed earlier on page 25 so will not be covered here again.

Based on the research of Gould et al (1989), Weinberg & Gould (1995) and the needs of the teams being studied during this intervention, several key psychological skills were chosen by the coaching staff and researcher as important skills that could help prepare the athletes for optimal performance. Literature relating to these skills is outlined in the following section.

Imagery

Mental imagery is considered an important psychological tool to help athletes prepare for competition. Orlick (1986) identified several areas of athletic preparation that imagery could enhance, this included:

- To see oneself achieving success or reaching your goals.
- To motivate oneself by calling up past images of successful competitions or performances.
- To perfect or refine the learning of a specific skill.
- To familiarise oneself with a variety of things, including the competition site, game plays, pre-competition routines, or event focus.
- Rehearse all aspects of one performance before competition.
• To help refocus before or during an event.

While imagery is seen as an important part of the athletes psychological repertoire, Smith (1987) outlined several important principles an athlete should follow if imagery was going to be effective, these included:

1. Imagery should be vivid and controllable, where imaged events are colourful, realistic, and involve the appropriate senses as well as related emotions. This may enhance training of the nervous system so one's performance actually improves without physically practicing the skill. Being able to control the image by ensuring it is positive rather than negative, or that imaging is only used in the right circumstance is seen as critical to its success.

2. Imagery is a skill that can be learnt and needs to be practiced if it is to be mastered. Vealey (1986) emphasised the need for repetitive practice to facilitate improvement. While Bennett & Pravitz (1982, cited in Smith, 1987) suggested it takes 8 weeks before subjects report positive effects from imagery.

3. It is important that an athlete brings positive expectations and attitudes to imagery practice as any skepticism can erase the power of imagery training.

4. It appears that imagery is better if it is based on previous experience, where athletes have something to base imagery on.

5. A relaxed state of mind during imagery training seems important. A systematic relaxation procedure should be used before most imagery sessions. This is in line with Kendall, Hrycaiko, Martin, & Kendall's, (1990) study that recommended that the combining of several psychological skills e.g. imagery with relaxation or self-talk can be more beneficial than one skill alone.

6. Finally, it is recommended that an athlete should visualise through the performer's eye, which is similar to the actual perceptual information the athlete experiences during sport performance, rather than an external perspective like watching oneself on video.
Goal Setting

Locke and Latham (1985) were instrumental in much of the early work on goal setting. They made several recommendations to guide goal setting in sport, these underpinned goal training in this intervention; and are presented below:

- Setting specific difficult goals lead to better performance than vague or easy goals.
- Short-term goals can facilitate the achievement of long-term goals.
- Goals affect performance by affecting effort, persistence, and direction of attention and by motivating strategy development.
- Feedback regarding progress is necessary for goal setting to work.
- Goals must be accepted if they are to affect performance. (p.205)

One criticism of initial research into goal setting was that the contrived environment of the laboratory setting left a big question mark over the motivation and participation of subjects in the studies. Research however attempted to rectify this major concern. Fairall & Rodgers (1997) attempted to examine the effectiveness of three different goal setting strategies of elite College athletic participants, set in a real setting, e.g. their daily training venue. The three treatments were participative, assigned, and self set goal setting. While the athletes were aware of the differences in their involvement in goal setting there seemed no significant advantage for using one method over the other, providing support and resources were provided for athletes to use in setting and achieving these goals.

The efficacy of goal setting in ball sports was demonstrated by Lemer, Ostrow, Yura, and Etzel (1996). They used a field setting to test goal setting’s effect on free throw performance of female college basketball players. After baseline measurements were made, athletes were educated in effective goal setting strategies based on the above-mentioned Locke and Latham model. While the number of subjects in the study was quite small to make generalisations; three out of the four subjects assigned to the goal setting group showed significant improvement in post-testing for free throw shots; this indicating a positive correlation between personal goal setting and free throw performance. Based on these finding this present intervention used a participative goal setting strategy involving players and coaching staff meeting regularly to set and evaluate goals that would guide their training and competitive performance (See appendix 7).
Attention / Concentration Control

To successfully execute psychomotor skills, performers must be able to selectively attend to and concentrate on relevant task cues while disregarding irrelevant cues. One would think this obvious premise would be based on a wealth of research giving this important area of sport psychology sound support, however this is not the case. Singer, Cauraugh, Tennant, Murphey, Chen & Lidor (1991, p.96) report "that much of the literature related to attentional training has been based on intuition and practical experience". There have however, been a variety of attempts to study the attentional characteristics of athletes. One perspective toward analysing attentional processes and how they function, is through the study of the highly skilled athlete, and comparing this to the unskilled athlete.

Orlick and Partington (1988) conducted a comprehensive study of 235 Canadian Olympic athletes who participated in the 1984 Los Angeles Olympic Games. Using questionnaires and interviews they assessed the athletes' mental readiness for the Olympics and factors related to mental readiness. They found clear links between Olympic performance outcome and certain mental skills. Factors related to improved attentional focus included:

a. Imagery training: which was used to prepare for training, to perfect skills within the training session, to make technical corrections, and to imagine success in competition.

b. Mental preparation for competition: The best athletes had developed systematic procedures for drawing upon their strengths in important competitions. This included the use of pre-competition and competition focus plans, evaluating competition performance, and a plan to handle distractions.

c. Self-talk: Was used to re-focus thoughts on the task when athletes found themselves being distracted.

In their study, Orlick and Partington (1988) concluded that mental readiness in terms of athletes focus of attention prior to and during competition, proved to be a significant precursor for success at the Olympic level. This same premise was to be utilised during this present intervention, where athletes were continually challenged to maintain concentration despite intentional distractions. Strategies devised by Orlick (1986) formed the basis for post intervention practice (See appendix 7).
Self-Talk

A big challenge that faces coaches and sport psychologists is increasing athletes’ awareness of the important role that thoughts play in determining feelings and behaviours; these thoughts often manifest themselves as positive or negative self-talk. Positive self-talk is the sign of a confident athlete; they keep self-talk positive, remain on the task at hand and do not waste energy worrying about failing. Negative self-talk is indicative of athletes who lack confidence, and focus on failure rather than cues that will help them perform at their optimum. Self-talk is of benefit when it is kept positive, task related and enhances self-confidence (Orlick, 1986).

Researchers have investigated the effect of self-talk on athletic performance. Van Raalte, Brewer, Rivera, and Petitpas (1994), examined the relationship between observable self-talk and competitive junior tennis players’ match performance. During a tournament, subjects observable self-talk, gestures and game scores were recorded. This was followed up with a post game questionnaire, which was aimed at finding out the athletes’ positive, negative, and other thoughts that occurred during the match. Results indicated that negative self-talk was associated with losing and that players who reported believing in the power of self-talk won more points than players who did not. The results suggested a strong link between positive self-talk and sporting outcomes. A major emphasis was placed on the importance of believing that self-talk can work, although more research is required to confirm these initial observations.

The intervention of this present study provided an environment that constantly challenged the participants self-talk. Strategies during the intervention were designed so subjects could experience first hand the effect of positive and negative self-talk.

Recommendations for Future PST Programs

Through several evaluations of the field of sport psychology, Vealey (1988; 1994) made recommendations as to future directions PST should take. She identified that most PST training is directed mainly at elite athletes, (something that still has not changed), and that often overlooked junior athletes, while developing physically, are also developing mentally, and are ripe for guidance in PST. She also advocated a holistic personal development model to PST, which focuses on human growth and change, and one that incorporates both an understanding of the individual and the environment in which they are living, training, and performing.
Danish, Petitpas, & Hale (1992) developed the “life development intervention”, recognising that PST should be providing athletes with life skills, that have value both in and out of sports. Duda (1997) believed PST should really concentrate on building esteem in athletes by focusing on the whole person and not just sport specific training. Skills need to be transferable to all areas of athletes' lives. What is really interesting about all these recommendations from some of the worlds leading sport psychologists, is that by its very nature, adventure-based training not only can develop psychological skills for sport, but mental skills for life.

**Models for Delivering Psychological Skills Training**

There are two models that are prominent in the literature for guiding PST programming, firstly, Weinberg & Gould (1995) advocate a three step process:

1. **Educational phase:** this phase introduces new and unfamiliar concepts to athletes. They learn how PST can assist them in their sporting endeavours and the importance of regular practice if implementation is going to be successful.

2. **Acquisition phase:** focuses on strategies and techniques for different psychological skills. Specific strategies are tailored to meet the unique needs and abilities of each athlete.

3. **Practice phase:** which has three primary objectives:
   a. To automate skills through over learning.
   b. To teach people to systematically integrate psychological skills into their performance situations.
   c. To simulate skills you will want to apply in actual competition.

While the above model is sound in its intentions and practical implementation and therefore suitable for the delivery of PST programs in all settings, one could argue that the model is perhaps troublesome for junior athletes. Weinberg and Gould (1995, p.249) suggest that when in phase three, “you might guide athletes through an imagined competitive situation requiring relaxation and coping skills.” While this methodology is suitable and satisfactory for athletes and teams that are confined by time, it would not be considered an optimal way of teaching our young athletes (Kraft & Kielsmeier, 1995). This “imagined competitive situation” requires participants to think abstractly. Junior athletes, who are still operating in a concrete stage of thinking, may not connect with this style of training methodology.
(Piaget, cited in Sakofs, 1989, p.159). Boutcher & Rotella (1987, p.127) also recognise the drawback to this style of delivery. While discussing the transfer of skills from the classroom to real life sporting situations, they state that: "learning to relax in a quiet room will not necessarily lead to control of excessive pre-game anxiety in a sporting situation". This, "school like" teaching methodology that is problematic in the teaching of sport psychology to junior athletes, is an area that this research can help improve upon.

As well as the above model, Murphy & Tamen (1998) offer a three-step process that guides the philosophy for teaching sport psychological skills (See Figure 9).

**Step 1:** Firstly, the athlete has to be able to recognise the ideal psychological state, which corresponds to her own optimal performance. This state may vary from person to person (Loehr, 1986), and athletes must have opportunities to gain the self-knowledge necessary to be able to identify their personal ideal state. For example, a goal shooter in netball may recognise that she has a tendency to let the tension get to her in the closing stages of a match.

**Step 2:** Requires athletes to monitor their psychological state in order to determine if changes are needed. Our netball goal shooter above, may notice that her muscles are tight when she is shooting, and she is beginning to get negative thoughts that are affecting her confidence.

**Step 3:** Involves making changes that will improve behaviour, emotions, or thoughts. This step requires specific actions, with these being rehearsed many times before in practice. In netball the shooter receives a pass with five seconds remaining in the match, the game is tied. She quickly checks her muscle tension and breathing, she slows, closes her eyes briefly, visualises good technique, breathes deep, feels in control, then shoots.

---

**Figure 9:** Three step process for teaching PST. (Murphy & Tammen, 1998, p.198)
In their analysis of PST literature, Murphy & Tammen (1988, p.198) observed that most previous research focused on whether athletes used self-regulation skills (step 3). They postulate that, "it may be even more important to determine whether athletes are skilled in steps one and two of the performance management process". In this present investigation one of the objectives was to have athletes experience all three of these stages during the intervention, so they would then be equipped to practice them further in training and implement them in game situations in their preparation for their national championships.

In summary, psychological skills are recognised as being important for achieving athletic excellence, many coaches however, do not dedicate the time required to adequately develop mental skills for optimal performance (Anshel, 1990; Duda, 1997; Williams, 1986). The proliferation of sport psychology literature and texts (Anshel, 1990; Jones & Hardy, 1990; Hardy, Jones, & Gould, 1996; Pargam, 1998; Wann, 1997; Weinberg, & Gould, 1995; and Williams, 1986) has set about addressing this void in coaching by providing the necessary support to bring about change in the teaching of mental skills in sport.

Weinberg & Gould (1995) identified barriers to teaching sporting psychology principles to athletes, these included: A lack of knowledge; a false view that psychological skills are unchangeable; a lack of time; psychological skills are only for problem athletes; psychological skills are not useful. These barriers existed despite the positive benefits participation in psychological skills training programs have shown (Greenspan & Feltz, 1989; Vealey 1994). In recommendations from their studies, Danish, Petitpas, & Hale (1992) and Vealey (1988 & 1994) suggested that future research focus on programs for junior athletes that provided holistic personal development that enhanced skills for life as well as sport. It was a goal of this present investigation to test the adventure-training medium to ascertain whether this model of delivery could provide alternative but effective means of psychological skills development and delivery that would address the above identified barriers.

In conducting a quality-training program, it was seen as important to have a theoretical framework to guide the delivery of psychological skills training. To this end, Weinberg & Gould's (1995) three step teaching model and Murphy & Tammen's (1998) self-awareness model were instrumental in driving practice followed during this intervention.
In the past, adventure-based training has been seen by many potential clients as little more than an excuse to go climb a mountain or canoe a river, and some programs did offer little more than this. Thankfully, times have changed and the majority of today’s programs operate with a high degree of sophistication. McKeon (1991, p.69) described adventure-based training as “a recent version of applied psychology”, because of the opportunities it creates to train athletes in many of the psychological skills needed in sporting performance.

Meyer, (2000) and Meyer & Wenger (1998) argue that coaches and the sport psychology community have been slow to embrace adventure-based training as a valuable teaching tool, which when used correctly could enhance athletes’ understanding of sport psychology concepts, and performance. With the success of adventure training in other areas of psychology, several sport psychologists, consultants, and researchers have begun to explore the use of this experiential tool in order to help athletes with their psychological development and performance in sport. The next section of the review examines the small, but growing body of literature in the field of adventure-based training and sport psychology. The literature dealing with adventure-based training and sport psychology comes in three forms. 1) Brief commentary or research with methodological limitations, 2) Program descriptions in sporting or outdoor journals, 3) Refereed research articles from academic journals or theses.

Brief commentary or research with methodological limitations

Many State and National teams come together with players arriving with a variety of backgrounds, coaching experiences, expectations, and goals. Unless these differences can be addressed, the potential for disharmony within the team could severely affect the performance of the team as a whole. Interventions to assist this assimilation have been conducted across several sports to varying degrees of success.

The NSW and Queensland (QLD) rugby union teams in Australia, have both engaged in an army boot camp type of adventure-based training. The focus appeared to be on pre-season socialisation and team building. No academic research was attempted to measure their efficacy. It seems that these sessions had little structure to them other than for the teams to get together away from their usual sporting environment at the beginning of the season.

In New Zealand (NZ) both their national rugby and netball teams have participated in adventure-based training experiences. Both these interventions were investigated by researchers. The rugby team participated in a six day outward bound (OB) course (Chu,
Leberman & Martin, in press) that focused on personal development, interpersonal effectiveness, and transfer of these skills back to rugby. Qualitative analysis of post course surveys, revealed players had greater confidence to participate in activities that initially seemed “scary or “daunting”, with this providing the impetus to change things in their lives that were also daunting. The solo section of their OB course enabled players time to reflect on their lives, with many setting goals to improve personal relationships with either their teammates, or significant others. Finally, many players reported the intervention offered a way of getting to know other team members in a different light away from the normal routine of rugby. The researcher planned on completing a twelve-month follow up, to investigate any longitudinal effects of the program. While initial results indicated a benefit to the team process and improved relationships, the study did not indicate what learning directly transferred to the rugby field. This information will be presented in the longitudinal results in the near future.

The NZ silver fern netball team participated in a three-day team development program incorporating a series of team problem solving and initiative activities (Smith, 1995). Quantitative and qualitative measures were administered. The quantitative instrument measured dimensions of effective teamwork (name of instrument not provided). Results demonstrated a positive improvement in averages between pre and post tests. However, the study did not incorporate the use of a control group, and did not use any statistical analysis on the data, other than reporting the mean scores. Qualitative data focused on major learning in areas such as; players gaining greater confidence in themselves, and in their abilities as individuals, as well as improving their relationships with others on the team. There was again no indication of how the intervention transferred to the sport of the participants. Smith (1995, p.6) concluded that, “the ultimate test will be whether the players have learned skills that they can apply to improve their performance on the court”. No further discussion was indicated by Smith on how they planned to follow this concept.

The 1984 USA Olympic Volleyball team, completed an outward bound experience when they first came together in order for the players to get to know one another, and begin to build teamwork for the long track that it would take to be the number one ranked team in the world. Their coach, Doug Beal (1982, cited in Hastie, 1989, p.29), regarded the experience as an outright success, “melding a group of individuals with varied and often conflicting goals into a cohesive and focused unit”.
Hastie (1989) tried a similar strategy with his Queensland junior volleyball team, however his goals were different. He wanted to investigate what would happen to the team dynamics and cohesion when the team was put under stress outside the volleyball environment. He had the team walk in and climb a mountain over a three-day period. Players reported at the conclusion of the trip, that it was the inspiration and help from other teammates that got them to the summit. If individual players were left on their own to succeed, only two team members of the team believed that they would have tackled the steep terrain on their own. The team felt they had a great metaphor to guide their season, “to reach the top, they have to work together to achieve their goals” (p.29). Coach Hastie often referred back to the learning from this trip whilst training throughout the year. He claimed the success was due to the “physical and psychological” demands the trip put on the team. It was a “significant life experience,” that had meaning and transferability to other areas of their lives (Hastie, 1989, p.29). This finding would be in line with the earlier cited theoretical position of Priest and Gass (1992) who emphasised the power of framed metaphorical experiences in adventure training situations.

**Program Descriptions in Sporting or Outdoor Journals**

Yukelson (1997) described how athletes at Penn State University were presented with team problem solving challenges as part of their early season training. He described the obstacles teams had to overcome in order to succeed. Activities like working together to ford across a river, or getting all team members over an 11-foot high wall provided this challenge. He found that the concept of group titles and interpersonal status, faded into the background of the challenge, for team members had to learn how to divide up responsibilities and work together with a sense of cooperative independence to accomplish the group task. As a result of participating in the intervention, Yukelson found that participants learnt important group dynamic principles with regard to goal planning, group decision making, communication, cooperation and trust.

Continuing with this same theme of team development, Dale & Conant (1998) gave an excellent overview of an adventure-based intervention with sporting teams, specifically focusing on activities that promote team cohesion and team building. A rationale is given for how the adventure experience can improve communication, conflict resolution, trust, camaraderie, goal setting, improved responsibility and discipline. They believe that, “one of the best ways to have teams learn about the importance of team building is through
challenges and exercises that allow athletes to actually experience the demands and rewards of being part of a team” (p.11).

While the above studies have mainly focused on intact teams coming together for an adventure-based training experience, Power (1991) identified concern for team cohesiveness when individual athletes came together to form a team for an upcoming championship (e.g., Olympic swimmers, or athletics teams). A concern for the coaches of these teams was that athletes are usually competing on their own, yet part of a team unit. Power wanted to determine whether it was beneficial to put effort into training athletes in team skills such as, “openness, trust, setting common objectives, conflict resolution, listening skills, promotion of high commitment and a consensus style of decision making” (p.28). Results indicated that having a cohesive team was beneficial. “The athletes learn how to work together, then everyone is happy and free from the stress that conflict can cause. The team is then able to concentrate exclusively on the job at hand, which should be training and performing to the best of their ability” (p.28). Adventure-based training can teach athletes all the above-mentioned skills, but in a fun, active and experiential manner that could be more meaningful and practical for younger junior athletes.

Refereed Research Articles from Academic Journals or Theses

Allain (1996) researched the effectiveness of an adventure-based training program on the team cohesion of a nineteen member Canadian university women’s soccer team. The intervention incorporated the use of four initiative or team build activities. Understanding the intervention from the athletes’ perspective was a goal of the intervention, and qualitative data was collected from both journals and focus group interviews. Results displayed strong support for changes in the teams cohesion, as well as improved communication, trust, and the ability to block out unwanted distractions.

The two studies that have impacted the most on this present project have been conducted by Meyer and Wenger (1998), and Meyer (2000) who have been leading researchers in the area of adventure training and sport psychology. The review of these articles will be in greater depth, as Meyer’s work greatly influenced this present study. It is hoped that the findings of this study will add to this growing pool of knowledge.

Meyer and Wenger’s (1998) identified and described the outcome oriented effects of ropes course participation on a girls high school tennis team, and the processes through which these outcomes were achieved. Qualitative analysis of data demonstrated increased team
cohesion, especially around social issues within the team. The breaking down of cliques increased support for team members on and off the court, and social relations improved because of improved communication. The realisation that goal setting is important when attempting to complete novel or challenging tasks was another important result. These findings were supported in later follow up studies (Meyer & Grochowski, 1998; Kilty & Meyer, 1999).

It is interesting to note that this and the follow up interventions only had an impact on the social side of the multidimensional construct of cohesion, with no impact on task factors. While there are many interacting variables that could have led to this, it appears that the facilitation and design of the ropes course experience may have affected the outcome. Earlier in the review, Priest and Gass's (1992) overview of the stages of adventure facilitation were outlined. Facilitation in any of the first three stages can lead to a "reactive" facilitation process (Priest, 1995). This is where the facilitator lets the events of the experience unfold and then debriefs the activity based on the participants' interaction. The facilitation is after the fact. This appears to be the style used in Meyer's study.

This teaching method is an effective and acceptable style of facilitating a program, however, it is a hit and miss affair where the desired outcomes of the program may or may not result. Operating in one of the later facilitation methods of front loading or metaphoric framing however, allows the facilitator to structure the activity to mirror either task or social aspects of the athletes' sport or problems concerning these areas. This present study plans to address this issue and monitor the effect of facilitation on athletes' learning.

Ensuring follow up so as to enhance long term learning transfer was a concern for Meyer and Wenger. They found an inverse relationship between the transfer of concepts learned during an adventure-based intervention and time since the actual experience. Participants were able to report fewer instances of real world application of learning at the three-month follow up, and fewer after 9 months. They recommended that, "sport psychology professionals should explore the possibility of utilising ....post-program activities and/or discussions which may reinforce important ideas" (p.263). These recommendations were implemented in this present study.

Meyer also attempted to explain the athletes' learning and change through Lewin's change theory model (Lewin, 1965 cited in Meyer, 1998, p.245). The model is a three-stage approach that is used to explain change in a variety of disciplines. These stages are outlined below:
Stage 1: Unfreezing: involves a motivation or desire to change which is typically prompted by feelings of inadequacy or failure, threats to self-esteem, or general feelings of turmoil. The individual believes that through change, these feelings of inadequacy and failure will cease to exist, therefore they are ready and motivated to change.

Stage 2 Moving: requires new behaviours, responses, and problem solving approaches to be developed in an attempt to replace those that are causing the above mentioned stress. Through identification with knowledgeable and respected others (i.e., change agents), an individual cognitively redefines the situation and continues the process of assimilating new ego-enhancing, equilibrium-producing beliefs and behaviours.

Stage 3: Refreezing: in this stage new behaviours, responses and approaches are stabilised, and integrated into the individual’s repertoire and ultimately their world. Change agents continue to be important in this stage, providing support and reinforcement, and helping to identify forces that inhibit or facilitate change, so change can be maintained.

While Meyer systematically explained the changes to athletes through Lewin’s model, much of the change she described was directed around relationships, trust, and social issues within the team, which in itself, greatly benefited the athletes. While changes in these areas can impact on sporting performance (Weinberg & Gould, 1995), there was very little indication in their results as to how athletes might have benefited from these changes when actually out playing tennis in real competition situations. Did the intervention impact on performance? Did players learn skills that directly helped their tennis game or the mental process of competition? (The investigation of these questions were outside the exploratory nature of Meyer’s research). These questions are very important for coaches, administrators, and athletes who are spending valuable time away from their usual training routines in pursuit of something that will enhance performance. This present study will attempt to build on Meyer’s work by investigating these questions. It will also determine whether Lewin’s model of change is appropriate in explaining the changes within a netball team situation, and compare and contrast Meyer’s finding to the results of this study.

During the process of writing this present research project, Meyer (2000) followed up her qualitative investigation with a quantitative examination of team cohesion and individual differences in approaches to competitive sport. Her findings and recommendations gave further direction to this study, and provided results from which to compare and contrast. Athletes in the study (n=35), ranged from year nine through to year twelve (14-18 year olds). The group was split into a treatment group (n=16) who were senior players, and received a ropes course intervention, and a comparison group (n=19), who were junior players and
acted as a control. Meyer stresses that the teams were identical in most measures other than their age difference. Tuckman (1994, p.9) cautions that, "to be valid, an equivalent control group must be the same in composition as the group receiving the treatment". While, Tuckman's warning is sound in theory, in practice it is often difficult to find an identical control group, especially in sporting situations. This threat however, could affect results or validity. This is only seen as a minor limitation to Meyer's study, and one factor that this present investigation attempted to consider in the research design. Results indicated a significant interaction (p<.04) on one factor, "individual attraction to the group-social" (ATG-S), which measures the individual group member's perception about their personal involvement, acceptance, and social interaction with the group. Post hoc t-tests indicated a significant (p<.03) decrease for the comparison group between pre and post testing, and a significant difference between the groups at post test (p<.05). Thus, those participating in the intervention had higher social cohesion scores at post-test. There were no significant results in the other subscales.

There were again significant results in the social cohesion domain. Meyer however, attempted to explain the lack of change on the task cohesion scales. She cites her previous studies as a measure of consistency across results, however, all these previous interventions have been facilitated in the same manner, focusing on the social domain, so there still is a question of how different facilitation may affect task cohesion. She then cites the coactive nature of tennis as a possible cause for the lack of effect in the task area, as individual sports do not require cooperation to accomplish tasks or goals. This stance is supported in the literature (Carron, Brawley, & Widmeyer, 1998).

Research utilising adventure-based training has been somewhat scant, with much of the existing literature being anecdotal or descriptive, and lacking any academic rigour. Several exceptions to this (Meyer and Wenger 1998; Meyer, 2000) have recently attempted to rectify this concern with their work with coactive tennis teams; adding to the work of these researchers was a goal of this investigation.

**Summary of Literature Review**

The literature review has drawn together a variety of theoretical and research based materials, which has given an overview of the current state of play in the adventure-based and sport psychological skills training fields. Potter (1992) and Bacon (1983) illustrated the importance
of the wilderness environment in setting up a disequilibrium or uncertainty amongst participants, which ultimately can lead to a willingness to change cognitive processes.

Bisson (1998) was then cited for his model of structuring an adventure program and the activities performed by participants around the level of development of the group. This work being based on Tuckman and Jensen's (1977) views that after groups come together their efficacy improves as they pass through the stages of forming, storming, norming and performing.

The role of the facilitator in framing the adventure experience with strong isomorphic links to the sporting environment was stressed in Priest and Gass (1992) and Bacon's (1983) research. This approach, incorporated with Nadler and Luckner's (1992) "Edgework", can provide an extremely powerful learning experience for participants in an adventure program.

Providing real life situations where athletes can experience and practice Murphy & Tammen's (1998) psychological skills development sequence of "self regulation, self monitoring, and self awareness" lends itself to adventure-based experiential training methods.

Meyer & Wenger (1998) and Meyer (2000) provided a platform from which to build this present research project and to use as a basis to compare and contrast results. It is hoped that this present project can add to this growing body of knowledge.

The literature cited in this review is used throughout the remaining chapters of the thesis to guide structure and planning of the methods section, and to compare and contrast results in the discussion.
Chapter 3

METHODOLOGY

This study investigated the effects of an adventure-based training program on the group cohesion and psychological skills training of elite junior netball players. The following areas of the intervention will be discussed in this section, these include: 1) an overview of the literature that guided the research method; 2) research design; 3) participants; 4) site description and 5) quantitative/qualitative procedural and literature overview. A separate chapter 4, containing a comprehensive intervention description follows this methods section.

METHODS LITERATURE

Vealey (1994) recognised that the objective of sport psychology interventions was to elicit a psycho-behavioural change, which in turn enhanced performance and the quality of the sport experience for athletes. The measurement of these psychological interventions has traditionally been the domain of the positivist researcher as the sport psychology movement sought to gain credibility within the greater psychology community (Hardy, Jones, & Gould, 1996; Sparkes, 1998). A similar search for authenticity can be seen in the experiential education research where studies attempted to quantify participants’ experiences during adventure programming. Henderson (1993, p.50) observed that “the positivist paradigm has not always been as useful in helping to understand human behaviour”. This is especially the case when the goal of the research project is to discover, understand or communicate about people and their experiences during an intervention.

Sport psychology researchers have been grappling with similar issues. Martens (1987, p.29) asserted that, “two Sport Psychologies have emerged - academic sport psychology and practicing sport psychology - which are presently on diverging courses because of an unjustified belief in orthodox science as the primary source of knowledge”. He believed that traditional research methodology based on classic scientific method, had been particularly harmful in expanding knowledge because it, “attempts to remove the person from the process of knowing” (Martens 1987, p.29). In attempting to understand the research process, Martens (1987, p.29) proposed that, “heuristic philosophy of knowledge, which places
humans in the center of the process of knowing, is recommended as an alternative approach for the study of human behaviour”.

In support of Martens call for researchers to focus on the process and the participants of research studies, Fahlberg, Fahlberg, & Gates (1992), recognised the complexity in exercise behaviour and that it required additional methods to understand the problems and questions that arose during research. They introduced the concept of existential phenomenology to help unravel the intricacies of human behaviour. Existential phenomenology, simply put, is to focus on describing the basic structures of lived experience rather than behaviours (Polkinghorne, 1989).

Dale (1996) added further support to humanistic oriented research and emphasised delving into the experience of the athlete through existential phenomenology. He stated that:

with its open ended format, and similarities to the athlete-sport psychology consultant interaction in a performance enhancement intervention, it is a method that appears to offer valuable information about the participants’ experience that might otherwise go unnoticed (p.307).

Rather than become involved in a struggle over which paradigm is “best”, Henderson (1993, p.50) acknowledges the benefits of both methods of research when she stated, “The two predominant views of research, interpretive and positivism, are operating together in experiential education, similar to the polar energies of yin-yang....both ways of thinking are needed if we are to address the questions arising in experiential education”. Hardy, et al, (1996, p.270) concur with Henderson’s views when they state that:

No one best method or research approach exists for all investigations. The suitability of a methodological approach is determined by the question posed and the goals of the investigator. Investigators should consider using multiple methods both within and across investigations because of the strengths and limitations associated with different methods. Thus, different methods and designs can be combined within the same investigation.

RESEARCH DESIGN

A multi-method approach, using both qualitative and quantitative methods along with multiple data sources, were the tools used in this study to assess the impact of the adventure-based training on elite netball players. It was assumed that both methodologies complement and counterbalance each other and enable a thorough analysis of the available data (Henderson, 1993). This multi-method approach is a form of triangulation, which allows one to learn about phenomena while attempting to guard against biases in the process.
Combining these methods is a successful approach because a diversity of needs raised by the nature of the research questions can be addressed by a variety of methods (Henderson, 1991).

The rationale for utilising a multi-method triangulated research approach was based on recommendations of Cohen & Manion (1994, p.233). They recognised that: “triangular techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint and, in so doing, by making use of both quantitative and qualitative data.” It was seen as critical in this present investigation, to map out the experience of the participants in as much detail as possible, the multi-method approach would meet this requirement.

In discussing the advantages of a multi-method approach, Lin (1976, cited in Cohen & Manion, 1994, p.233) stated that:

exclusive reliance on one method, therefore, may bias or distort the researcher’s picture of the particular slice of reality she is investigating. She needs to be confident that the data generated are not simply artifacts of one specific method of collection.

Cohen & Manion (1994, p. 238) continued with this theme, acknowledging that: “so complex and involved is the teaching-learning process... that the single-method approach yields only limited and sometimes misleading data”. In this present investigation, the valuable rich athlete testimony of their experiences provided additional valuable material that painted a thorough picture of how the intervention impacted on their lives. This all would have been missed if one had relied exclusively on a positivist single-method research approach.

Two limitations of a multi-method approach were identified by Cohen & Manion (1994), the first stems from inconsistencies between quantified measures because of weaknesses in available measuring instruments; the second results from differences between quantifiable and qualitative data. As will become evident later, both these areas challenged the researcher during this project. In an attempt to reconcile these limitations, the researcher utilised effect score statistics to address the lack of power concerns in the statistical results, and included Cohen & Manion’s (1994) recommendation, that a detailed discussion be included in an attempt to clarify the discrepancies between the two multi-method result data.
Participants

The Subjects

Thirty-six members of state age netball teams provided informed consent to participate in the study (see appendix A). The athletes were either members of an under 19 or under 17 state female netball team in either NSW or Victoria, Australia. As part of the coaching strategy to prepare the NSW teams for the national championships, both teams partook in the adventure-training concurrently.

Players had a minimum of five years netball experience and had to pass through a series of selection trials to be selected on the state team. Subjects for this study would be considered elite players in their age group. All participants were from Anglo-Australian heritage, and from middle to upper socio-economic background. Participants were either members of one of two treatment groups; the NSW under 17 team (n=12) or the NSW under 19 team (n=12). A control group from a rival interstate team made up the control group (n=12). The treatment group were told they were attending an adventure-based training camp to help them prepare for their national championships, and that a research project was going to be conducted to investigate the effectiveness of this kind of training for netball players. The control group, were told that they were part of a study to see how their team cohesion developed throughout the season.

Selection trials occurred over January with the teams being announced at the end of that month. The intervention took place in the second week of February shortly after the teams came together. The season culminated with a national championship knock out round robin over the Easter weekend in April.

Under 17 team members were completely new to each other and had only formed as a team after selection trials, none of the team had participated in an adventure-based training experience as a team before. The under 19 team was made up of six players from the previous years team, while six players were new. The previous years team members had participated in an adventure-based, high ropes course during the previous season.

As the control group was located over one thousand kilometres from the researcher's home base, financial constraints and full time work commitments limited the monitoring of the control group to phone calls with the coach, written detailed instructions for the administration of the team cohesion questionnaire, and informal conversational interviews with control group players and coaches at the national championships.
Coaching Staff

Coaches were involved in the intervention with the players; they were considered part of the team. The Under 17 coach and her assistant were both female in their forties, with 20 years experience playing and coaching netball, this was their first season coaching at the representative level. The Under 19 coach, was a female in her forties with over twenty years experience playing and coaching; this was her third year coaching under 19 representative players. The assistant coach of the under 19 team was a male; this was his first season coaching at the representative level. He played men’s and mixed netball. All coaches held relevant coaching qualifications. A female manager was assigned to each team and was responsible for the administration and organisation of team matters. They did not partake in the intervention, other than to provide their observations about changes they noticed within the team after the adventure training intervention.

Whilst the coaching staff did not participate in the quantitative part of the study, they were involved in the intervention and qualitative interview process, and were critical informants in the data triangulation process. It was the under 19 coach who approached the researcher to conduct a program for their teams. Contact was made at an Australian national coaching conference during the previous year, where the coach expressed her skepticism as to the efficacy of adventure-based programming. An undesirable experience the year before had tarnished her enthusiasm for this training method.

Facilitators

One female and three male adventure-based training facilitators aged between thirty and forty, were integral in the design of the study one of which was the researcher. These facilitators were what Gray (1997, p.295) called “covert factors” in research; meaning research is often conducted without the influence of the facilitator being considered in the research design. This study therefore intended to examine how the facilitator may affect the adventure-based training experience of participants. The facilitators had tertiary training in the following disciplines: physical education, education, and outdoor experiential education; with all having between five and ten years experience teaching and working with a variety of clientele in outdoor experiential education, ranging from school students, athletic teams, and corporate clients.

The facilitators were included in the study because research suggested that, “by creating a safe and comfortable environment, encouraging participants to take risks, and reinforcing the
transfer of concepts beyond the adventure site, may play an instrumental role in the overall outcome and evaluation of the adventure experience” (Phipps & Claxton, 1997; Phipps & Swiderski, 1990 cited in Meyer, 1998; p.248).

Researcher Facilitator as Instrument Statement
One of the above facilitators was also the researcher responsible for this study. He was a male in his late thirties. In an attempt to reduce threats to validity, this statement was included to allow the reader to judge the potential conflicts of interest or bias inherent in the study because of the researcher's past experiences and background.

The researcher's tertiary qualifications included a bachelor's degree of physical education with a major in outdoor pursuits; a bachelor's degree in education, and a master's degree in education, he had also completed course work in preparation for his doctoral thesis writing.

The researcher had been involved in elite sport, in a variety of different fields including: sailing, marathon kayaking (winning national championships in both disciplines), and rogaining. As well as these competitive sports he also participates in whitewater kayaking, rock climbing, caving, mountain biking, cross country skiing and mountaineering, he holds instructor qualifications in these disciplines; he is also a level two coach. Participation in these activities had taught the researcher much about focusing his mental abilities when under enormous stress. It was these personal lessons that provided some of the impetus for this study; could this learning that had empowered the researcher, be shared with others?

Since 1984, the researcher has been employed as an outdoor education teacher specialising in the delivery of education programs using experiential teaching methodologies in outdoor adventure settings. The researcher had worked with adults, teenagers, and young children. Several pilot programs with athletes were conducted prior to this major investigation.

The facilitator-researcher’s exact role within the intervention is given detailed attention in the upcoming chapter 4 which is titled “Intervention Procedure”; beginning on page 109.

Researcher-Facilitator; Participant-Observer Role of the Facilitator
The researcher's role as facilitator was a necessary part of the investigation, and as stated above was designed to foster development and change within the treatment groups. The researcher was overt about his role as both researcher and facilitator, outlining this to the participants at the beginning of the intervention. During the adventure-training weekend, the
facilitator role dominated what the participants would have seen; this role was extremely overt and apparent to all. The researcher role however, was constant and ongoing but was not made obvious to the participants. A real benefit of being the facilitator in the adventure setting was that it provided opportunity for a special rapport to develop between researcher and participants. These close relationships helped the researcher role, as subjects felt relaxed and were more likely to act natural and be themselves. The decision to be a participant observer occurred because of the nature of the study. The research involved intact groups being studied in the field in an outdoor adventure setting that required constant interaction between the participant subjects and the researcher/facilitator; (this relationship will be defined in more detail in chapter 4). Being a participant observer however offered several advantages; Cohen and Manion (1994, p.110) highlighted the following benefits:

- Observation studies are superior to experiments and surveys when data are being collected on non-verbal behaviour.

- In observation studies, investigators are able to discern ongoing behaviour as it occurs and are able to make appropriate notes about its salient features.

- Because observations can take place over an extended period of time, researchers can develop more intimate and informal relationships with those they are observing, generally in more natural environments than those in which experiments and survey are conducted.

- ...Observations are less reactive than other types of data gathering methods. For example in laboratory experiments and in surveys that depend upon verbal responses to structured questions, bias can be introduced in the very data that researchers are attempting to study.

While there were benefits to being a participant-observing facilitator-researcher, there were also some limitations. Being a facilitator often required being the centre of attention, like when delivering a safety briefing, or giving some kind of technical instruction, or one on one coaching or feedback. Glesne & Peshkin (1992, p.58) recommended that a participant observer should attempt to remain "marginal", meaning that the researcher "does not take charge or play the role of change agent or judge, but stays at the psychological margins of interactions". This recommendation however, contrasts with the role of a facilitator who is attempting to be the change agent. Glesne & Peshkin (1992) cautioned researchers about the impact this kind of clash of roles could have on observations; these included:

- It is difficult to observe without being the centre of attention.
• It becomes difficult to be present in the role of researcher when your mind is also busy acting as facilitator.

• This interference might lead to being out of tune with what is occurring around you.

Glesne and Peshkin (1992, p. 58) recognise:

That as the researcher's participation increases, marginality decreases, and you begin to experience what your others see, think, and feel. This can be absolutely worthwhile; no amount of advantageous marginality can replace the sense of things that participation offers. The best strategy is a judicious combination of participation and observation, as dictated by what you hope to understand.

As one of the stated goals of this research project was to gain an understanding of how the intervention impacted on the participants, the role of facilitator-researcher in a participant-observer role, where one was at the centre of the action, getting to experience exactly what the athlete's were experiencing, lent itself perfectly to the objectives of this study.

The researcher was aware of the limitations of his close involvement with the participants when acting as facilitator and attempted to stay in tune with what was going on around him at all times, so key observations were not missed. Coaches and co-facilitators were utilised to act as informants if the researcher missed any key interactions because of his facilitation role.

Site

**Kangaroo Valley Intervention Site:** Participants traveled two and a half hours south of Sydney, to The Scots College, Outdoor Pursuits Centre in Kangaroo Valley, NSW, for a weekend intervention beginning Friday night at 6.00pm and finishing Sunday afternoon at 5.00pm. The centre is situated on a Lake in a rural setting surrounded by the rugged Morton National Park. Teams resided in a dormitory cabin style accommodation for their first night.

**Friday evening:** Friday evening utilised a multi-purpose hall, which had a climbing wall, abseil platform, high rope elements “The giant swing”, as well as facilities for icebreaker and initiative activities.

**Saturday Day Time:** A wide range of sites was used on the Saturday of the intervention. At sunrise, the day began with a run around the cross-country jogging trails, followed by a swim in the lake. A flat grassy area near the lake was then used for stretching and some centering and breathing exercises. After breakfast, the group departed for a day bush-walk in Morton
National Park. The walk totalled ten kilometres in distance, however took 10 hours to complete because of the difficulty of the terrain and other activities incorporated into the trip.

The first leg of the hike rose steeply up a fire trail, gaining 400 mts of elevation in the first kilometre. The group then climbed and scrambled through broken cliff lines to access the mountain plateau of Mount Cariallo; this involved spotting and teamwork to negotiate. Navigating across this plateau section involved following a compass bearing in thick, scratchy, untracked Australian scrub. Scrambling over rocks, getting cuts and bruises to the legs, walking through swamps, getting leeches, being hot, sweaty and filthy dirty, were all part of the mental challenge. The plateau leg finished at an eighty-metre high cliff, which had spectacular inspirational views of the surrounding National Park. Participants then had to abseil from this cliff to continue their journey. At the base of the cliff, athletes sidled on steep loose terrain until they reached a ridge that led back into the valley below (participants were required to wear helmets and safety harnesses during this leg of the trip). Walking was extremely difficult and slow through this section. The descent down the ridge had many hazards and difficulties, including: steep loose terrain that required one to lower their centre of gravity in steeper sections; more hidden cliff lines that could only be negotiated with teammates spotting one another; pockets of stinging nettle and thick scratchy bush. Participants were met at the base of the ridge and were bused back to the Outdoor Pursuit Centre base.

Saturday Evening: Players were bused back to a primitive camping area along the edge of the Lake. It was a flat grassy area surrounded by trees, and inhabited by an abundance of wildlife including, Wombats, Kangaroos and Parrots. The campsite had no modern facilities other than a portable toilet (especially bought in for the group) and a fire pit that had logs around it for seating. Awaiting the groups arrival, was a pile of equipment that needed sorting and organising, this included: Cooking equipment, fuel, water, food, and overnight camping gear. No showers were available and athletes either had a soap free swim in the lake, or a wash away from the banks of the river.

Sunday Morning: The Lake was again utilised for a compulsory dawn team swim, before packing up, and driving ninety minutes to Bungonia National Park. Bungonia is a plateau of land, unique for its limestone caves. Two caves were selected for training purposes; Hogan’s Hole/Fossil Cave (B4-5) and Argyle Cave (B31). Hogan’s Hole/Fossil Cave is a “through”
cave, with different entry and exit points, and a variety of cave geology to challenge participants, this included: dusty, rocky crawls; belayed traverses above gaping chasms; belayed ladder climbs; scrambling and climbing over impasses. Participants were required to wear safety harnesses, helmets, and headlamps in this cave. Argyle cave is a horizontal cave system, with a series of tight passageways that involved “squeezing” through many tight sections on the way to the end of the cave. Once at the end, retracing the route in, was the only option for exiting. No technical equipment other than headlamps and helmets were required.

Netball Specific Site: Follow up activities, observations, instrument administration, and interviews were conducted at the NSW netball-training venue in Sydney. This consisted of a large building with multiple netball courts, in and outside the facility. Weekly training sessions and trial matches were conducted at the centre between the intervention weekend and the national championships. Traditional physical and technical training was integrated with skills learnt during the adventure-based training weekend. A meeting room was utilised to conduct interviews and administer questionnaires.

National Championships Site: During Easter the team traveled by bus three hours south of Sydney, to the Australian Capital Territory (ACT), where the team participated in a five-day tournament to decide the Australian netball age championships. This was an indoor facility consisting of two courts surrounded by grandstands for spectators. Players resided at a local motel during this week.
QUANTITATIVE APPROACH

The quantitative method utilised a quasi-experimental time series research design. This design was chosen as subjects in the study were not randomly selected, but participated as intact sporting groups (Cohen & Manion, 1994). It was hypothesised that the quantitative approach was most appropriate to answer the outcome questions related to the efficacy of team cohesion.

Instrumentation

Team Cohesion was the dependent variable being investigated and was assessed by means of the Group Environment Questionnaire (GEQ) (Carron et al., 1985). (See Appendix 8) This instrument was chosen as it was the most utilised instrument in team cohesion research and had positive critiques in recent sport psychology instrument evaluations (Duda, 1998). The GEQ was derived from a conceptual model that considers cohesion to be a multidimensional construct that includes task and social aspects, each of which reflects both an individual and a group orientation. The GEQ has 18 items presented on a 9-point scale anchored at the extremes by Strongly agree (9) and Strongly disagree (1); scoring was treated as interval data. Four subscales of cohesion are contained in the GEQ, these include:

- **Individual Attractions to the Group-Task (ATG-T)** consists of four questions, which measured the individual group member's perception about her personal involvement with the group task productivity, goals and objectives; (Internal consistency, .75)

- **Individual Attractions to the Group-Social (ATG-S)** consists of five questions, which measured the individual group member's perception about her personal involvement, acceptance, and social interaction with the group; (Internal consistency, .64)

- **Group Integration-Task (GI-T)** consists of five questions, which measured the individual group member's perception about the similarity, closeness, and bonding within the group as a whole around its task; (Internal consistency, .70)

- **Group Integration-Social (GI-S)** consists of four questions, which measured the individual group member's perception about the similarity, closeness, and bonding within the group as a whole around social aspects. (Internal consistency, .76)

Scales were calculated so that larger scores indicated greater cohesion. Previous research has indicated that the GEQ possessed sound content, construct, concurrent and predictive validity (Carron et al., 1985).
Quantitative Procedure

Vealey (1994) in her evaluation of past research in sport psychology, identified a lack of data examining the maintenance of treatment effects over time. She believed this was particularly important:

Due to the educational approach of psychological skills training in which the objective is to teach mental skills that become well learned and implemented into the psycho-behavioural routines of athletes...It seems critical that we begin to evaluate the effects of our intervention for a period of time after the initial treatment (p.499).

In answering Vealey's call, this investigation planned to follow the treatment group for a period of time after the intervention to determine the longitudinal effects of the adventure-based training program on team cohesion. Four time measures were taken during the study. Time 1, was taken two weeks prior to the intervention. This data collection was taken to gain a baseline reading to control for pre-course anxiety or euphoria, which could occur at the time two measure; Marsh, Richards, & Barnes (1986) recognised that scores on inventories could be influenced by the emotions of groups arriving at the site of an intervention. (Any significant rise or fall in scores in the intervention group between time one and time two could be put down to this pre-course anxiety/euphoria phenomena). There was no differences identified between groups at time one, thus no need to treat subsequent data to control for this factor. Time 2 measure, occurred on the Friday evening when participants arrived at the weekend intervention site. Time 3, took place in the week after the intervention back in Sydney. This was done to control for post-group euphoria (Hattie et al, 1997), which is the artificially high affect sometimes reported immediately following adventure experiences. Time 4 took place 8 weeks post the intervention just prior the national netball championships and was conducted to determine the longitudinal affect of the intervention (Figure 10 shows a time line of data collection).

Data collection for the intervention groups was administered by the participant facilitator/researcher, who was a thirty-nine year old Anglo-Australian male (Chapter 4 outlines the researcher/facilitators role in more detail). The researcher had undertaken several courses in introductory and advanced research methods during graduate studies, and had conducted several research projects prior to this present study. The control group data collection was administered by the coach of the team due to the large distances and expense required to travel to their training venue. Instructions were provided to guide the collection
process, with follow up phone calls to check for clarity and understanding of procedural processes.

**Statistical Analysis**

A statistical package for social scientist (SPSS version 10) was utilised to perform the necessary data analysis. When writing the statistical programs, all negatively worded items were recoded ensuring that the results were returned to positive scoring. Data was analysed in a sequential manner examining macro trends across all groups, and then investigating micro trends within each group. The following outlines the process that was followed:

1. Descriptive statistics (means and standard deviations) were calculated for the dependent variable.

2. A series of 3 (group) x 4 (time) repeated-measures analyses were conducted, with treatment group and time as the independent variables. Multivariate and univariate analysis were used to test for parallelism or interaction between groups across time. (See figure 11). Where testing indicated the group results were not parallel, further testing was conducted to determine the degree of difference between groups. The following testing was utilised for this purpose:
3. A series of analysis of variance tests were then completed to assess differences in groups at each time-period within each sub-scale (see figure 11 A). Post hoc Bonferroni tests were used to identify where these differences occurred.

![Graph showing analysis of variance and effect sizes](image)

**Figure 11:** (A): Analysis of variance tests were conducted across all three groups for each time-period.
(B): Effect size testing examined changes within each group for times 1-2, 2-3, 3-4.

4. Finally, the longitudinal effects of the intervention were examined using “effect size” calculations. These were calculated for each group to determine the degree and significance of any change between each testing time. (See figure 11 B).

As the statistical use of effect size reporting in outdoor education and sport psychology research is not as common as other fields of study, the following section outlines for the reader the rationale for using “effect size” statistical analysis. This information is based on PhD work by Neill, (in press).

**Significance Testing and Effect Size**

Neill (in press) has analysed the use of statistical testing with small groups in outdoor education, and has proposed a rationale for alternative methods of reporting results of analysis. The following outlines his recommended process for “Effect size” reporting, which was incorporated into the quantitative results reporting of this investigation.

Fisher developed the significance testing procedures in the 1920s so that agricultural scientists could decide whether fertilizer A was better than fertilizer B. The binary approach of significance testing is appropriate for experiments,
which are designed to return a clear-cut yes or no answer. Indeed, there are applications in psychology and education where such an approach is useful.

In the case of outdoor education research and particularly in evaluation studies, the interest is less in whether or not an effect occurred, and more in understanding how much change occurred and in what areas for which people. Further, just because an effect is statistically significant, is no guarantee that the program was more effective than last month’s program, or more effective than other outdoor education programs or more effective than a classroom-based program which had the same objectives. In addition, just because an effect is statistically non-significant, it is likewise no guarantee of concluding these matters in the other direction. The good news for researchers is that there are statistical methods available to help correct this major oversight in outdoor education research.

The major new statistical tool, which is recommended for adoption by outdoor education researchers and evaluators, is called an “effect size” (ES). The ES measures “how much” change or difference there is between two sets of scores. The ES is simple to calculate and can be readily interpreted by non-statisticians.

In mathematical terms, an ES is the average difference between two sets of scores in standard deviation units. An ES measures, for example, the standardized change in raw scores between the beginning and end of an outdoor education program.

A negative ES indicates that scores have been reduced. An ES of 0 indicates no change, and a positive ES shows that scores have increased. ES’s have no lower or upper limits.

This mathematical side of ESs may already look daunting; hence, a descriptive approach is followed here to illustrate what an ES means and how it can be applied. Based on outdoor education studies representing over 12,000 participants it can be estimated that the average outdoor education ES is between .3 and .4 (Cason & Gillis, 1994; Hattie, et al., 1997). Hence, the following Table 1 can be suggested as a guide for interpreting outdoor education ES’s for individual programs.

<table>
<thead>
<tr>
<th>Effect Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>below .1</td>
<td>No detectable change</td>
</tr>
<tr>
<td>.1 to .2</td>
<td>Small Change</td>
</tr>
<tr>
<td>.2 to .3</td>
<td>Small-Medium Change</td>
</tr>
<tr>
<td>.3 to .4</td>
<td>Medium Change - <em>Average for reported OE Research</em></td>
</tr>
<tr>
<td>.4 to .5</td>
<td>Medium-Large Change</td>
</tr>
<tr>
<td>.5 to .6</td>
<td>Large Change</td>
</tr>
<tr>
<td>above .6</td>
<td>Particularly Large Change</td>
</tr>
</tbody>
</table>
A further advantage of the ES is that it is measured on a proportional scale. In other words, a large ES of .6 represents twice as much change as an average ES of .3. This can be valuable when trying to weigh up the relative impacts of a program on different sorts of outcomes. It is also advantageous when monitoring the impact of adjustments to the program delivery.

Since the ES is measured on a standardised scale, results from different outdoor education studies can be readily compared. In addition, outdoor education results can be compared to other educational or psychological intervention techniques. Table 2 reports results from meta-analyses against which outdoor education program outcomes can be compared. Overall, it can be seen that the average effects sizes found in outdoor education research are comparable to self-esteem changes in psychotherapy and stronger than the impact of classroom interventions on self-esteem and other affective outcomes.

Table 2: Effect sizes from meta-analyses of intervention programs

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. effects</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall achievement in classrooms</td>
<td>165,258</td>
<td>.40</td>
</tr>
<tr>
<td>Overall affective variables in classrooms</td>
<td>24,780</td>
<td>.28</td>
</tr>
<tr>
<td>Overall self-esteem effects in classrooms</td>
<td>1,399</td>
<td>.19</td>
</tr>
<tr>
<td>Overall self-esteem in psychotherapy settings</td>
<td>387</td>
<td>.37</td>
</tr>
<tr>
<td>Overall outcomes in adventure education</td>
<td>1,728</td>
<td>.34</td>
</tr>
<tr>
<td>Overall outcomes in adventure education with adolescents</td>
<td>147</td>
<td>.31</td>
</tr>
<tr>
<td>Overall locus of control in adventure education</td>
<td>30</td>
<td>.36</td>
</tr>
</tbody>
</table>

In summary, quantitative statistical analysis first involved the use of a series of repeated measures. This initial analysis indicated possible interaction between groups across time. This then warranted further investigation to identify trends in the data. Analysis of variance testing and the use of effect size analysis was utilised for this purpose.
QUALITATIVE APPROACH

Neill (1998) called for future research in adventure programming to clearly outline the process involved in adventure-based programming. The qualitative approach was most appropriate to address these process questions. In addition, the qualitative data can add validity to the outcome variables that were studied through quantitative analysis (Hardy, Jones, & Gould, 1996).

A variety of methods were used to obtain qualitative data during the investigation, these included: observations, interviews, photography, and video. Observations occurred during all aspects of the weekend intervention as well as netball training and competitions up to and including the national championships. The purposes of these observations were to gain knowledge and understanding about how the intervention impacted on individual and team elements of psychological skills development and team cohesion. The interviews, which were conducted at various intervals and in various forms during and after the adventure-based training intervention were designed to triangulate the earlier observations, and to gain an understanding of how the intervention impacted on the athletes, not only during the intervention weekend, but more importantly during netball, and life in general. The video and photos were used during the final focus group interviews to aid reflection on the adventure training experience and how it impacted on players and coaches.

Observations

In line with previous research (Meyer & Wenger, 1998), earlier observations during the intervention and early season training/competitions were unstructured. The researcher attempted to remain unbiased and neutral in his interpretation of the observations, and simply reported facts as they were seen. As a picture developed with the analysis of these observations, further structured observations were used to guide the investigation of emerging themes such as; application of psychological skills and improved team cohesion at training and in competition.

The researcher also had the role of participant observer during this investigation. Generally, participant observation requires the researcher to play an active role in the setting being studied. Participant observation is often used when the research question is concerned with “human meanings and interactions viewed from the insiders’ perspective” (Jorgensen, 1989; p.13, cited in Brymer, 1999). The data gathered was qualitative in nature and obtained through direct observation, and second hand observation through other facilitators, or
coaching staff and through the use and analysis of video, and digital still photography. Researchers involved in participant observation inevitably influence the situation and potentially change the natural order of things. As such, it is not always possible to determine the objectivity of the information obtained (Wann, 1997). To counter this concern, a diary was carried by the facilitator/researcher to record observations and reflections when opportunities between activities allowed. These notes were expanded and transcribed into a word processing document as soon as possible after the observation. Following Dale's (1996) recommended protocol, a small research group including the researcher, his supervisor and one of the co-facilitators from the intervention weekend analysed the transcripts for potential meaning and possible interrelationships.

While Wann (1997) was concerned with the observer "changing the natural order of things", other researchers (Phipps & Claxton, 1997; Phipps & Swiderski, 1990 cited in Meyer, 1998; p.248) had an alternate view. They suggested, "by creating a safe and comfortable environment, encouraging participants to take risks, and reinforcing the transfer of concepts beyond the adventure site, they [the facilitator/researcher] may play an instrumental role in the overall outcome and evaluation of the adventure experience".

During interviews with participants, subjects were asked to evaluate the impact that instructors or facilitators had while observing participants during the adventure-based training experience, or during netball training/competition. All those questioned, believed that the presence of adventure staff were an asset and benefit to their experience, and a necessary part of their learning. During observations at training and competition, the researcher deliberately tried to remain covert so that normal routines and on court behaviour were not specifically influenced by his presence.

**Interviews**

Having an understanding of the processes and outcomes of the intervention from the athletes' perspective was an important goal of this research. This goal had to be achieved within the framework of the intervention, which was to prepare athletes for their national championships. With this constraint, the researcher had to schedule interviews so they did not interfere with the primary focus of the team. Sparkes, (1998, p.375) in discussing method procedures stated that "the choice about procedures in any instance depends on what seems important at the time"; meaning that the method used should match the inquiry so that the "rights of the stakeholder are honoured", and not interfered with beyond what is reasonable.
(Guba & Lincoln, 1989). With the rights of the stakeholder in mind, interviews were conducted during the intervention weekend, with the coaching staff only in the lead up to the national championships, and with players and coaches eight weeks after the intervention, which was after the national championships. The advantages of this procedure was that athletes had time to reflect upon, practice, and implement any valuable learning into their netball lives, and determine its effectiveness under the real world challenges of the national championships.

For major interviewing to have occurred any sooner, the athlete’s perspective of whether the intervention impacted on their mental and team netball skills at the nationals would have been missed. A disadvantage for waiting these two months may have been the potential for participants to forget key learning or issues that were important during the intervention. In order to address this issue, the researcher developed a training workbook that required different sections to be completed at training each week, under the facilitation of the coach (See appendix 7). With this, important issues and skills that were identified during the adventure-training weekend could be revisited again each week at training. At the interview session eight weeks after the intervention, the researcher conducted several debriefing activities incorporating slides and reflection activities, which were designed to address the issue of forgetfulness by bringing the learning from the intervention back to the fore of the participants’ present cognitive thought processes.

In order to ensure the “athletes perspective” was reported, several techniques were utilised, which included; debriefings (Priest & Naismith, 1992) and informal conversational interviews (Patton, 1980), which occurred primarily during the intervention weekend. Focus group interviews (Byers & Wilcox, 1991) and unstructured phenomenological interviews (Dale, 1996) took place after the national championships.

**Debriefing**

In the procedures section, the debriefing process was described in detail. These debriefs formed an integral part of the intervention weekend. Rich dialogue among team members took place during these times providing valuable data from the athletes’ perspective. The questioning during these debriefs, focused on gaining an understanding of how the athletes thought they were operating as a team, and how the intervention was impacting on them. At the first available time after these debriefs, the researcher made field notes documenting the
Informal Conversational Interviews

Field observations were regularly corroborated through frequent unstructured interviews with team members, coaching staff, and other facilitators. This form of triangulation helped to clarify emerging themes to the researcher, as well as helped to clarify any researcher bias in observations (Glesne & Peshkin, 1992).

The unstructured interview is what Patton (1980, p.206) called "informal conversational interviews". Examples from the research project would include: checking in with the coach when dysfunctional behaviour was being observed to verify observations, and talking to athletes or coaching staff during an "edgework" moment. During these highly anxious moments, first hand information about how the stress of the activity was affecting the individual was gained. In keeping with the goal of "exploring the participants perspective", this form of interview allowed for the participants to describe what they were experiencing, rather than just an interpretation through observation. Closely following the debriefs, the researcher made field notes documenting these conversations. These field notes were later typed and shared with the other facilitators who were present at the observation to check for accuracy and meaning.

Focus Group Interviews

Focus groups are one of several techniques used in qualitative research. Byers & Wilcox (1991, p.65) describe focus groups as a "discussion group that concentrates on a particular topic or topics, that is facilitated by a trained moderator, and that typically consists of eight to twelve participants". The focus groups method has been viewed as a "bottom-up" approach, meaning opportunities are created for the researcher to develop concepts, hypotheses, and theoretical propositions from the data gathered (Byers & Wilcox, 1991). Based on this assumption, focus groups were a valuable measuring tool in exploring new territory in this study, such as the effect of adventure-based training and its impact on the athletes' psychological skills development both during the intervention, and more importantly its transferability to the sporting situation. It was fundamentally assumed that the researcher would gain valuable insight into the players existing beliefs, behaviours, and attitudes with regards to the impact of the intervention on their netball sporting lives (Byers & Wilcox, 1991); because of this, focus groups were deemed an excellent source of qualitative data.

96
The focus group method was selected for this study, based on the premise that the data could be obtained through a technique which allowed the participants to freely express their concerns and feelings (Byers & Wilcox, 1991). This method of exploration exposed the participants' underlying attitudes, feelings, behavior patterns and opinions, which were formulated from exposure to the intervention. In matching the research method to the experience of the participants, Byers and Wilcox (1991) recognised that when a researcher is attempting to explain why subjects reacted in a particular manner to a shared experience, then the focus group method is suggested as a data gathering technique.

There were several advantages of conducting focus group interviews in this study; these are outlined by below:

1. **A Release of Inhibition by Participants:** Due to the success of the debriefing process during the intervention, athletes were already comfortable talking about their experiences. It was a familiar and safe way for them to communicate that had proved successful earlier in the intervention.

2. **Exploring Deeper Meaning:** The focus group was enthusiastic to explore linkages that went untouched during the quantitative team cohesion part of the study.

3. **Time Efficiency:** Athletes who participated in this intervention traveled anywhere from thirty minutes to eleven hours every weekend to attend training with the netball team. Efficiency of time was critical for the interview process. Eliciting response from a team of netballers in a focus group lasted about two and a half hours; this was more "time effective" than interviewing the same number of people individually.

4. **Interpretability of Data:** Making meaning of previous observations was clarified from the athletes’ perspective during the focus group meeting. Group consensus was also obtained with regard to the efficacy of many aspects of the intervention.

5. **Information Exploration:** The focus group provided an opportunity to explore for basic information about the intervention's impact, as little was known in advance of the investigation. The focus group provided a basis for formulating further research questions, which were followed up in one on one unstructured interviews after the focus group interviews.
6. **Manipulation Check**: The focus group provided what Vealey, (1994) called a "manipulation check". Athletes through their testimony verified observational and quantitative data results to help strengthen confidence in the treatment effects, and support for internal validity within the quantitative component of the study.

The focus group interviews were conducted in a meeting room at the netball team's training venue at an end of season wrap up after the national championships. The first interview was conducted with the players and coaching staff of both the under 17 and under 19 teams. While interviewing both teams at once may not have been the most effective approach, the researcher was limited by the amount of time given to him by the team management, thus the focus group was the most appropriate means of dealing with this limitation (Byers & Wilcox, 1991; Veal, 1997). Following this initial data collection, coaching and management staff were interviewed separately. The focus group interview was conducted prior to the individual phenomenological interviews in order for the researcher to gain a greater picture of the groups' perceptions of the adventure training intervention and its efficacy. The individual interviews followed so that matters that needed clarification or more detail could be investigated through further probing of issues.

It was important to provide opportunities for the athletes and coaches to talk about "their" experience. A powerpoint digital slide show with photographs from the intervention and netball competition were presented prior to the beginning of the focus group interview, in order to revisit the netball season. These slides were also referred to during the interview process in effort to know what thought processes were occurring in the participants at those times. In addition, a series of questions were developed based on initial data analysis with the goal of determining whether the athletes transferred any of their learning to netball; and whether this learning was of any value (See appendix 9).

The focus group interviews were videoed and tape-recorded. These were then transcribed exactly in the athletes' language without interpretation by the researcher as recommended by Dale (1996). These were then taken to a research group convened by the researcher where the transcripts were read aloud, with a consensus required to verify meaning To ensure credibility, a final member-checking meeting was conducted so conclusions drawn from the data could be checked against the participants' recollection of their experience (Dale, 1996). This was attended by the coaches and captains of both teams two weeks after the focus group interviews took place.
As outlined above the focus group method provided many advantages to gathering the data required for this study. The literature however, identified possible drawbacks to this method of data collection; several concerns were identified by Byers & Wilcox (1991). The first was the chance that individual subject responses may conform to group responses in an attempt to remain within the team norm. Secondly, there was the potential that if there was disparity between the groups, there could be a risk that the complete picture from the intervention may not fully emerge.

In the context of this present investigation, the coaching staff were present along with the players during the focus group interviews. The whole adventure-training program centred around being a “team of NSW netballers”, and that team consisted of coaches and players from both teams. The researcher considered it important to gain a group perspective of the impact of the intervention, therefore having both players and coaches present at one time, was seen as a continuation of the intervention philosophy. Conducting separate interviews with the coaching staff after these initial focus group sessions was an attempt to clarify issues and triangulate emerging themes (Cohen & Manion, 1994).

This decision was based on a rationale that relationships at the end of the season were extremely positive, and there were no negative behaviours or disparity among coaching staff or players within or between teams, that would have impacted upon open and honest communication flow during the interviews. Secondly, future involvement in any representative team was not based upon coaches input; independent selectors were responsible for the selection of future representative teams, therefore players were under no threat to conform. Given that these issues posed a potential threat to validity, the coaching staff and researcher, prior to the commencement of the focus group interviews, made it clear that it was okay to comment on any aspect of the intervention whether positive or negative, with no risk of any retribution. (Both teams had already been operating under these guidelines throughout the season, as open and honest communication was identified as a key to successful team-cohesion).

It was suggested to the researcher by academic supervisors, that a self-report system might have given participants an avenue to report any negative issues with which they felt inhibited to reveal in a group context. It was however felt by the researcher and coaching staff, that this extra work on top of the four team-cohesion questionnaires already administered,
traveling to and from training, training, and academic requirements of school could have impacted negatively on the team, the study, and its goals.

In order to explore more deeply emerging issues, phenomenological interviews were carried out with individual participants.

**Phenomenological Interviews**

Several stated goals of this study included measuring performance outcomes and psychological skills of athletes. Some readers with a sport psychology or positivist background may question why the research design did not include a battery of tests to measure these elements of athletic prowess; the following gives a brief rationale for these decisions and then leads in to a justification for the use of phenomenological interviewing.

Firstly, the threat of type II errors because of the small number of subjects available when working with intact teams like in this present study, makes it mathematically unlikely to report an effect. Neill (in press) states:

> It is no small tragedy that much well-intended research in the past may have concluded no effect simply due to lack of power in the experimental design. In a field, such as outdoor education, where practitioners are usually passionate about their program's effects, the lack of power in much previous research may help to explain the general air of cynicism about the 'inability' of empirical investigation to detect outdoor education's 'real' effects. Clearly, it would be prudent for researchers to calculate power before investing effort in studies that plan to utilise significance testing.

The quantitative team-cohesion element of this investigation was already limited by the lack of statistical power that working with small netball teams provided. The researcher felt it important to limit exposure to type II errors in the analysis of data; therefore, further quantitative testing was ruled out.

On top of this statistical factor, a more practical limitation for all areas of data collection confronted the methodology of this investigation. Athletes were being studied "intact", meaning they had an existing set of routines and responsibilities that had to be completed at training, and any time they were together as a team. This left very little time for the researcher to add "extras" onto an already tight timeline the team was functioning under (finding time to administer the cohesion instruments challenged the coaching staff enough). The researcher could not ethically administer a battery of testing to explore statistical gains or losses, as this
would have resulted in a major intrusion into the netball team's preparation for their national championships.

With these limitations in mind, Dale's (1996) emphasis on delving into the experience of the athlete through, “existential phenomenology” was a guiding influence on the administration and analysis of the qualitative investigation process. As has already been described it was just one of several qualitative approaches utilised, however, the principles of phenomenology formed the foundation for all the naturalistic methodology during the research; that is gaining the perspective of the athlete. If the researcher was going to take up the valuable time of the athletes, finding out about their experiences and how the intervention impacted on them personally, and as a team in their sporting environment, was far more appropriate and important than risking further quantitative testing and type II error.

Underpinning the phenomenological interview process is the belief that “once the topic of investigation was identified the participant should be allowed to describe that experience as he or she lived it” (Dale, 1996, p.313). The interview process in this investigation was open-ended and semi-structured with the length of the interview ranging between thirty and sixty minutes. Participants were encouraged to reflect on their experience and convey it in as much detail as possible. This was tape recorded onto a audio-cassette, transcribed and collated with other interviews and observational data ready for analysis. Powerpoint photos of areas that the researcher wanted to know more about were shown to the athlete or coach. From here on, the athlete was allowed to talk freely about their experience. For example, questions such as, “This photo shows you shooting for goal in the final. Can you tell me what pressure you were experiencing at this point and whether anything you learnt during your adventure training helped you deal with this situation?” Further questioning followed the athletes’ dialogue with the aim of finding more about the athletes experience, rather than confirming the researchers previously held hypotheses (Dale, 1996).

Rather than just focusing on the athletes’ general opinions, the interview focused on specific situations and action sequences concerned with the theme under question. For example; when answering the above question the athlete said, “she felt really nervous”. The next question asked her to describe what thoughts and physical feelings were going on in her body at that time (Figure 12 outlines this process). Finally, matters that arose out of the focus group interviews that required clarification or further explanation were explored.
Four athletes were interviewed using the phenomenological interview process; in addition to these players, the two coaches and two managers were also interviewed. It could be argued that by only including a small number of participants in the phenomenological interview process, certain perspectives could have been missed. This however, had to be weighed up with the time constraints that were on the players, and limited access the researcher had to the players. (With this in mind, the focus group interviews explored key aspects of the intervention in detail).

The two-team captains were the first-two selected, as they had great rapport with both players and coaches. It was felt they could give a balanced and neutral account of their experience both as players and from their leadership position within the team. They were also suited to give an overall impression of their team's view of the intervention and its impact on the team's performance throughout the season. The other two players selected, were two of the goal shooters. They were chosen as they stood out in the focus group interviews as having such rich stories to share as to how their adventure experiences impacted on their netball game; further probing was conducted to unpack this transfer of learning.

Data Analysis

All data from observations, and interviews were typed and organised into computerised data files. Following Dale's (1996) recommendations (See Figure 12) the entire transcript was read through several times to obtain a sense of the whole. Once completed, significant statements or observations that pertained to the experience were coded using "open coding" (Strauss & Corbin, 1990). From this data, meaning units emerged, which were then sorted into categories. These key categories were further divided by "axial coding" (Strauss & Corbin, 1990). Each of the initial open codes was looked at in more detail with an attempt to find evidence of variation, and the processes, which led to the event being looked at. From this process, a second phase of categorisation resulted in subcategories being developed.

With a draft coding of the data complete, a panel was put together to independently assess the researchers coding. The researcher's supervisor, one of the coaches, and an adventure training facilitator were taken through several transcripts. Each of the transcripts was read out with frequent pauses for discussion on the meaning of the data. If a consensus on the categories was made, the researcher moved on to the next transcript. The goal of this process was to verify that the researcher's categorisation was based on the data and the athletes' experiences, and not the bias of the researcher. While the involvement of the panel was
beneficial in moderating any researcher bias in the coding of the interviews, time commitments prevented the panel from being involved for the interpretation of all the data. The rationale behind their partial involvement was simply to verify that a neutral and balanced process was being conducted by the researcher. While this approach was not ideal,
it was all that could be arranged due to the busy schedules and distance between the parties involved.

The next stage of the data analysis involved the use of hermeneutic procedure (Dale, 1996); which is an interpretive process of the phenomenological interview, where each participants experience was worked into a case study, with the athletes’ story being described in thematic detail. Following this step, each interview was interpreted in relation to the others in an attempt to identify ways in which one experience was similar to another.

The last step in the analysis was to report the findings to several of the participants in the study; this was limited to the four athletes and four coaching staff who were involved in the phenomenological interviews. The general question that required answering during this process was; how do the descriptive results compare to your experience during the adventure-based training intervention? Any changes were either added or deleted in the final draft of the project.

**Trustworthiness**

Trustworthiness simply put is, “methods to ensure that one has performed the research process correctly” (Manning, 1987, cited in Sparkes, 1998). Sparkes (1998) addressed the issue of validity and trustworthiness in qualitative inquiry and its implications to sport psychology research. In an historical overview, he traced the roots of qualitative inquiry in sport psychology, highlighting the positivistic perspective that underpinned early attempts at qualitative research. Initially, the sport psychology community felt that one set of criteria for doing research should be applied to both forms of scientific research; that is quantitative and qualitative. Fortunately, thinking on this has shifted over the past few decades.

Lincoln and Guba (1985) were instrumental in developing a separate set of criteria for judging the validity (positivist language) or the “trustworthiness” of qualitative investigations suggesting that qualitative researchers must account for dependability, confirmability, transferability and credibility if they are to ensure the trustworthiness of their research.

1. **Dependability** accounts for factors of instability and change, which are produced within the design of a study (Lincoln & Guba, 1985). To guarantee dependability a thorough and complete methods section documented all key processes. Triangulation and cross-referencing techniques were utilised to strengthen the research methodology as well as enforce the validity of the inquiry findings. (Cohen &
Manion, 1994). In addition, each phase of the data collection and analysis: that is, the interview tapes, interview notes, transcripts, all drafts of the analysis and the final report of the study are preserved as evidence of the process undertaken during the investigation.

2. **Confirmability** assures that the interpretation of the data will be truly representative of the contexts and the perspectives' of the participants being investigated (Lincoln & Guba, 1985) and not influenced by the researcher’s bias. The qualitative results section provides a detailed account of the athletes’ experience based on data from: group debriefs, informal conversation interviews, focus group interviews, phenomenological interviews and then triangulated against observations, member checks and quantitative results. The researcher had, through the inclusion of a “researcher as instrument statement” and undergoing a bracketing interview, attempted to make public any personal biases (Dale, 1996).

3. **Transferability** is the researcher's ability to provide a detailed description (time, place and context of the study) allowing other researchers to duplicate their study with a different group of participants (Lincoln & Guba, 1985). Neill (1998) and Vealey (1994) called for future research in adventure training and sport psychology to describe intervention methods in enough detail for readers to understand the type and extent of each treatment. This present investigation followed this request by incorporating a detailed account of methods procedures in chapter 4 of this thesis.

4. **Credibility** is ensured when the researcher is able to accurately match the realities constructed by the participants (perceptions) and the realities transferred by the researcher (Lincoln & Guba, 1985). To ensure credibility, several techniques can be used, including: (a) member checking, (b) peer debriefing, (c) prolonged engagement, and (d) persistent observation (Lincoln & Guba, 1985).

While this list of criteria for a trustworthy study was the benchmark for many years Guba & Lincoln (cited in Sparkes, 1998, p.374) now recognise that “while their 1980’s work was well received, their parallel relationship to positivist criteria made them suspect”. Sparkes (1998) now argues that trustworthiness is dependent upon time and place. He states:

This does not mean that procedures or methods should be abandoned, nor does it mean that researchers can do whatever they want in a procedural sense. It simply means that methods or procedures should be put in their
place and recognised for what they are and the job they can do in specific contexts for certain purposes (p.374).

Given this shift in establishing criteria of trustworthiness, a variety of new methods and techniques were utilised in this study in addition to the traditional trustworthiness criteria of Lincoln & Guba, 1985). These new techniques were suited specifically to the circumstances of this study and the participants involved, and were included to strengthen the overall validity of the investigation (Sparkes, 1998). The extra trustworthiness methods included: a researcher as instrument statement, bracketing, first-person description, triangulation and catalytic validity.

1. **A “researcher as instrument statement”** was included to give the reader an overview of the researcher's life and academic experiences related to this research project. The goal of this endeavour was to expose any potential biases that may have contributed to how the research project was designed or analysed. This kind of statement is common in naturalistic inquiry and allows the reader to make their own judgment on potential conflicts of interest.

2. **Bracketing:** Prior to the intervention the researcher met with his supervisor where a “bracketing interview” (Dale, 1996, p.311) was conducted. During this process, biases were explored with the researcher being asked questions about the topic. Pre-conceived assumptions of the researcher were explored. The researcher documented biases and presuppositions making them visible from the very beginning of the project.

3. **First Person Description:** Dale (1996) recognised that a study using phenomenological interviews lacks validity if it lacks a first-person description of the experience of the participant. “The goal of this process is to see whether a reader of the research, who adopts the same viewpoint as the researcher, can see the same things the researcher saw whether he or she agrees with it” (p.317). This study attempted in the methods and results section, to provide thick descriptive data from the athletes’ perspective.

4. **Triangulation:** is the use of multiple data collection methods within the research design. Cross-referencing data through this method increases trustworthiness (Glense & Peshkin, 1992). In this study, several methods of triangulation were used, these included:
a. The use of quantitative data to help build a bigger picture as to what occurred during the intervention.

b. The use of participant checks to help verify the accuracy of the researchers' interpretation of their experience.

c. The use of independent research group to verify the coding of transcripts.

d. The use of several forms of observation and interview techniques to try to capture the athletes' experience from a variety of different perspectives.

5. Catalytic Validity: Catalytic validity is "the degree to which the research process energised participants and altered their consciousness so that they knew reality to better transform it" (Lather, 1986, cited in Sparkes, 1998, p.376). In summarising catalytic validity, Sparkes (1998 p.376) believed that validity in critical research, might involve evaluating the effectiveness of the research process in empowering and enabling participants to create change”. For this researcher, all the evidence pointed to the fact that the intervention empowered participants and resulted in significant change in their sporting and personal lives; therefore, catalytic validity was met.

Ecological Validity

As the methods chapters in this thesis highlighted, the multi-method research approach utilised an outdoor adventure intervention delivery, and then attempted to have athletes transfer their learning back to their sporting endeavours on the netball court; this goal of learning transfer for some readers may bring into question the study's ecological validity.

Ecological validity refers to the extent to which behaviour indicative of cognitive functioning sampled in one environment, can be taken as characteristic of an individual's cognitive processes in a range of other environments (Bronfenbrenner, 1979). In other words, can the mental and team skills athletes gained while receiving training in the adventure setting, be used on the netball court, and to what extent can the findings be generalised to the real world? An extract from an internet psychology dictionary psybox.com (2002) offers the following argument:

Invariably, studies in psychology involve a trade-off between control and ecological validity. The most control available to a psychologist is that which exists in the laboratory. However, there will always be debate about the extent to which findings from the laboratory can be generalised to other
environments, and especially the more "dirty" and less controllable environments in which everyday life is lived. Some will argue that the causal mechanisms, which are the *raison d'être* of science, can only be established in the laboratory; others believe that field studies are the only real option for psychologists who are interested in how life is actually lived.

This present investigation was interested in the latter kind of knowing: that is, how were the athletes' lives impacted upon during the adventure intervention, and more importantly how did this impact on their sporting endeavours. Careful consideration to the literature and current theories were considered in the development of the methodology to ensure the best chance of transfer occurring (Bacon, 1983; Gass, 1993; Gass, 1985; Knottenbelt, 2001; Priest and Gass; 1997; Priest and Gass, 1992). The researcher however, does acknowledge that issues of exact replication will be difficult, as several intervening variables would influence future research, for example, location of intervention, and facilitation style of program delivery. To address this issue, a highly comprehensive description of the intervention was included in chapter four, based on Neill (1998, p.3) & Vealey's (1994, p.449) request that "interventions should be described in enough detail for readers to understand the type and extent of each treatment".

The author believed that adequate measures were taken to reduce the threat of ecological validity. The rich text in the results section highlighting the athletes' experiences and the detailed methodology outlining procedures, gives the reader a chance to judge the validity and trustworthiness of the investigation.

Past and current research recommendations were implemented in this present study to ensure valid and reliable procedural practice was followed in the collection and analysis of data. With this, the reader should be confident in the trustworthiness of the results.
Chapter 4

INTERVENTION PROCEDURE

Procedure

Vealey (1994, p.499) stated that, "one problem in evaluating sport psychology intervention research is the lack of specific descriptions of treatments. Interventions should be described in enough detail for readers to understand the type and extent of each treatment. Neill (1998, p.3) identified the same concerns in adventure-based training research:

There is still much unexplained variation in the outcomes of programs. Part of the problem is that empirical research evaluation studies have tended to lack descriptive detail about how the programs were conducted. This lack of detail limited the extent to which further insights about program processes could be gained.

In supporting this call, the following procedures section will describe each part of the intervention in detail, highlighting the following key areas:

- Needs assessment that laid the framework for the intervention.
- The activities involved and their sequencing.
- The purpose of the activity and what need it was addressing.
- Facilitation techniques used during the activities.
- Post-intervention follow up activities.

Needs Assessment

After the initial contact was made with the under-nineteen netball coach at a National Sport Coaches conference (Boyle, 1998) a meeting was arranged to identify the key areas that required attention during the intervention. A strengths; weakness; opportunities; threats; (SWOT) analysis was conducted with the team coach, team sport psychologist, and the adventure-based training provider. Table 3 gives an overview of the SWOT analysis results.

A similar meeting was held with the coaching staff of the under-17 coach. She however, felt that her team was much more "functional" than the under-19 team and wanted the intervention to focus on developing team-work, along with mental skills that would assist athletes in competition as none of her players had any training in this area before.
Table 3: SWOT analysis for under-19 netball team

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individually, each athlete is talented</td>
<td>Some of the more experienced players play for themselves &amp; not the team.</td>
<td>Team has potential to win nationals if they can play as a team</td>
<td>Cliques have developed within team, causing friction among team members.</td>
</tr>
<tr>
<td>Individual netball skills are at a high level.</td>
<td>Infighting within the team, lacking in communication around important issues.</td>
<td>Develop mental skills that may give the players an edge in the heat of competition.</td>
<td>Lack of empathy and support for each other.</td>
</tr>
<tr>
<td>Players have a desire to compete at a high standard, they just don’t know how.</td>
<td>There is no outlet to voice team concerns or frustrations.</td>
<td>Time away from netball setting at beginning of season may help team unity.</td>
<td>Disparaging remarks between players after someone makes a mistake.</td>
</tr>
<tr>
<td>The team has a high fitness level and work hard on their netball skills.</td>
<td>Lack of mental skills to handle the pressures of competition.</td>
<td>Develop a mental plan that will guide team to nationals. “Journey to the nationals”.</td>
<td>Bench players disgruntled, team roles are not clear, players unsure how to handle.</td>
</tr>
</tbody>
</table>

In conjunction with the coaching staff, team sport psychologist, and a review of the literature (Butler, 1996; Orlick, 1986; Weinberg & Gould 1995; Winter & Martin, 1993) several important psychological skills were identified and agreed upon for the team. These included:

- Anxiety and Arousal regulation.
- Imagery (mental preparation).
- Confidence building.
- Increasing motivation and commitment (goal setting).
- Attention/concentration skills. (self talk, mental plans).

After the needs assessment the following objectives were outlined by the coaching staff to guide the design of the intervention:

1. Provide opportunities for the players to get to know each other outside of netball.
2. Provide a program that would “toughen” the athletes up, one that would push them to their physical and psychological limits, but have transferability to netball competition.
3. Set up opportunities for the group to discuss and resolve conflict within the team.
4. Provide opportunities to plan and prepare mentally for the upcoming national championships.
5. Introduce and provide opportunities to learn and develop psychological skills that would optimise and enhance netball performance.
Table 4 outlines the key activities that were chosen to meet these objectives.

Table 4: Outlines the key activities that were conducted during the intervention.

<table>
<thead>
<tr>
<th>Pre-intervention</th>
<th>Intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divided into food and hike groups</td>
<td>Friday: Introduction to psychological skills using: Climbing Abseiling Giant swing</td>
<td>Saturday: Team swim Bush-walking Group campout Fire session</td>
</tr>
</tbody>
</table>

**Pre-Intervention**

After the team had been together for two-weeks, it was announced that they would be attending a weekend residential camp. Players made arrangements to gain leave from employment and other commitments. An information package was distributed to all players to help them prepare for the weekend (See appendix 2). It gave a general overview of the weekend, provided clothing and equipment lists, as well as a suggested food menu. During this early stage, it was considered important to get the players interacting and communicating outside of netball. In order to achieve this, players were purposefully appointed to food and dormitory groups of four. The coaches made these selections with the intent of breaking up cliques, and mixing new players with old. Players then had to contact each other outside of netball to plan and prepare food for the entire weekend camp, which was to culminate in a “bush banquet” on the Saturday night camp out.

Two weeks prior to arrival at the intervention the first quantitative measure of team cohesion was administered. (This will be discussed in more detail in the quantitative methods section that follows).

**Intervention Weekend**

The weekend training intervention was guided by theoretical constructs gleaned from both sport psychology and experiential education. Weinberg & Gould’s (1995) three-stage psychological skills teaching model incorporating an: educational phase; acquisition phase; and practice phase formed the basis for how psychological skills were presented to athletes. While Murphy & Tammen’s (1998) recommendations for developing skills of self-awareness; self-monitoring; and self-regulation, underpinned the psychological skills practice during the adventure-based training activities. Guiding the overall structure and sequencing of the
weekend was Bisson's (1997) work, which found that sequencing could impact on the team cohesion of participants (These works were discussed in the previous literature review).

**Friday Evening:** Participants arrived at the outdoor centre at 6.00pm. They were greeted in the car park and welcomed by a facilitator. The coaching staff then directed the athletes to organise themselves in their “food/accommodation” groups. They were given a briefing about what had to be done in the subsequent 30 minutes, which included: unpacking, making their beds, and getting dressed in suitable clothing for physical activity. They were asked to meet back outside at 6.30pm. One of the goals of the weekend was to get the team used to punctuality and personal organisation, a skill that would be required during the week at the national championships. A short debrief was carried out at 6.40pm, to evaluate how this task was completed. Players were asked to complete a “finger shoot” to rate how they did as a team in following the earlier instructions. A finger shoot required players to evaluate their performance on a scale from one to five, one indicating a poor score, five meaning excellent. Like in the game “papers, scissors, rock”, players close their fist, then on the count of three, rate the teams effort on a scale of one to five, by holding up one to five fingers. Results of the finger shoot were discussed. After this discussion, the time-two team cohesion questionnaires were administered to the group.

Once the questionnaires were completed, players walked a kilometre on a bush trail to the multi-purpose hall. A formal welcome took place, before a short talk was given about the goals of the weekend. From this presentation, the theme of “A journey toward the national championships” emerged. The analogy was made, that the adventure-based training weekend was the foundation from which the team would build a unity that would lead to a personal best team effort at the nationals. If everyone were at their best, working as a team, the winning would take care of itself.

After the introduction, initial activities took place, which were designed to have some fun, get the players relaxed into the new setting, and to get to know the facilitators. These activities are what Bisson (1998) called “Group formation activities”.

**Group Formation Activities**

“Toss a name game” (Rohnke, 1984, p17), is an activity that enables participants to get to know each others names while having fun. Objects like balls, stuffed toys, plastic chickens, are passed in an established sequence around a circle to everyone on the team. To pass an
object, you first have to thank the person you received the object from, and call the name of
the person who is to receive it next. It is quite simplistic at this early stage. Once the basics
are understood, the facilitator introduces more and more objects into the circle, which
increases the challenge. To conclude the activity a challenge was put to the team:

Netballers are known to be good with their hands, with the ability to pass a ball
around the court very quickly. To win a national championship, a team has to be
quick with their mind as well as their hands. The challenge you have, is to see
how long it will take to pass a ball through the hands of everyone standing here
in the circle.

A five-minute discussion and brainstorming session was allowed, before the team attempted
a “new world record”. There are many solutions to this task, but really, the outcome was not
important. The main goal was to get the group communicating and thinking about team
solutions.

The next two activities were “Categories” (Rohnke, 1995, p.85), and “Have you ever”
(Rohnke, 1995, p.244). These are simple games, which allow participants to learn something
new about each other. “Categories” requires players to group themselves around questions
asked by the facilitator (See Appendix 3). For example:

- What colour eyes do you have
- Line up in order of age
- Line up in order of height
- Group together according to what colour underwear you have on, and
- If you get nervous before an important game go over this side, if you stay cool under
  pressure, stay on this side

Players get to talk, laugh, and explore new and novel things about one another.

“Have you ever” (See Appendix 3) requires the group to form a circle. Each person is given a
small rubber ring, which is put on the ground where the player is standing; a foot must have
contact with this ring. One person (the facilitator to begin with), stays in the middle of the
circle (there is one more person than there are rings to stand on). The facilitator then asks a
question; “Have you ever won a sporting competition? Have you ever been on a blind
date?” .... If anyone answers yes to the question, they must leave their ring, and end up at a
different one before someone else beats them to it. The person that is left in the middle then
asks the next question. The facilitator pauses the game and probes for more information when an interesting or unusual “Have you ever” is responded to. The idea is for team members to find out more about one another. With the players warmed up, and the atmosphere more relaxed, the next group of activities were designed to meet what Bisson (1998) called “Group Challenge” activities.

**Group Challenge Activities**

There were two, team challenge activities conducted, the first called, “Two in a row” (Rohnke, 1984, p.156). The challenge was for the whole team to skip under a large skipping rope for at least two revolutions of the rope. Once this was completed, the team was asked to set a goal for the maximum number of skips they could achieve. Time was given for the athletes to brainstorm and strategise before their attempt was made. Issues of communication, teamwork, leadership, goal-setting and strategising were all important in solving the challenge successfully.

The second team challenge activities were “Balloon Trolleys” (Rohnke, 1995, p.149) and “Fire in the hole” (Rohnke, 1984, p.51). Balloon Trolley’s is a simple activity, but has powerful metaphors for sporting teams. Each participant was given a balloon and asked to inflate, and tie it off. They were then shown an obstacle course approximately fifty metres long, which the team had to negotiate. Players were then lined up in a straight line at the start and had to place their balloon, between themselves, and the person in front of them (An X represents a person, O represents a balloon: XOXOXOXOXO). No hands were allowed to touch the balloons once the group started. A “frontloading the experience” introduction (Priest and Gass, 1992) was conducted prior to the group beginning: Players were asked questions that keyed their focus into factors that are important for team performance. For example:

- What have we learnt from previous activities this evening that will help us in this activity?
- What would success in this activity have to do with a successful netball team?
- Would anyone like to offer suggestions as to what you think the essential ingredients for team success would be in this activity?
- From your knowledge of what good teamwork is, what kind of behaviours would you expect this team to be using, if it were to be successful?
- Could anyone identify any behaviour that may be a barrier to us being successful at this activity?
With the answers to these questions at the “front” of the groups consciousness, they were then allowed to commence the challenge. Several attempts were allowed while athletes fine tuned their strategy. When the group was happy that they had done their best they were called together and asked to sit in a debrief circle facing each other. Here the events that had unfolded so far that evening were talked about in more detail. The group was asked to think about how they operated as a team up to that point, and to rate their effort on a score of one to five using a finger shoot (as described previously). [Several minutes quiet thinking time was given]. The group was then asked to share their score by holding up the selected number of fingers. The facilitator then began a series of “solution focused” questions (Priest & Gass, 1997b), directed firstly at those who scored the team poorly. Examples follow:

- Deb (fictitious names), you only scored the group a two out of five. If we were to do this activity again, what would need to happen to make your score a five out of five?
- Jane, you scored the team a four out of five; what was it that you liked about the way the team performed?

This line of questioning keeps the group thinking about what they need to do in order to be more functional as a team, rather than asking questions that have the group focus on what they did poorly. A team discussion then took place where ideas were shared as to how the learning from these activities could be implemented into the netball team, and its goal of winning the national championships.

To lighten the atmosphere at the conclusion of the debrief, participants were asked to choose a partner, and to take their balloons to an area that had a little space around them. They were then introduced to the fun activity called “fire in the hole”. The only purpose of this activity was to have many laughs. A balloon was put between the pair of teammates; they then give each other a big hug, squeezing as tight at they could. As they squeezed, they yelled, “fire in the hole”. The balloon eventually breaks with a loud bang, but often with many fun moments of trying to keep the balloon between them 😂. The remainder of the evening centred on activities that would prepare the team both technically and psychologically for the challenges that lay ahead during the remainder of the weekend (and netball season), these are what Bisson (1998) called “Group Support” activities.

**Group Support Activities**

A selection of activities were chosen for this final session with three purposes in mind:
1. To provide the athletes with technical skills, which they would need during their wilderness adventure component of the intervention during the upcoming Saturday and Sunday. These included: how to rock climb; how to abseil (rappel); how to belay; and how to climb a caving ladder, which was incorporated into the high ropes element called the “giant swing”.

2. To introduce psychological skills to athletes to be used during adventure activities, netball training and competition, and life generally.

3. The activities chosen were designed to elicit “real” stress and “real” emotion so that athletes had a “concrete” experience with which to trial their new skills.

Several key psychological skills were chosen and introduced to the athletes, using Weinberg and Gould’s (1995) model for teaching psychological skills as a framework for their implementation. Instruction focused mainly on the “educational and acquisition” phases which meant that these early sessions were introductory in nature. While the athletes did get to practice these new skills on the Friday evening, they needed to utilise the remainder of the adventure weekend, and practice sessions back at training, utilising the resources provided to athletes and coaches (See appendix 7), to fully automate and integrate the learning into their competitive mental skills repertoire.

The researcher acknowledges that the weekend adventure intervention’s attempt to introduce and teach psychological skills fell short of what the literature would recommend as being sufficient time to develop psychological skills; this weekend however, was only one weekend in an integrated intervention lasting over twelve weeks. Winter & Martin (1993) advised that a mental skills program should be practiced at least three-times per week over a five to ten week period. The appendix 7 workbook and related exercises were an attempt to meet this recommendation.

CLIMBING

The climbing wall was eight to ten metres high, by twenty metres wide, with a variety of profiles to challenge climbers ranging from slabs, vertical walls, to slightly and severely overhanging faces. Each climb was protected by a top rope belay system, and participants all wore safety harnesses and helmets. Athletes were divided into groups of three, with one designated the climber, while the remaining two formed the belay team. Instruction was given on safe belaying and climbing technique.
A briefing was then given to the group, asking them to simply get on the climbing wall and give it a go. While attempting the climb, they were tasked to monitor their cognitive levels of anxiety, that is; what kind of thoughts were they thinking before, during, and after their attempt? In addition, they were asked to monitor somatic levels of anxiety including: how their physical reactions, breathing, muscle tension, sweating hands, responded to the climb. The philosophy behind this first practice was based on Murphy & Tammen’s (1998) model for enhancing psychological skills, where the important concepts of “self-awareness” and “self-monitoring” of anxiety levels were being introduced. If athletes were going to use psychological skills, they needed to be able recognise when they would be required. After everyone had their first attempt, a debrief of the athletes’ initial experience was conducted.

The debrief took the form of a sharing circle using Priest & Gass, (1992) third generation “debriefing the experience” model. The questioning began with the aim of getting players to introspectively examine, not only the outcome of their performance, but their cognitive and somatic responses during their attempt. Questioning took the following form:

- As we go around the circle, I want you to describe in one word how you think you performed while you were climbing.

- Forgetting about your actual performance for a moment, I want to check in with what the real task was during this activity, that is; what were you thinking and feeling during your performance?

- What kind of thought patterns were going through your head; standing at the bottom looking up before you started; once you were up on the wall climbing; once you got back down.

- I want you to close your eyes for a moment and see yourself back at the climbing wall. Did you notice a change in your breathing, muscle tension, perspiring hands, or anything else unusual?

- For those of you that experienced negative thoughts or feelings, how do you think this affected your performance on the climbing wall?
• Do any of you experience similar reactions before an important game or competition back at netball? How do you think this affects your netball performance?

• Do you think that going into an important netball competition feeling and thinking like this, is good for your own, or the teams performance?

At the conclusion of the debrief, a psychological skills “education” session was conducted with the goal being twofold.

1. To introduce new psychological skills to the athletes in a context that would allow them to “experience” what they were learning.

2. The introduction to these skills would have “metaphoric” links to netball, as well as relevance to climbing the wall. The concepts covered were: goal setting, imagery; concentration/self-talk; and anxiety control.

The presentation of these skills will be described as they were introduced to the athletes during this part of the intervention. Indented text is the monologue given to the athletes during the intervention by the facilitator. This was done so that the reader may have a full account of what the athletes experienced. This approach is supported by Dale (1996, p.317) who states, “A study using the phenomenological approach lacks validity if it lacks a first-person description of the experiences of the participant”.

Goal Setting: An introduction to goal setting began with a “framing of the experience” briefing, followed by goal setting instruction.

As you look at the climbing wall, I want you to think of the bottom of the wall as the beginning of your journey to the national championships. If you look up to the top of the climbing wall, you will notice I have taped a poster that says, “to win the nationals”; this represents Easter and the grand final. As you all just experienced a while ago during your practice attempts on the climbing wall, getting to the top is not easy, it does not just happen. Likewise, to win a national championship in netball is not easy. You have to plan and strategise to get there. Who can tell me what we could use to guide and motivate us, as we head out on
this journey? [pause, wait for answer; goal setting eventually came out as an option.]

Research has shown (Locke & Latham, 1985) that if athletes set goals and implement strategies to achieve them, then they will definitely improve their performance. Setting the right kind of goals, however, is important. The poster up the top of the climbing wall, “to win the nationals”, is what is known as an “outcome” goal. It is a motherhood statement, which motivates and challenges us to get up each morning to exercise, and to go to training during the week. Interestingly, it has been shown that athletes who only have outcome goals that focus on winning, do not usually perform to their potential (Orlick, 1986).

However, when it actually comes to performing our best at the nationals, we need to set what is known as “performance or process” goals. These can be used to guide our overall preparation for nationals through daily or weekly goals to improve technical, fitness, or psychological weaknesses. Goals are also instrumental in guiding our focus toward strategies that are within our own control. So, if getting to the top of the climbing wall is our “outcome” goal; let's brainstorm for a moment some performance goals which could help us get there. [Athletes’ responses].

- We could break the climb up into sections; and only deal with one piece at a time.
- We could set our sites on reaching one of the bigger holds where we could have a rest before moving on.
- We could set goals that guide our concentration.
- We could set goals that guide our performance in the face of panic or lost control.

As you can see there are infinite possibilities. However, I am sure you now begin to feel that the task of climbing to the top, now seems more manageable when we have something guiding us to our destination. Similarly, to get to the top in netball will require the same planning and goal setting. During the weekend, we will spend time talking about goals that can guide us in netball. This will lay the
foundation for some sessions that your coach will run with you when you return
to Sydney next week.

Another mental strategy that can assist us in getting to the top of the climbing
wall, is a skill known as imagery.

**Imagery:** Imagery was also introduced to students using the climbing wall as a metaphoric
medium. The following describes the introduction:

Imagery is essentially viewing your performance in your mind, before you
actually perform. The advantage of this, is that you can live your performance
repeatedly, honing new techniques, skills or strategies before your competition
day arrives. All of you have most likely used imagery before whilst rehearsing the
steps for a dance, aerobics class, or even preparing for the drill in the dentist.
[You have a mental picture in your mind of how the experience will go]. In
preparing for a dance, you can see yourself successfully waltzing around the floor
in time with the music. When preparing for the dentist, you probably see
yourself cringing when the drill starts up, and thinking of the pain if the dentist
hits a nerve. Our visualisation can focus on positive images dealing with success,
as in the dance example, or negative images as in the dentist example. We need
to ensure our imagery is positively focused.

There are some great studies, which have shown that imagery can enhance
performance. Who are the goal shooters here? [hands go up] I think you will like
this study. Have you ever been nearing the end of a game, the scores are really
close, the opposing crowd is noisy, you are feeling lots of pressure, and your
shooting seems to go off. [heads nod] One study that demonstrated the
effectiveness of imagery was conducted on a group of basketball shooters to
help this problem (Lane, 1980). Several of the players were missing free throws
when they were at away games, because the home crowd was loud and waving
their arms as they shot for goal. These players used imagery to help control their
anxiety and help focus their concentration during such pressure situations.
Results of the study showed that their shooting improved by 15%, which is a
significant improvement, and could be the difference between winning and
losing a close game.
For me, imagery is like having a movie screen on the back of your eyelids. What I usually do is sit down, close my eyes, take a few big breaths and feel my body relax. Then I play the movie on the back of my eyelids. There are two ways you can see the movie of yourself playing. The first is from an internal perspective; this is like having a video camera attached to the top of your head and you are seeing things from your vantage points. The second is from an external perspective, as if your Dad was videoing you from the grandstand. There is a belief that imagery from the internal perspective also stimulates the nervous system to actually imprint the movement patterns of the skill you are trying to master. Most of your imagery should be done from this perspective, but there are also times when you need to get a long view of the play, where external visualization will be more appropriate.

As well as just seeing the image, you should try to incorporate the rest of your senses in the imagery session to make the movie as “vivid” as possible. For example:

- You could imagine the sound of screaming opposition fans, and then seeing the image of yourself concentrating on being relaxed and in control while shooting. You can feel yourself breathe and center, and your muscles relax. Then feel the ball leaving your hands as the ball takes the perfect trajectory toward the goal. Finally, hear the sound of the ball swooshing through the net as you score a goal.

- While practicing a new play at training, where you have been using incorrect footwork and timing, you could visualise yourself executing the skill correctly, by focusing on the feelings of the play; the balance, muscle tension, and rhythm as you prepare to pass the ball.

- Instead of getting nervous before a big game, you can begin to visualise yourself being in control, using positive self talk, deep breathing, and staying centred.

One more important thing you need to ensure, is that you practice controlling your imagery so that you are always seeing the positive image. If you find yourself focusing on negative images, use a thought stopping technique to “edit”
your image, and then get back on track. For example, I just say to myself “stop! That is not going to happen; go, your not wanted in my thoughts”. The possibilities for using imagery are endless, however, I try to pick out areas that I am weak in, and then begin visualising improvement and future success in these areas. If we can turn our weaknesses into strengths, then we are on our way to improvement.

Okay, lets go back to trying to climb this wall. How could we use imagery to help us prepare? [Thinking time given]. Some of the responses included:

- You could stand back looking at the climbing holds to see how your body should configure to the position of the holds. Then you will know what to do before you actually get up there.

- You could imagine yourself not giving up so easily, by getting more determined when you get to the steep overhanging section.

- You could sit down and imagine yourself blocking out your worry and fear of heights, by re-focusing your concentration on things within your control; like being in balance, keeping your breathing in control, and relaxing when you are under pressure.

Now, lets try a little imagery exercise. Lets all sit relaxed, close your eyes, take a few big breaths, check your muscle tension and relax any tight muscles. Based on your first attempt, I want you to choose an area that could be improved through positive imagery [A few minutes given for this]. Reflect back on your last climbing effort and try to bring that image up on the back of your eyelids. Now, lets change it, so there is a more positive look to your movie. Remember the principles we want to use. See yourself from the internal perspective, ensure the image is positive, and use all your senses. What can you see [pause]; hear [pause]; feel [pause]; smell [pause]; taste [pause].

One thing that is for certain, imagery takes practice to master. Like any other skill, you will have to practice to be proficient; I know you will be given the opportunity to do this in the coming weeks at training. Okay, lets move on to a skill that can really help you maintain concentration while you are under pressure.
Concentration: One of the identified weaknesses in the needs assessment, was that the coach perceived a lack of mental skills among the players to handle the pressures of competition. This session was designed to improve this area.

Earlier, I watched you during your practice climbs. One of you walked over to the base of the climb, looked up, and then turned to your belay team and said, "This looks too hard". I heard someone else say, "There is no way I can do this". In addition, some of you, even though you did not verbalise it, had body language that had a defeated look about it. I suspect that what you were experiencing, was a battle between negative and positive self-talk, a battle that affects your concentration and takes your focus off things of relevance. I think of this battle as two little "mini me's" sitting on either shoulder, you know, from the movie Austin Powers ("Mini me" is a miniature altered ego version of the main character in the movie). One of the "Mini me's" sits on your left shoulder always the pessimist trying to talk you out of giving your best; he/she is always sewing seeds of doubt. The other is the optimist, giving you words of encouragement when the going gets tough. Do any of you experience this? [Show of hands] This constant interplay between your positive and negative thoughts is something that is continually occurring. If the little pessimist dominates your thought patterns, then your performance can be severely affected. Have you heard the old adage, "you are what you think?" Well, I believe many of you experienced this during your first attempts on the climbing wall. Your negative "mini me" was dominating. If you think you are beaten, then this is what will happen. When the going got tough, you gave up.

What we have to learn to do, is switch off this negative voice, and turn up the volume on the positive voice. There are several techniques to do this, the first is known as "thought stopping". When you find yourself having negative thoughts, the goal is to stop them before they start interfering with your performance. You need to develop a little cue that you use, that signals the thought to stop. I either loudly, or in my head, use the word "STOP"; and then imagine my positive "mini me" reaching over and belting my "negative "mini me" over the head, telling him to "shut up". Another way is to click your fingers or hit their hand on their leg as their cue. You will have to practice until you find something that works for you.
Once we have stopped the negative thought, we need to replace it with positive thoughts or words. For example: On the climbing wall one of you got up to the overhang with fine style, and I believe you had it in you to finish the climb off. However, you lost concentration; you started to look around, started to think about falling, and then yelled out “I'm too tired to go on”. I wonder what would have happened if you're self-talk went something like this. “Relax (take a big breath), focus on my footwork, look, one foot there on that hold, the other over there, just watch the climbing holds, come on you can do it, relax, breathe”. Developing cue words like this, refocuses your concentration on the important things within your control. “Relax”, signals you to ease up on your grip, breathing helps you to regain your composure. “Focus on my footwork just watch your climbing holds”, signals you to shift your attention from worrying about falling, to getting in balance and using good technique. “Come on you can do it” activates your energy levels to lift and push on past what you perceive is possible. Who can think of some examples of positive cue words that you might use in a netball situation. Responses included:

- Under pressure when goal shooting, just take a deep breath and say “relax” before you shoot.
- If I drop a pass, instead of worrying about it, say; “Leave it, it's okay”.
- When the game is close toward the end, have a word like “lift” or “effort” that someone hells out. This is a signal to increase concentration and physical effort.

So, for the remainder of the weekend, and right through until the nationals, I want you to monitor your self-talk. I know later this weekend there will be times when your self-talk will be challenged further, so lets keep these strategies in your thoughts ready to use.

**Anxiety Control:** According to the coach, being able to remain relaxed and focused in the heat of competition has been critical in previous years competition. She wanted to ensure her players had the skills to deal with this pressure. Strategies to reduce anxiety were outlined.

I want you to close your eyes and think back to an important trial match or grand final that you have played in, or perhaps sitting for an important exam at
school, or even waiting to have your turn on the climbing wall tonight. Take a
minute to think about how nervous or anxious you were in the time leading up
to that important event [pause to think]. Can any of you recall how you
responded? [Answers given]. Some of you said, “I felt very uptight”, “I couldn’t
sleep the night before” and “my underarms and palms were sweating out of
control”. Research has shown excess anxiety levels can produce inappropriate
muscle tension which can really hamper your performance (Weinberg & Gould,
1995). When you are tense your movements lose their coordination, you can feel
awkward and not your normal self. When it has happened to me in the past, I
feel as if I have lost total control of myself, it’s as if I am a different person.
Controlling your anxiety so that you are at your optimal performance or arousal
level is something that takes practice. It is something that you will need to do
this weekend, as well as when you are experiencing the pressures of big
competition. Let’s now look at some ways we can control this anxiety level.

Sometimes anxiety is bought on through negative thoughts and self-doubt. We
have already looked at strategies to control this negative thinking. At other times,
the tension is held in our muscles. Who has watched a tight tennis match and the
server hits a fault? Before the next serve they pause, close their eyes, and you see
them take a deep breath. This is what is called centring. It is based on the martial
arts, and it revolves around being in control of your mind and body (Cram,
1987).

To be centred, refers to a state where one is relaxed, balanced, and in control of
oneself physically and mentally. It involves a combination of breath control and self-awareness of your bodies “center”. Okay lets try a little exercise. Stand up
and form a circle. I want you to stand with feet, shoulder width apart, close your
eyes and put your hands just below your belly button. This point is
approximately our “center” of gravity. Now, lets take a big breath of air in [Time
given to breath]. While I was observing, I noticed many of you drawing your
shoulders up to inhale the air. What I want you to do is what is known as
diaphragm breathing. Keeping your shoulders still, imagine you have a hole in
your belly button, and that you are going to breathe like a dolphin, sucking the
air in through this belly button hole. Another way of thinking about doing this is
dragging your lungs down toward your belly button through muscle control in
your abdomen. This kind of breathing results in a much deeper and more relaxed inhalation. Let's now try five full deep breaths.

Let's close your eyes again. While you are deep breathing this time, I want you to focus your concentration on your centre, that area just below your belly button. "Slowly, Breathe in..., breathe out.....; breathe in..., breathe out........". As you breath out this time, let all the tension you are holding in your body flow out through your centre.

Okay, let's try a little exercise. Choose a partner around the same size as you. Stand facing one another with your feet shoulder width apart. I want one of you to just close your eyes and stand there. I want the other person to put the palm of your hand up on your partner's forehead. Now gradually push by applying gentle increasing pressure. The person being pushed; I want you to focus your concentration on that person's hand as they push [Participants lose their balance and have to step back to prevent falling].

Now, let's try a slight variation. We are going to do exactly the same thing again, however, this time I want the person that is being pushed to complete several deep diaphragm breaths prior to beginning, and instead of focusing on the hand held on your head, I want you to really keep your concentration on your centre. In other words, I want you to centre yourself. When you feel composed and centred give your partner a little nod, and then apply the same slight pushing pressure again. Did you notice any difference between the two methods? [A discussion took place]. [Most participants find that the centred state provides a solid platform and requires much more effort to be pushed off balance]. Players then swap, and their partner has a turn.

Centring can be used to relax and release pressure in order to feel in control. I also often use one of my cue words that we talked about earlier, in conjunction with centring. Like "relax", as I finish my last breath. You could use centring before you start your climb so that you are totally focused on you, instead of the height, or other things out of your control. Likewise, if you find yourself beginning to panic or worry once you are up higher, try centring yourself, and being in control. There are obvious applications of centring to netball that we have already talked about tonight, however, you will want to practice regularly in
training in order for it to be most effective. Later tonight, and throughout the weekend, you are going to encounter situations that will require you to use centring in order to successfully complete the task. It is then that you will realise how powerful it can be in helping you control your emotional levels.

Just to wrap this session up, I want to finish with a note about breathing and breath control. When we are anxious and worried, some people begin to hyperventilate, while others actually hold their breath. I want you to monitor your breath control as you rotate through the activities tonight and later on this weekend. If you find yourself doing this, take time to center yourself before moving on with the task you are attempting.

Well, that is enough theory, let's get back to the climbing wall. We have all had one go at climbing, now we are armed with some new mental skills. The goal for the remainder of the evening is to practice these skills on the wall, or later as we abseil, or prepare for the giant swing.

The team all had another climb, while the facilitators assisted in the application of their mental skills. Prior to climbing, players were introduced to a routine which incorporated the following:

1. They were encouraged to step back from the climbing wall, and visualise their climbing route. With this they were asked to set small goals that would guide their progress up the climb. They then closed their eyes and imagined themselves concentrating on the basics, and remaining relaxed and in control.

2. They then went over to the start of the climb, and centred themselves before checking in with their positive and negative self-thoughts. Any adjustments needed were made using their cue words. They then started climbing.

At the conclusion of the second climbing session the group was split into two, one group practiced abseiling, while the other took turns climbing a caving ladder to the giant swing.
ABSEILING

At one end of the climbing wall, it is possible to climb up a chimney profile, which finishes up at an abseil (rappelling) platform. The platform is four metres by four metres, and fitted with anchor points to rig safe belayed abseiling systems. The abseil session had two purposes:

1. To introduce safe abseil technique to the athletes, so they were equipped with the skills needed for the abseiling part of the bush-walking trip, which was to occur the following day.

2. To provide an atmosphere of high tension and anxiety, so the application of the newly learnt psychological skills were being practiced in “real” situations, requiring “real” solutions to gain control of one's stress levels.

Prior to ascending to the abseil platform, the group was taught correct abseiling technique. They had several attempts on the ground before heading up to a facilitator who was positioned on the abseil platform. The group had harness, helmet, and clothing checks prior to commencing. The athletes climbed up the chimney, being belayed from ground level. Upon arrival at the abseil platform, the athletes were clipped into a safety line, which prevented any risk of falling. The climbing rope was then lowered for the next person to begin climbing.

The athletes were then clipped onto an abseil rope via a figure eight descender. This was backed up by a top-rope belay system operated by the climbing facilitator. They were then asked to walk backwards out to the edge of the platform, where they stood side-by-side, looking ten metres down to the floor below. It is at this point, just prior to going over the edge, that creates an amazing feeling of “disequilibrium” within the person about to abseil. [Evidence of highly elevated somatic and cognitive anxiety was highly visible]. The facilitator used a combination of Nadler and Luckner’s (1992) “edgework” model for facilitating at the “edge”, and Murphy & Tammen’s (1998) self-awareness principles, to guide the athletes in the application of their new psychological skills.

Athletes were asked to do a body check: What were they thinking? What did they notice about their body at that time? How did they think going into a netball game, with that kind of anxiety would affect their performance? From this information, the athletes were asked what mental skills would be most appropriate to deal with the problem. The facilitator would then
coach them in this skill until they found themselves reducing their anxiety levels and feeling more in control. Once the athletes were feeling in control of themselves, they proceeded down the abseil. This process was repeated for all participants. Those awaiting their turn at the bottom of the abseil were instructed in safe bottom belaying technique for abseiling.

**The Giant Swing**

At the opposite end to the hall, suspended 12 metres from the ground was a 1.5 metre by 1.5 metre platform that could accommodate three people. Attached to this platform was a wire-caving ladder and a top rope belay system. Attached to the next roof beam of the hall (eight metres away) was a twin pair of 11 millimetre (mm) static climbing ropes. These ropes were hauled to the platform via parachute cord. Athletes were then given a verbal orientation to the activity; they were told that they would have to climb the caving ladder to the platform. Upon arrival, they were to sit on the edge of the platform, while the ropes were attached to their harness. When ready, they were to dive off the platform, which would result in them swinging back and forward through the air until they slowed enough for someone to grab their legs and bring them to a stop. A platform would then be wheeled in, which would allow them to unclip from the ropes.

Like the previously described abseil activity, the description of the giant swing created a feeling of anxiety among the athletes. While waiting their turn on the ground, the athletes were asked to imagine they were waiting for the start of an important netball game. They then had to use their new psychological skills, to ensure their thoughts were positive, and their body was in an optimal state, so they could perform at their best when their turn arrived.

After this briefing, a facilitator climbed up to the platform and tied into the anchor system. Athletes then climbed the caving ladder to the platform while being belayed by their teammates (this was to practice ladder climbing which would be required for the caving component of the intervention later on the Sunday). Arriving at the platform, athletes were clipped into the twin 11 mm ropes, by two opposing screw-gate locking karabiners. The exact “edgework” facilitation procedure described in the earlier abseiling scenario was also used on the giant swing in order to help athletes further develop their self-awareness and psychological skills repertoire. [to avoid repetitiveness this procedure will not be explained again]. When the athletes were ready, they leapt off the platform falling toward the ground;
the ropes then snapped tight sending them into a series of G-force pendulums across the hall.

Once all the athletes had completed the round robin of activity, they were asked to assemble by sitting in a debrief circle, so that the learning from the evening could be reflected upon. The lights in the hall were lowered, and players were asked to lay back, close their eyes and relax. They were then led through a short progressive muscle relaxation and breathing exercise in order to demonstrate how one can monitor and reduce feelings of tension (see appendix 4). At the conclusion of this, players were asked to remain quiet and still, but to turn their thoughts to what they had learnt during the evening session. They were asked to reflect on the most significant things they had learnt and how this could be used back in their netball lives after the training weekend. After five minutes, athletes were asked to pair up with one other person and share their learning with their teammate.

To conclude the evening, players were issued with bush-walking equipment in order to prepare for the hike the next morning. Equipment included: backpack, two water bottles, raincoat, harness, helmet, karabiner, and headlamp. They were then given a packing list to guide their packing of the equipment (See appendix 5). From here, headlamps were turned on and we hiked a kilometre back to the cabins. Prior to being dismissed, players had the timetable for the following day outlined for them. The final instructions asked them to be outside their cabins ready for a run and swim at 6.00am.

**Group Achievement Activities**

The following procedural description outlines the activities that took place on the Saturday and Sunday of the intervention. Based on Bisson's (1998) “group achievement” guidelines, these activities were deliberately designed to challenge the team, bringing them together to work as a highly functional, motivated team, who were “performing” to their potential. Several “double binding” (Priest, & Gass, 1994) expedition activities were constructed to lead the team towards this goal. Saturday involved a major bush walking and camping experience, while Sunday's challenges involved a caving expedition.

**Saturday Morning Jog and Swim**

At 6.00am players met outside their cabin complex dressed for a jog and equipped for a swim. Most of the team did not get to bed until mid-night the night before, so players were
tired. This however, was another twist to the self-discipline and mental challenge theme to
the weekend. [Several players were still not ready at 6.10am].

A discussion was again had concerning the importance of punctuality and being there for the
team. Players were asked to evaluate their feelings of enthusiasm using the “finger shoot”
method of rating their feelings [Most team members were below 3 out of 5]. A centring
exercise to increase enthusiasm and arousal levels was conducted.

Spreading out in a circle the team was asked to close their eyes. [pause]. They were then
asked to spend a couple of minutes doing deep diaphragm breathing, while focusing on being
centred. [Breathe in, hold it, breathe out]. Players were then asked to check in with their self-
talk, was it positive or negative; they were encouraged to use cue words to make any
adjustments. After several minutes the facilitator talked to the group about “choosing their
attitude!” Everyday you can wake up and choose to grumble, complain and be negative; or
you can choose to be alive, enthusiastic, and positive, the choice is yours. However, when the
national championships come around, the other team is not going to worry about your state
of mind. If you are down and sluggish, they will get over the top of you and your campaign
will be over. While being late or being negative with your thoughts might seem
inconsequential now, we have to develop a team ethic, that will ensure we are all on a positive
wavelength, when we front up for team activities. [The coach, then talked to the team]. She
asked the players to make a pact to be organised, on time, and positive from now on.

From here, the players were led on a fifteen minute cross country jog through the
surrounding bush land in the morning fog, finishing up at the lake. Players stripped down
into their swimsuits meeting on the pontoon by the waters edge. There was a thick fog
blanketing the Lake and the temperature was quite cool. The lake was murky, with a muddy
squishy bottom, which was unnerving for players that had not swam in an inland lake before.
A double-binded framed briefing was given to the players, it is outlined below.

Well, earlier this morning we talked about choosing our attitude and being
positive toward the team cause. Now we can put this new team edict into
practice. This morning all of us have to swim as a team from here, 50 metres to
the other side of the lake where we will all meet, before swimming back to the
pontoon again. We can wine and complain about the cold water, the muddy
bottom, the fog, or we can get in there as a team and face the challenge together,
like we will have to face the challenges of the national championships. The choice is yours! [With these instructions team members “buddied up” with one other person and swam across the lake.]

Upon completion of the swim, the group jogged back to the cabins where they were given until 9.30am to have breakfast, pack their back-packs for the days hike, and empty their cabins. They were told they would not be returning to the cabins and bags were to be left out so they could be transported to that evenings campsite, ready for their arrival later that day. At 9.30am, a final gear check and pack fitting took place before we headed off to Mt. Carialoo, the site of the days hike.

THE BUSH WALK

Mount Carialoo is a 687metre high mountain in Morton National Park. The description of the walk will be broken down into sections to highlight the different learning outcomes and the way in which they were facilitated. [As the facilitation of an adventure program is a dynamic process, facilitation strategies evolved according to circumstances that arose as the walk unfolded. An attempt will be made to explain why procedural decisions were made, so that the reader will have the full context of the decision making process, rather than try and deduce this from the results section later on].

From the valley bottom at 200 metres above sea level, the first leg of the trip headed steeply up a fire trail on the mountains southeastern flanks. The trail gained 400mts of elevation in the first kilometre, so it would be classed as extremely steep. (See appendix 6 for a topographical map of area). This first leg was used to address an observation that the coaches and facilitators had made of the group since arriving at Kangaroo Valley. It appeared that some of the players were not “walking their talk”. They were saying all the right things about working as a team, but were not mirroring this with their behaviours and actions.

Standing at the bottom of the mountain looking upward toward the summit the following “framing the experience” briefing was given.

Getting to the top of the mountain today will require the same determination and teamwork that it will take to win the national championships at Easter. It will be critical in Canberra in eight weeks time for all of you to work as one. I want you to think of the summit up there as our dream goal of winning the nationals. To get there however, will require hard work, determination, and a
positive attitude. Along the way, we will need to overcome obstacles together as a group, not just one out. The same will be required back in Sydney as you work hard at training to prepare.

Our goal then for this first leg of the walk is to stick together as a team. We are going to be like a pack of riders in a cycling race. Each person is going to have sixty seconds at the front leading, and then they must drop to the back of the group staying in order until it is their turn to lead again. We must not split the group, and we must control the pace so the slowest people in the group are not left behind, this will involve continuously looking out for one another and communicating with each other about how the group is progressing. Does everyone understand the task? [All nod and answer yes] Are there any questions? [No questions]

The group headed up the mountain following the steep climb, it takes approximately 75 minutes to reach the first flat resting spot, which was our initial goal. The group began the process well, however, about half way into the climb, during a series of steep switchbacks, four players left the main group. The coaching staff’s initial hunches were correct, and some players were shown again to be going one out, forgetting about the team. [The coach conferred with the facilitator on the way up the mountain to share her despair, outlining that this was happening at training and in competition all the time, and in her mind was the source of all the team problems] [This dysfunction is good, as it brings the problem into the open for discussion]. One of the co-facilitators was sent after the four “jackrabbits”, they were eventually stopped near our destination. Once the rest of the group caught up we sat down for our first break.

The facilitator and coach jointly held a discussion during the break about whether we had met our goals. Some players said we had not met them, while the four jackrabbits were ambivalent. Players were asked to reflect on how they thought the team had performed thus far during the climb; a more in depth discussion would tackle the issue at the lunchtime break.

After the break, the second leg of the trip involved leaving the four-wheel drive track and climbing a steep loose ridge. The ridge culminated in a small broken cliff line about ten metres high; breaking through this cliff gave access to the summit plateau area. [The climb was a series of steps with no single climbing section above two metres high, the real risk of
falling was minimal, but the atmosphere and exposure made the climb a challenge. In order to climb through the cliff, the group had to spot the person in front of them up any potentially dangerous sections (spotting involves actively keeping your hands in a ready position to help the person in front if they slip). Once we had the team spread out the length of the climb, the group worked to pass packs from the bottom to the top of the cliff (See Figure 13). [The teamwork, support and encouragement were in stark contrast to the first leg of the hike]. Once through the cliff, the group was asked to sit for five minutes to have “a mini time out”. This is where the group spreads out, and sits silently on their own, reflecting on a question put to them by the facilitator. The team was asked to think about the differences between leg one (unsuccessfully trying to walk up the mountain as a team), and leg two (working as a team to get through the cliff), and what these differences meant to a team trying to win the national championships. When having participants reflect on their experiences the facilitator needs to be careful not to “over focus on the spoken words about the experience, the possibility arises that the power of the experience can become diluted. In its worst case this could turn into a sort of “analysis paralysis”...where the processing detracts from the adventure experience” (Gass, 1993, p.223). Having participants reflect on their own was a safeguard against this paralysis occurring; a formal debrief took place later on during the lunch break.

The third leg of the trip involved following a compass bearing approximately two kilometres across an undulating plateau to the summit trig station. The route involved many challenges, including:

- Thick, scratchy, untracked Australian scrub, which resulted in many minor, but somewhat irritating nicks and cuts to the legs
- Scrambling over rocks piles
- Walking through shin deep muddy swamps
- Having to detach leeches from legs
- Being hot, sweaty and filthy dirty because of the charcoal from a recent forest fire

Most of these obstacles could have been avoided, but the toughest most difficult route was chosen to test the new team rule of keeping positive. After fighting through thick scrub and getting their boots soaked in the swap, along with a few thirsty leeches on their ankles, negative comments and complaining began.
The group was stopped and asked to check in with their self-talk at that moment. Who was winning, the positive or negative voice? [A discussion was had focusing on concentration levels at that point. The team had been distracted from their national championship campaign by minor discomforts]. The challenge was to get to the summit as a team, yet the group was distracted from their goals. Players were led through a centring exercise and asked to block out the distraction and re-focus on what really counted. The facilitator attempted to motivate the group by discussing how a team of champions pulls together and gets stronger when faced with adversity. “Were they a team of champions or were they going to let a few minor leeches and scratches bother them”. The group continued on their journey to the summit trig and the highpoint of the mountain. We paused for a team hug and photo prior to heading out to the lunch spot on top of an eighty-metre cliff.

The lunch spot was chosen because it had a safe flat rock platform from which the team could admire the spectacular and inspirational views of the surrounding National Park (See
Figure 14. There however, was a more important reason for stopping at this spot. Miles (1987) documented the power which wilderness had in changing people; it was felt that the atmosphere at this spot might provide a vehicle for the team to open up and communicate about problems that were affecting team morale and performance. The first ten minutes at lunch were spent taking in the views, taking group photos, and being in awe of the great expanse of Morton National Park; the group then came back together to be briefed on the next task.

Players were asked to collect their lunch, and were then positioned safely along the cliff where they could sit quietly on their own. Their tasks were to relax, eat lunch, and during this time reflect on their team and the way it was performing thus far on its "journey to the nationals". This reflection was to be based on what they had seen since they had assembled together several weeks earlier, along with what they had observed since arriving at the intervention. Players were given thirty minutes before they would be called back together as a team. During this time, they would be asked to answer two questions.

1. What strengths does the team possess that if used well, would help your goal of winning the national championships?
2. What weakness does the team possess, that if they are not addressed soon, could derail your goal of winning the national championships?

Players then sat quietly for thirty minutes, enjoying the silence and scenery of the area, before being called back together. Players were asked to join their teammates in a sharing circle where a third generation debrief "debriefing the experience" (Priest & Gass, 1992) took place. The facilitator asked participants to share their answers to the two questions that were posed earlier. In anticipation of possible negative aspects arising during the debrief, ground rules for honest communication, while respecting the rights of others was emphasised (Hunt, 1990). While athletes took turns answering, the facilitator was listening for key issues to arise from the group. When these did come up, deeper probing questions "funneled" (Priest & Naismith, 1992) the dialogue so any festering dysfunction within the group was bought out into the open for the group to discuss; and brainstorm possible solutions to the problem.

After an hour of team discussion, the group prepared for the descent down the mountain. They were asked to put their harnesses and helmets on, and pack their packs. Many of the players at this stage had a feeling that the trip was over; this however, was not the case. The actual descent off the mountain was more difficult than the ascent up, and to get off would require much more teamwork, cooperation, and support. A "framing the experience" (Priest & Gass, 1992) brief accompanied the departure to the abseil site:

I want you to think of getting to the top of the mountain earlier today as making it to the semi-finals at the nationals. It has been hard work, there were difficulties to overcome, but we successfully faced up to these challenges. However, the hard work is not over. If we are going to go all the way and win the nationals, and if we are going to safely get off the mountain today, we are going to have to lift to a new level of intensity and concentration. This will require us to work as one, supporting and encouraging one another when the difficulties become overwhelming. It will also require us to use the new psychological skills that we have learnt, which will help each of us give our best. I feel that after our talk just now there is a fresh start, and new enthusiasm around our goal. Before we head off, look around the circle into the eyes of each of your teammates, get used to that look, it is a look of support and focus for each other, a look that says I will be there for you. Lets head to the finals; lets get off this mountain!
While the lunchtime debrief was being conducted the technical rope work for abseiling, and down climbing off the mountain was set up. The exposure on the northwest corner of Mount Carialoo is dramatic. On either side of the abseil site are eighty metre high cliffs, and in front, the valley drops 400 metres below. The actual abseil was only ten metres high following a steep spur, but the perceived elevation provided a real alpine atmosphere that made the group feel as if they were hundreds of metres off the ground.

Two abseil ropes were set up side by side, with an instructor supervising each person as they were hooked on to the abseil line. An instructor was also positioned at the bottom of the abseil to assist team members when they arrived at the ground; and to direct them further down the mountain away from any potential rock fall. As part of developing trust and support towards each other, a bottom belay system was utilised, under the supervision of an instructor who acted as a back up. A bottom belay requires athletes to hold the abseil rope for the person following them. If the abseiler should slip or let go of the rope, the bottom belayer must pull on the rope to halt their progress, they literally have the responsibility of their teammates life in their hands. Athletes had practiced this in the hall the previous evening and were aware of the safety implications and responsibilities involved.

Prior to commencing the abseil, a briefing took place outlining safety issues and precautions. Athletes were then asked to tune back into their “self-awareness” and begin to monitor their levels of arousal. What were they experiencing as they waited for their turn, and what happened as they stepped out for their abseil. What were they thinking? What sensations were they experiencing? The practicing of skills learnt the previous evening were revisited and emphasised; especially visualisation, self-talk and centring.

The “edgework” model of facilitating was used if athletes were having trouble coping with the height. A facilitator mentored anyone having difficulties, by taking them through the centring and self talk process on a one on one basis. During this personal instruction, the skills being taught were also connected back to netball. For example: The facilitator would ask the athlete to describe what they were thinking and feeling, and how that was affecting their performance on the abseil. They were then asked how being nervous like this before a netball game, would affect their netball performance. Together, they centred and used positive self-talk to refocus the athletes’ concentration, upon which time they would abseil over the edge. With this, players have experienced how to use their new psychological skills to overcome self-doubt, and improve their performance.
Once free of their bottom belay duties each pair of athletes had to work together to descend a hand-line, which guided them through a steep scree (small rock) slope, which had several minor half metre drop offs on-route. Once at the bottom of the rope, athletes sidled along the base of the cliff to one of the facilitation team who talked to the pair about their abseil and how the utilisation of their new psychological skills could be improved. Upon arrival of the whole team, the group then had to sidle under the towering cliffs of Mount Carialoo for an hour, until arriving at the southwest ridge of the mountain. This was difficult walking, which required one to walk across a forty-five degree slope. Going was extremely slow and keeping your balance was difficult. Players were split up into smaller groups for this leg and were encouraged to spot, hold hands, and help each other through the difficult sections. The terrain forced the group to really operate as a team.

The same team approach was needed for the descent down the southwest ridge, which had many hazards and difficulties along its length. This included; steep loose terrain that required one to lower their centre of gravity in steeper sections; small broken cliff lines that could only be negotiated with teammates spotting one another; pockets of stinging nettle; thick scratchy bush; and a fern gully full of leeches. After several more hours of negotiating these obstacles, the team walked off the southwest ridge in the twilight of Saturday evening. They were met by a bus, which transported them back to the evening campsite.

THE SATURDAY NIGHT CAMPOUT

There were several options considered for Saturday evening, one of which could have been a return to the cabins where the team spent the previous night. A decision was made however, in the planning stages of the intervention to maintain the stress and pressure on the athletes by instigating a group camp out on the return from the bush-walk. The bus dropped the group off at a bush campsite along the edge of Lake Yurranga. It was a flat grassy area surrounded by trees, and inhabited by an abundance of wildlife such as, Wombats, Kangaroos and Parrots. The campsite had no modern facilities other than a portable toilet (especially bought in for the group) and a fire pit that had logs around it for seating. When the players walked off the bus they were confronted with a pile of equipment that needed sorting and organising, this included: personal belongings; cooking equipment, fuel, water, food, and overnight camping gear. The team were given instructions by the coaching staff to help speed up organisation, this included:
1. Having a wash. The options included either; a soap free swim in the lake, or a soap
wash and a tin can water rinse off, at least one hundred metres away from the banks
of the river.

2. Getting changed into some clean warm clothing.

3. Setting up the group trestles and cooking area for evening meal.

4. Setting up of "tents".

5. Cooking for the evening "bush banquet".

6. Lighting the campfire.

Each chore was facilitated by the coaching staff of the team, as they would be responsible for
this role when the team was living together during the week long national championships. Despite some initial reservations about having to wash under a tin can, the group rallied
around the coaches leadership, until it was time to set up the tents.

The coach asked several players to go up the road to where the four-wheel drive equipment
vehicle was parked, and to bring back the tents. When they arrived at the vehicle, there was
no sign of any tents. [This was a deliberate oversight to test how the athletes dealt with
unexpected situations when already under stress]. The players came back and reported the
news to their teammates. [Discussions took place about what to do, most wanted to pack up
and hike back to the cabins. They were told another group was staying in the cabins that
night, so this was not an option. The facilitators were asked, would it be possible to drive
back to the camp to find the tents. We agreed, however, the keys that were supposed to be
left on the wheel of the vehicle were not there, so this option was ruled out]. Amongst the
equipment we did have, were two large tarpaulins and some rope. The group all worked
together to hang the tarpaulin between two large trees; a second tarp was used as a ground
sheet. The group then laid out their sleeping mats and sleeping bags for a team sleep out.

Once this obstacle was overcome, the team separated into their cooking groups where the
"bush banquet" meals were prepared on “trangia” camp stoves. [This activity required all
group members to be involved in the cooking process, pitching in for the good of the team].
Once the delicacies were completed, groups placed their meals on the trestles and a
smorgasbord of delights was had by all. The next challenge for the coaching staff was to get
the team to clean up the collective mess. Players were offered the incentive of marshmallows
around the fire if the job was done efficiently.
After dinner when the cleanup was completed, players assembled around the fire area eager to roast the marshmallows; who had the matches to get the fire going? [Sighs from the group]. One of the facilitators told the group that he deliberately forgot the matches, but would light the fire with a rock and carbon steel knife [This fire lighting process gets the group focused around the fire side activity]. Within a matter of minutes, the fire was roaring from a spark that the knife had given off. [Quiet discussion and roasting of marshmallows took place for fifteen minutes]. Once all the rewards for cleaning up had been eaten, the group was bought back on task for a closure activity to conclude the day; the activity is known as the “computer game” (Hunt & Hitchin, 1989, p.35).

The computer game is a novel way of opening an honest dialogue about people in a group. It is appropriate for groups who know each other quite well, or who have shared some challenging tasks together. The facilitator needs to prepare a deck of index cards with a separate statement written on each card. For example, cards could have the following written on them: someone who leads by example; someone who I look up to; someone who I have learnt a lot from; someone who at times distracts us from our goals; someone who talks too much instead of listening. The possibilities are endless, however, the cards should be made to reward both positive behaviours, as well as providing stimulus to discuss negative influences on the group.

Ground rules are again discussed to ensure personal safety and individual rights are safeguarded. After this, the facilitator hands the deck of cards to the team members sitting next to them. They look at the card on top, and read the description to themselves. They then look around the group for someone that fits the description on the card. When this person is identified, the card is given to that person, who reads the card aloud to the group. The giver of the card then explains why they gave the card to that person. After they have had their say, others may come in and comment. The facilitator can then direct questions to the group if further learning could come out of the situation. This process is repeated around the group. (Players may not search through the pack of cards, they can only use the top card, or they pass).

To conclude the evening, a compulsory quiet time was enforced around the fireplace. Athletes were asked to spend five minutes staring into the flames thinking about the learning and the achievements of the day and how this could help them in netball. The group was then led through a breathing and relaxation drill, before being dismissed for bed.
Players were given fifteen minutes to prepare for bed and be in their sleeping bags. [It was now near midnight]. The coach laid down instructions to the team on what the noise and talking curfew consisted of; while one of the facilitators gave instructions on what was to happen at morning wake up, which consisted of the following:

Tomorrow we will begin the day with another team swim in the lake. You may sleep in until a “special alarm clock” wakes you up. When you hear the “clock”, could you please get dressed in your swimmers and meet over at the fireplace.

**SUNDAY MORNING WAKE UP**

As part of the “building mental toughness” theme of the weekend, a “baggpiper” and “drummer” from a local pipes and drum band were commissioned to be the “special alarm clock” for the morning. As the first signs of dawn began to show in the east, the duo sent the haunting sounds of Scotland through the valley. They played for five minutes while the shell-shocked team came to terms with being woken in the dark by the volume and intensity of the alarm clock. The music paused momentarily, while a facilitator gave a motivating morning message.

Good morning NSW netball team, it is time to get up and at them. We have a journey to complete, and no matter how tired or how sore you are, this morning you have to “choose your attitude”. This should be an attitude that is full of enthusiasm and hunger for a national championship. I want you all to be in your bathing suits and by the fire in five minutes, lets do it!

With this, the pipes and drum duo resumed playing until all the team was standing by the fire. From here, the musical duo led the team down to the lake, piping them into the water as they set off for their swim across the lake.

Once out of the water the group was reminded of the mental toughness that it was going to take to win the nationals, and that this morning was just one more step in the journey to prepare the team for the challenge. The team were given free time to eat breakfast and pack their belongings, with the only criteria of being ready for an 8.30am departure for Bungonia Caves, a ninety minute drive from the campsite.
THE CAVING EXPERIENCE
Caving took place at Bungonia National Park, which is unique for its diversity of limestone caves, with over one hundred caves located in a very small area. Two caves were selected for the training purposes of this intervention; Hogan's Hole/Fossil cave (B4-5) and Argyle cave (B31). Hogan's Hole/Fossil cave is a “through” cave, with different entry and exit points. Participants were required to wear safety harnesses, karabiners, helmets, and headlamps in this cave. Argyle cave is a horizontal cave system, with a series of tight passageways that involved “squeezing” through many tight sections on the way to the end of the cave. Once at the end, retracing your route in, is the only option for exiting. No technical equipment other than headlamps and helmets were required.

Caving was chosen for the “finale” of the training intervention because of the new and novel wilderness setting the cave environment provides. When underground, there is an atmosphere, which truly takes participants out of their comfort zones, eliciting high levels of anxiety and disequilibrium. The potential for breaking through into new uncharted areas of success are enhanced with a positive outcome in the cave environment. Gabert (1997) when commenting on caving as adventure-based teaching medium stated that, “caves hold a powerful key to self-discovery, particularly in women and girls when used sensitively in adventure programming....with the help of other women in the group, they may find a hidden strength that longs to surface in the safe, quiet absence of light”.

The objectives for the caving day were:

1. To provide further opportunities to develop teamwork among the group.
2. To provide opportunities for athletes to continue to experiment with their new psychological skills.
3. To have opportunities to plan and goal set with regards to what can be taken away from the adventure intervention and used back in netball.

Hogan's Hole-Fossil Cave:
A safety briefing and gear check was conducted prior to entering the cave. Team-members also “budded” up with one other person so that they could monitor each other's safety. This cave had a variety of challenges to test the teamwork and mental skills of the athletes these included;
• Rock climbing in the dark
• Crawling through dusty body sized holes that were highly claustrophobic
• Belayed traverses above gaping chasms
• Belayed ladder climbs to get around small impassable cliffs

B4-5 cave was chosen as the first cave as it is a much larger cave with only a few tight passageways. It was felt that this would be a good lead up and progression for the Argyle cave system. When the terrain of the cave provided elements of high stress and anxiety, participants were encouraged to use their new psychological skills in the same manner as was described earlier for the Friday night hall activities, and the abseiling during the bush-walking.

**Argyle Cave:**

Argyle cave is what is known as a horizontal cave, meaning that it does not require any technical rope or ladder work to get through the parts of the cave that we were using. Prior to entering the cave the group received the following “Framed” briefing.

Ladies, this is our final activity together this weekend, it has been chosen for a special reason. To successfully get through the cave this afternoon, will require the exact teamwork focus that is going to take to win the national championships. Earlier this weekend we got away with some players working on their own, we also have experienced what can happen when we work together. Later on in this cave, the only way forward will be if you act as a team, and you use your psychological skills to maintain your concentration and control your anxiety. When the pressure is on at the nationals and the games are close, you have to come together and fight together as a team. I want you to pause for a moment, centre yourself, and really think about what it means to be a team. [Time for thinking given].

Upon entering the cave, a large circular passageway was encountered. As they made their way down this passage, a variety of passageways branched off in all directions. Under the leadership of one of the players pairs of players were sent out to explore these passages, searching for a possible lead that would take the team deeper into the cave. Players were given ten minutes to explore, then asked to meet back at a central point to report on what they had discovered.

Reports from the different groups indicated that none of the passageways went any further and they were all a dead end. They all seemed too small to pass through. After some
questioning by the facilitator, groups were asked; how did they know the passageways were too small. It became apparent that they were only speculating and had not actually tested whether they could fit through these passages. With some support, one of the team members volunteered to “squeeze” through a tight passage, that was only eight inches high. To the amazement of everyone, she made it through. With doubt and apprehension the rest of the team followed. To actually fit through the squeeze players had to take their helmets off (See Figure 15). The stress levels and anxiety created by the claustrophobic conditions was rippling through the group. Players were reminded to check that their positive self-talk was dominating, and to remember to breathe and centre if they felt like they were losing control.

Once through the tightest section of the passageway, the cave opened up into a cavern that allowed players to sit close together. A debrief was conducted at this point to draw the players attention to some important lessons (See Figure 16). Questioning focused around the assumptions the team had made in their search for a passage that led down the cave. [No one thought it was actually possible; they all doubted their ability. Yet, by letting go of that fear, and all working together, they had overcome what they perceived as impossible]. The point was made that often in sport, teams lack a belief and confidence in themselves, which leads to performances that are well below what a team is capable of.

From this point players headed deeper into the cave, with several obstacles requiring the group to help and support one another. One of these required one team member to lower their buddy into a vertical hole in the cave floor, holding their feet to ensure they didn’t go rocketing through to those catching them at the other end (See Figure 17).
After this section, the cave opened up into another large cavern that allowed the team to collect. As we moved deeper into the cave carbon dioxide levels increased. [In caving parlance, this is known as “foul air”; while the levels are not dangerous, it does cause the body to increase respiration to compensate for the imbalance]. The team could be heard breathing very heavily, with several becoming quite anxious that they could not control themselves. With help from the facilitator, the players were asked to lie back against the cave wall, focus on centering, and breathing deeply. After several minutes, the groups cognitive and somatic anxiety symptoms had reduced. The opportunity was again taken to discuss how important it was to self-monitor, and self-regulate the pressure they were experiencing. They were sure to encounter similar pressures at the netball national championships, and if left unchecked, could seriously affect individual and ultimately the teams performance. From here, players were asked to backtrack to the same collection chamber we had just come from.

With the team sitting comfortably, the facilitator told the group that they were now going to head out of the cave; everyone appeared to be relieved. It was then explained how this was going to be achieved.
You will recall a short time ago we entered the cave and searched for a passageway that would lead us to our destination. For many of you this was a huge challenge. Well, I have a challenge now, that I believe you are ready for, it is a challenge that at first will seem impossible, but it is one that requires the skill of a champion team; I believe you now have these qualities. Your challenge is to go from the point you are sitting at now, to the daylight outside the cave; however, we must disconnect our head-torches and get out of the cave in complete darkness without using our lights.

At first sheer panic takes over the group; “it was near impossible to get into the cave with lights on, how could we possibly get out without them”, was a common cry. Sensing the groups disbelief, the facilitator led the group through a “frontloading” exercise by asking the group to go over all the skills they had gained this weekend that would help them achieve the task before them. The concept of “Controlling the Controllables” (Jackson & Csikszentmihalyi, 1999) was emphasised. This is where the group focuses on and utilises their strengths, rather than focusing on the things out of their control, like no lights, and the fear of not getting out of the cave. Players were asked to pause and centre themselves; and while doing this they were asked to think about what skills they had developed together that could help them in this situation. In short, the players decided that the only way for the team to get out of the cave was to work together using skills such as: talking, listening, touching, trusting, helping and supporting.

With this, one individual volunteered to lead the group out, she was followed by one of the facilitators; the group then made a chain of bodies, keeping in physical contact with one another. (The facilitator second in line, gave support to the person leading when help was needed to find the way; however none of the group new this at the time). Inch by inch the group made its way out until they reached the very tight squeeze section that had caused problems on the way into the cave. At this point, the facilitator at the front of the group positioned himself so “edgework” assistance could be given to each person as they encountered the constriction of the “squeeze”. Each player was asked to do a self-check of their cognitive and somatic anxiety levels as they passed through the squeeze. They were then assisted in applying the appropriate mental skills to fine-tune their anxiety levels. Several players required active assistance in reducing their muscle tension and respiration so they could fit back through. [When highly anxious, players were hyperventilating and full of tension. With a large volume of air in their lungs, they increase their size, making themselves
too big to fit back through the squeeze. For most of the weekend, the concept of centring, breathing control, and relaxing was a skill that players did not really appreciate. At this point however, using these skills in an appropriate manner is the only way they can get out of the cave; the efficacy of their use is clearly demonstrated. After successfully utilising these skills to gain control and make it through the squeeze, a short discussion was had to demonstrate how these same skills could be used back in that persons netball position. Players received one on one feedback as to how they were using their psychological skills. (Figure 18 shows the “squeeze” section of the cave).

Figure 18: The “Squeeze” section was in total darkness when the group exited the cave. The facilitator was positioned to the left of the purple helmet to provide “edgework” facilitation.

After the squeeze, players continued to help one another toward the cave exit. Upon breaking through into daylight, the smiling but dusty faces of teammates were seen for the first time in several hours. A team hug ensued before the group sat down to evaluate what had just occurred. A debrief that focused on identifying the strengths of the team during the exit scenario was conducted so links could be made with how these skills could be used in netball.

Prior to heading home a formal closure was given to the weekend. Players were given an index card, and a pen. They were asked to go off on their own for ten minutes and to think about the three most important things they had learnt during the weekend, and how this
could help them in netball. They then had to write these down on the index card. When they had completed this task, they had to choose one other player with whom to share their thoughts. They were instructed to hang these cards up in a prominent place to remind them of things they had to focus on leading in to nationals; (these were used for personal reflection by athletes but were not analysed by the researcher). With this, the weekend intervention concluded.

Post-Intervention
After the weekend, the coach and facilitator evaluated the weekend and outlined a series of steps the coaching staff would follow to build on the momentum the adventure-based training weekend had started. This included:

- In the first week training after the intervention the time three GEQ questionnaire was administered.

- The inclusion of a regular psychological skills training session, at the conclusion of netball training practice. To assist with this, a PST workbook was issued to each player. The team was to work through this together in preparation for the nationals. This workbook was based on the work of Orlick (1986) (See appendix 7).

- The coach was to talk to the players in the week after the intervention and help them identify areas of weakness that could be improved if a clear path of goals were set to guide training sessions. A formal goal-setting sheet was given to each player to help facilitate this process.

- The team-debriefing circle and the ensuing successful communication sessions during the intervention were instrumental in breaking down many team barriers. This concept was continued back at training each week, as a forum to discuss team progress, and to air any concerns or problems that the team needed to iron out.

- The coach was to instigate a team meeting where the strong metaphors from the weekend could be turned into a team theme that would motivate players during games and practice.
During scrimmages at training and practice games, the coach was to encourage athletes to continue with the self-monitoring and self-regulation of their somatic and cognitive anxiety state and to implement their new skills in game situations.

Control Group Interviews at the National Championships
In an attempt to understand how the study impacted on the control group, the researcher conducted informal conversational interviews (Clesne & Peshkin, 1992) with control group players and coaches prior to a match at the national championships. The goal of this exercise was to establish how completing four sets of questionnaires had been received by the team during their preparation for the National Championships.

During training the week prior to the nationals (eight weeks post intervention), the time four group-cohesion questionnaire was administered. The following chapter analyses the results of this team cohesion questionnaire.
Chapter 5

QUANTITATIVE RESULTS

QUANTITATIVE ANALYSIS
The quantitative analysis examined all four sub-scales of the GEQ with an attempt to identify the emerging and consistent threads; the sub-scales will form the foci for analysis of results. These sub-scales and abbreviated names are outlined below. (Abbreviations will be used in the presentation of results).

- Individual Attractions to the Group-Task (ATG-T)
- Individual Attractions to the Group-Social (ATG-S)
- Group Integration-Task (GI-T)
- Group Integration-Social (GI-S)

Several analytical stages were used to examine the data; they will be presented in the following order:

1. Descriptive statistics (means and standard deviations).
2. Repeated-measures analysis: Multivariate and univariate testing.
3. Analysis of variance results.
4. Effect size results.

Limitations and Delimitations of analysis
Several important trends were seen across most sub-scales in the results. These trends will be discussed collectively at this point, to avoid repeating the same information when analysing each sub-scale.

As will be seen in the coming pages, the initial repeated measures analysis indicated results that, at a most conservative view, were approaching significance; as was the case with the ATG-T and ATG-S subscales. The GI-T subscale displayed strong significance, while the GI-S showed no significance. This is contrary to observations and interviews that were analysed in the qualitative data, which clearly demonstrated increased team cohesion in all
sub-scales. Because of this triangulation of data, one can more confidently conclude that the interaction within the first three sub-scales warranted further investigation to determine the degree of difference between groups.

Three of the sub-scales ATG-T, ATG-S, and GI-T all demonstrated a negative skew in the data, indicating a major ceiling effect; this being where participants scored very high during their initial data collection times, leaving very little room for recording any change that might result from the intervention. Because of this trend, any significant results in these variables can be considered a strong indication that an effect has occurred (Neill, in press).

The lack of a researcher presence during the four control group data collection points, may have led to validity concerns. When a researcher attends a data collection session, it is possible to “sell” the importance of the repetitious data collection procedure to subjects. Informal conversational interviews at the national championships suggested that control group players lacked motivation and interest in completing questionnaires during the latter two data collection points. Burns (1994, p.364) suggested that, “we can assume more valid responses from individuals who are interested in the topic and/or are informed about it”. While the coach of the control group was trained and provided with information for administering the questionnaires, questions remain as to how effectively this was completed.

When reviewing the quantitative data, the reader should be aware that the researcher was unable to personally check on issues affecting the control groups’ cohesiveness as a team.

Missing Data

Each group began the surveying process with twelve members (n=12). Players that missed data collection events had their data ruled invalid and were not used in the statistical analysis. The final analysis took place with, n=10 for the control group; n=9 for the Under 19 team; and n=11 for the Under 17 team.

The Research Questions

Guiding the above sequence of analysis was the search for answers to the research hypotheses; which are outlined below. These findings were integrated with qualitative results to give meaning to the athletes’ experience.

- Athletes who received an adventure-based training program intervention, would show increased team cohesion when compared to a control group.
**Prediction:** Adventure-based training would provide experiential based teaching methods, which will enhance learning opportunities for athletes to improve their team cohesion. This will be confirmed with increased scores in all four sub-scales of team cohesion measured by the Group Environment Questionnaire (Carron, et al, 1985) (GEQ).

- The duration of the intervention will see longitudinal improvements in all four sub-scales of team cohesion, when compared to a control group.

**Prediction:** The intervention will provide athletes with skills to improve task and social cohesion both at an individual and group level, the follow up training will ensure these gains are maintained, and continue to improve.

**INDIVIDUAL ATTR ACTIONS TO THE GROUP-TASK SUBSCALE RESULTS**

A summary of descriptive statistics for the ATG-T sub-scale appears in Table 5. This sub-scale was calculated with the highest possible score being 36.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>ATGT_1</th>
<th>ATGT_2</th>
<th>ATGT_3</th>
<th>ATGT_4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>Mean</td>
<td>33.30</td>
<td>31.70</td>
<td>31.50</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>4.03</td>
<td>5.17</td>
<td>6.52</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>Mean</td>
<td>32.56</td>
<td>31.89</td>
<td>34.11</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>4.61</td>
<td>3.41</td>
<td>2.93</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>Mean</td>
<td>34.45</td>
<td>33.91</td>
<td>35.18</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.86</td>
<td>2.26</td>
<td>1.40</td>
</tr>
</tbody>
</table>

Using a most conservative interpretation of the of the ATG-T repeated measures data analysis, it can be concluded that the test was approaching significance. Interaction between the independent variables time and groups was measured using both multivariate and univariate analysis: Four multivariate tests were inconclusive, with two tests, Pillai's Trace (p=.085) and Wilks' Lambda (p=.062) just over the .05 significance level, while Hotelling's Trace (p=.047) and Roy's Largest Root (p=.007) indicated results under the .05 level. Univariate testing provided a more positive indication of significance with three tests, Sphericity Assumed (p=.029), Greenhouse-Geisser (p=.036) and Huynh-Feldt (p=.029) all under the .05 level, however, Lower Bound (p=.102) was over the 5% significance level. These results indicated borderline significance, therefore the lines in Figure 19 were treated as
not being parallel, meaning that some kind of interaction had taken place between groups over time, in other words, some kind of change had taken place.

These trends were examined by analysis of variance across each measure of time for group differences (See Figure 11A page, 90). No significant differences were noted across the first three time measures, however, significant group differences were recorded at time 4 \( F(2, 27)=5.238; p=.012 \) (See Table 6).

![Figure 19: Repeated measures analysis showing interaction between groups and time on the ATG-T sub-scale.](image)

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATGT_1</td>
<td>Between Groups</td>
<td>18.451</td>
<td>2</td>
<td>9.225</td>
<td>.710</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>351.049</td>
<td>27</td>
<td>13.002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>369.500</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATGT_2</td>
<td>Between Groups</td>
<td>31.469</td>
<td>2</td>
<td>15.734</td>
<td>1.107</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>383.898</td>
<td>27</td>
<td>14.218</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>415.367</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATGT_3</td>
<td>Between Groups</td>
<td>73.941</td>
<td>2</td>
<td>36.971</td>
<td>2.119</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>471.025</td>
<td>27</td>
<td>17.445</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>544.967</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATGT_4</td>
<td>Between Groups</td>
<td>104.632</td>
<td>2</td>
<td>52.316</td>
<td>5.238</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>269.668</td>
<td>27</td>
<td>9.988</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>374.300</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^a. Denotes a significant result

Table 6: Analysis of Variance for ATG-T sub-scale across 4 time measures
Post hoc Bonferroni analysis found that there was a significant difference between the Control group and the Under 17 team (p=.014) (See Table 7). This evidence would support the hypothesis that teams receiving the adventure-based intervention would increase scores on all the GEQ subscales. This significant result also needs to be considered in light of the control group's steady decline across each of the four time measures. While the Under 19 team result was not statistically significant, one could postulate that the increase in score and divergence from the control group is of practical significance. (Triangulation with qualitative data will be used to explore this further in the discussion).

Table 7: Post Hoc analysis showing multiple comparison of ATG-T sub-scale at time 4.

<table>
<thead>
<tr>
<th>Dependent Variable: ATGT_4</th>
<th>Bonferroni</th>
</tr>
</thead>
<tbody>
<tr>
<td>(J) GROUP</td>
<td>(J) GROUP</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Control Group</td>
<td>U/19 Team</td>
</tr>
<tr>
<td>Control Group</td>
<td>U/17 Team</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>Control Group</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>Control Group</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>U/17 Team</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>U/19 Team</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level.

Effect size analysis was used to measure the longitudinal effects of the intervention (See Figure 11B, page 90). These were calculated for each group to determine the degree of any change between each testing time. Table 8 shows the effect sizes for each group on the ATG-T subscale. Results showed the amount of change that occurred between: time 1-2; time 2-3; and time 3-4. Positive effects for the treatment groups between Time 2-3 support the hypothesis that teams receiving the adventure intervention would increase scores on all the GEQ subscales. The longitudinal hypothesis is supported through the time 3-4 results, which indicated an increase in treatment groups effect sizes 8 weeks post the intervention. (See page 91 for information on interpreting effect size results). Figure 20 represents these trends graphically.
Table 8: Effect Sizes for each group showing change on the ATG-T sub-scale.

<table>
<thead>
<tr>
<th>Group</th>
<th>T1-T2</th>
<th>T2-T3</th>
<th>T3-T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>-.40</td>
<td>-.04</td>
<td>-.06</td>
</tr>
<tr>
<td>U/19 Group</td>
<td>-.14</td>
<td>.65</td>
<td>.15</td>
</tr>
<tr>
<td>U/17 Group</td>
<td>-.29</td>
<td>.56</td>
<td>.13</td>
</tr>
</tbody>
</table>

See Table 1, Page 91 for information on how to interpret effect sizes.

Figure 20 graphically compares the change among groups on the ATG-T sub-scale. Bars moving positively away from zero, indicate a positive effect or change. Bars moving negatively away from zero, indicate a negative effect. Bars remaining close to zero indicate little or no change.

INDIVIDUAL ATTRACTION TO THE GROUP-SOCIAL SUB-SCALE RESULTS

A summary of descriptive statistics for the ATG-S sub-scale appears in Table 9. This sub-scale was calculated with the highest possible score being 45.
Table 9: Means and standard deviations for 4 time measures of ATG-S sub-scale × 3 groups.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>ATG_S1</th>
<th>ATG_S2</th>
<th>ATG_S3</th>
<th>ATG_S4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>Mean</td>
<td>40.90</td>
<td>37.70</td>
<td>37.20</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>4.01</td>
<td>6.63</td>
<td>6.61</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>Mean</td>
<td>40.89</td>
<td>41.67</td>
<td>42.11</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>7.25</td>
<td>3.32</td>
<td>3.66</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>Mean</td>
<td>40.45</td>
<td>39.64</td>
<td>42.18</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>3.24</td>
<td>4.97</td>
<td>3.19</td>
</tr>
</tbody>
</table>

Using a most conservative interpretation of the ATG-S repeated measures data analysis, it can be concluded that the test was also approaching significance (See Figure 21). Interaction between the independent variables time and teams was again measured using both multivariate and univariate analysis: Four multivariate tests were inconclusive, with three tests, Pillai's Trace ($p=.155$), Wilks' Lambda ($p=.150$) and Hotelling's Trace ($p=.147$) over the .05 significance level, while Roy's Largest Root ($p=.040$) indicated results under the .05 level. Univariate testing provided a more positive indication of significance with three tests, Sphericity Assumed ($p=.030$), Greenhouse-Geisser ($p=.039$) and Huynh-Feldt ($p=.030$) all under the .05 level, however, Lower Bound ($p=.103$) was over this 5% significance level. These results indicated borderline significance, therefore the lines in Figure 21 were treated as not being parallel; meaning that some kind of interaction had taken place between groups over time, in other words, some kind of change had taken place.

Figure 21: Repeated measures analysis showing interaction between groups and time on the ATG-S sub-scale.
These diverging trends were examined by analysis of variance across each measure of time for group differences. No significant differences were noted across the first two time measures, however, significant group differences were recorded at time 3 \(F(2, 27)=3.663; p=.039\), and time 4 \(F(2, 27)=5.429; p=.010\) (See Table 10). Post hoc Bonferroni analysis however, did not discern any significant differences at time 3. Further post hoc analysis at time 4 identified significant difference between the Control group and the Under 17 team \(p=.016\), and the Control group and Under 19 team \(p=.041\) (See Table 11). This evidence supports the hypothesis that teams receiving the adventure-based intervention would increase scores on all the GEQ subscales. It also lends support for the effectiveness over time of the intervention with scores remaining strong 8 weeks after the intervention. This significant result also needs to be considered in light of the control groups steady decline across each of the four time measures.

Table 10: Analysis of Variance for ATG_S sub-scale across 4 time measures

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATG_S1</td>
<td>Between Groups</td>
<td>1.351</td>
<td>2</td>
<td>.675</td>
<td>.027</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>670.516</td>
<td>27</td>
<td>24.834</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>671.867</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATG_S2</td>
<td>Between Groups</td>
<td>74.555</td>
<td>2</td>
<td>37.277</td>
<td>1.378</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>730.645</td>
<td>27</td>
<td>27.061</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>805.200</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATG_S3</td>
<td>Between Groups</td>
<td>163.375</td>
<td>2</td>
<td>81.687</td>
<td>3.663</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>602.125</td>
<td>27</td>
<td>22.301</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>765.500</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATG_S4</td>
<td>Between Groups</td>
<td>213.932</td>
<td>2</td>
<td>106.966</td>
<td>5.429</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>531.934</td>
<td>27</td>
<td>19.701</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>745.867</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Not significant in post hoc bonferroni testing  
b. Denotes a significant result

Table 12 shows the effect sizes for each group on the ATG-S sub-scale, while Figure 22 represents these trends graphically. A particularly large negative effect was seen between times 1-2 for the control group. A large positive change occurred for the Under 17 team between times 2-3, this supporting the hypothesis that teams receiving the adventure intervention would increase scores on all the GEQ subscales. The same improvement was not seen in the Under 19 team; this could be a result of the ceiling effect of their data. Their measures on ATG-S averaged 8/9 for each question, this making it difficult for subjects to score any higher in subsequent measuring.
Table 11: Post Hoc analysis showing multiple comparison of ATG-S sub-scale at time 4

Dependent Variable: ATG_S4
Bonferroni

<table>
<thead>
<tr>
<th>GROUP</th>
<th>Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>-5.3889*</td>
<td>2.0394</td>
<td>.041</td>
<td>-10.5944</td>
<td>-.1834</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>-5.8636*</td>
<td>1.9394</td>
<td>.016</td>
<td>-10.8138</td>
<td>-.9135</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>5.3889*</td>
<td>2.0394</td>
<td>.041</td>
<td>.1834</td>
<td>10.5944</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>.4747</td>
<td>1.9950</td>
<td>1.000</td>
<td>-5.5669</td>
<td>4.6174</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>5.8636*</td>
<td>1.9394</td>
<td>.016</td>
<td>.9135</td>
<td>10.8138</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>.4747</td>
<td>1.9950</td>
<td>1.000</td>
<td>-4.6174</td>
<td>5.5669</td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the .05 level.

Table 12: Effect Sizes for each group showing change on the ATG-S sub-scale.

<table>
<thead>
<tr>
<th>Group</th>
<th>T1-T2</th>
<th>T2-T3</th>
<th>T3-T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>-.80</td>
<td>-.08</td>
<td>-.11</td>
</tr>
<tr>
<td>U/19 Group</td>
<td>.11</td>
<td>.13</td>
<td>-.06</td>
</tr>
<tr>
<td>U/17 Group</td>
<td>-.25</td>
<td>.51</td>
<td>.06</td>
</tr>
</tbody>
</table>

See Table 1, Page 91 for information on how to interpret effect sizes.

Figure 22: Comparison of effect size change for three groups across time for ATG-S subscale.
The longitudinal hypothesis is supported through the time 3-4 results of the Under 17 and Under 19 teams. This indicated a steady state in treatment groups effect size scores 8 weeks after the intervention.

GROUP INTEGRATION-TASK SUB-SCALE RESULTS
A summary of descriptive statistics for the GI-T sub-scale appears in Table 13. This sub-scale was calculated with the highest possible score being 45.

Table 13: Means and standard deviations for 4 time measures of GI-T sub-scale × 3 groups.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>GIT_1</th>
<th>GIT_2</th>
<th>GIT_3</th>
<th>GIT_4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>Mean 37.10</td>
<td>36.90</td>
<td>38.40</td>
<td>37.00</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 7.62</td>
<td>7.58</td>
<td>7.78</td>
<td>7.92</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>Mean 38.56</td>
<td>36.78</td>
<td>37.56</td>
<td>41.33</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 4.75</td>
<td>3.99</td>
<td>4.00</td>
<td>2.83</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>Mean 39.36</td>
<td>40.91</td>
<td>43.91</td>
<td>44.09</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 4.37</td>
<td>3.65</td>
<td>1.64</td>
<td>1.30</td>
</tr>
</tbody>
</table>

Analysis of the GI-T data indicated a significant result. Interaction between the independent variables time and teams was again measured using both multivariate and univariate analysis: Multivariate results were highly significant, with all tests, Pillai’s Trace (p=.003), Wilks’ Lambda (p=.002), Hotelling’s Trace (p=.002) and Roy’s Largest Root (p=.001) indicating results under the 5% significance level. Univariate testing also provided a positive indication of significance with the Greenhouse-Geisser test under the .05 level significance level (p=.035). The results for this GI-T subscale can be considered significant, therefore the lines in Figure 23 were treated as not being parallel, meaning that there was clear interaction taking place between groups over time, in other words, some kind of change had taken place.

These diverging trends were examined by analysis of variance across each measure of time for group differences. No significant differences were noted across the first two time measures, however, significant group differences were recorded at time 3 [F(2, 27)=4.760; p=.017], and time 4 [F(2, 27)=5.564; p=.009] (See Table 14). Post hoc Bonferroni analysis at time 3 indicated a significant difference between the Under 19 and Under 17 groups (p=.030) (See Table 15). While, analysis of time 4 revealed a significant divergence between the Control group and the Under 17 team (p=.008) (See Table 16).
Figure 23: Repeated measures analysis showing interaction between groups and time on the GI-T sub-scale.

Table 14: Analysis of Variance for GI-T sub-scale across 4 time measures.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIT_1</td>
<td>Between Groups</td>
<td>27.299</td>
<td>2</td>
<td>13.649</td>
<td>.412</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>893.668</td>
<td>27</td>
<td>33.099</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>920.967</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIT_2</td>
<td>Between Groups</td>
<td>115.302</td>
<td>2</td>
<td>57.651</td>
<td>2.002</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>777.365</td>
<td>27</td>
<td>28.791</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>892.667</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIT_3</td>
<td>Between Groups</td>
<td>246.635</td>
<td>2</td>
<td>123.318</td>
<td>4.760</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>699.531</td>
<td>27</td>
<td>25.909</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>946.167</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIT_4</td>
<td>Between Groups</td>
<td>265.791</td>
<td>2</td>
<td>132.895</td>
<td>5.564</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>644.909</td>
<td>27</td>
<td>23.886</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>910.700</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Denotes a significant result
b. Denotes a significant result
Table 15: Post Hoc analysis showing multiple comparison of GI-T at time 3.

Dependent Variable: GIT_3
Bonferroni

<table>
<thead>
<tr>
<th>(I) GROUP</th>
<th>(J) GROUP</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>U/19 Team</td>
<td>.8444</td>
<td>2.3387</td>
<td>1.000</td>
<td>-5.1250</td>
</tr>
<tr>
<td></td>
<td>U/17 Team</td>
<td>-.5091</td>
<td>2.2240</td>
<td>.059</td>
<td>-11.1858</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>Control Group</td>
<td>-.8444</td>
<td>2.3387</td>
<td>1.000</td>
<td>-6.8139</td>
</tr>
<tr>
<td></td>
<td>U/17 Team</td>
<td>-6.3535*</td>
<td>2.2878</td>
<td>.030</td>
<td>-12.1931</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>Control Group</td>
<td>5.5091</td>
<td>2.2240</td>
<td>.059</td>
<td>-.1676</td>
</tr>
<tr>
<td></td>
<td>U/19 Team</td>
<td>6.3535*</td>
<td>2.2878</td>
<td>.030</td>
<td>11.1858</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level.

Table 16: Post Hoc analysis showing multiple comparison of GI-T at time 4.

Dependent Variable: GIT_4
Bonferroni

<table>
<thead>
<tr>
<th>(I) GROUP</th>
<th>(J) GROUP</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>U/19 Team</td>
<td>-4.3333</td>
<td>2.2456</td>
<td>.193</td>
<td>-10.0650</td>
</tr>
<tr>
<td></td>
<td>U/17 Team</td>
<td>-7.0909*</td>
<td>2.1354</td>
<td>.008</td>
<td>-12.5414</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>Control Group</td>
<td>4.3333</td>
<td>2.2456</td>
<td>.193</td>
<td>-1.3983</td>
</tr>
<tr>
<td></td>
<td>U/17 Team</td>
<td>-2.7576</td>
<td>2.1967</td>
<td>.660</td>
<td>-8.3645</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>Control Group</td>
<td>7.0909*</td>
<td>2.1354</td>
<td>.008</td>
<td>1.6404</td>
</tr>
<tr>
<td></td>
<td>U/19 Team</td>
<td>2.7576</td>
<td>2.1967</td>
<td>.660</td>
<td>-2.8493</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level.

Table 17 shows the effect sizes for each group on the GI-T sub-scale, while Figure 24 represents these trends graphically. A positive change occurred for the Under 17 team between times 2-3. Similar indications of a large and notable effect can be seen for the Under 19 team between times 3-4. Increases of this size indicate that a very large degree of change occurred within these two groups after the intervention. These results support the hypothesis that teams receiving the adventure intervention would increase scores on all the GEQ subscales. Likewise the longitudinal hypothesis is supported, especially for the Under 19 team between times 3-4.

GROUP INTEGRATION-SOCIAL SUB-SCALE RESULTS

A summary of descriptive statistics for the GI-S sub-scale appears in Table 18. This sub-scale was calculated with the highest possible score being 36. Means for all groups in this sub-scale were notably lower than the previous three sub-scales.
Table 17: Effect Sizes for each group showing change on the GI-T sub-scale.

<table>
<thead>
<tr>
<th>Group</th>
<th>T1-T2</th>
<th>T2-T3</th>
<th>T3-T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>-.03</td>
<td>.20</td>
<td>-.18</td>
</tr>
<tr>
<td>U/19 Group</td>
<td>-.37</td>
<td>.19</td>
<td>.94</td>
</tr>
<tr>
<td>U/17 Group</td>
<td>.35</td>
<td>.82</td>
<td>.11</td>
</tr>
</tbody>
</table>

See Table 1, Page 91 for information on how to interpret effect sizes.

Figure 24: Comparison of effect size change for three groups across time for GI-T subscale.

Table 18: Means and standard deviations for 4 time measures of GI-S sub-scale x 3 groups.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>GIS_1</th>
<th>GIS_2</th>
<th>GIS_3</th>
<th>GIS_4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>Mean</td>
<td>26.40</td>
<td>23.10</td>
<td>22.40</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>8.46</td>
<td>10.90</td>
<td>10.21</td>
</tr>
<tr>
<td>U/19 Team</td>
<td>Mean</td>
<td>26.78</td>
<td>25.22</td>
<td>26.00</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>6.94</td>
<td>6.16</td>
<td>6.50</td>
</tr>
<tr>
<td>U/17 Team</td>
<td>Mean</td>
<td>24.18</td>
<td>22.36</td>
<td>21.55</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>5.08</td>
<td>3.98</td>
<td>4.39</td>
</tr>
</tbody>
</table>
Analysis of the GI-S data indicated no significant interaction between the independent variables time and teams (See Figure 25). The four multivariate tests were not significant: Pillai’s Trace ($p=.902$), Wilks’ Lambda ($p=.908$), Hotelling’s Trace ($p=.914$) and Roy’s Largest Root ($p=.609$) were all well outside the .05 significance level. Univariate testing displayed similar non-significant trends with all tests, Sphericity Assumed ($p=.864$), Greenhouse-Geisser ($p=.834$), Huynh-Feldt ($p=.864$) and Lower Bound ($p=.661$) well over the 5% significance level. With these results, one can conclude that the lines in Figure 25 can be considered close to parallel, meaning that no interaction had taken place between groups over time. As this initial examination of the data indicated no significant interaction between groups with respect to the team members social integration, no further statistical analysis of the GI-S data was undertaken; however qualitative analysis will be used to question the validity of this measure. This will be focused on in the discussion section in chapter 7.

![Figure 25: Repeated measures analysis showing interaction between groups and time on the GI-S sub-scale](image)

These results failed to support the hypothesis that teams receiving the adventure intervention would increase scores on the GI-S sub-scale. In addition, there was no interaction across time, therefore the results did not support the hypothesis that longitudinal change would occur across all sub-scales.

Summary
Collectively these quantitative results indicated that the Under 17 and Under 19 teams underwent some kind of group cohesion change during the adventure-based intervention. Also of note is the steady decrease in control group scores across time in the ATG-T and
ATG-S scores. These quantitative results will later be integrated with the qualitative data in the discussion chapter in an attempt to gain an understanding of the athletes' perspective as to the efficacy of the intervention.
QUALITATIVE RESULTS

QUALITATIVE ANALYSIS

The qualitative results were reported using the “outcome” and “process” nature of the research questions as a guiding structure. The research questions were:

From an athletes’ or coaches’ perspective, what were the major outcomes of the adventure-based training program; and how did they impact most upon the team in the following areas: 1) Personally, 2) In developing teamwork and team cohesion, and 3) Transferability to specific netball competition situations?

a. What new skills or knowledge about themselves or other teammates did individuals take away with them from the adventure-based training camp?

b. How did the team or individuals within the team change because of their adventure experience? What new skills were developed that helped the team?

c. Was there any direct evidence that psychological skills learnt during the adventure training camp were directly transferable to netball training or competition?

• From an athletes’ or coaches’ perspective, what processes during the adventure-based training weekend had the most impact on the team? What was it about these situations that made them so beneficial?

a. What elements of the adventure-based training intervention had the most impact on athletes? Why was this significant for these athletes?

b. How did this camp differ (if at all), from previous adventure-based training camps, which the athletes had been on in the past?

c. How did the outdoor bush environment impact on the program? Was it an advantage or a disadvantage traveling away from their usual training venues?
All data from observations, and interviews were typed and organised into computerised data files. Once completed, significant statements or observations that pertained to both outcome and process were coded using “open coding” (Strauss & Corbin, 1990). From this data, meaning units emerged, which were then sorted into categories. These key categories were further divided by “axial coding” (Strauss & Corbin, 1990). Each of the initial categories was looked at in more detail with an attempt to find evidence of variation, and the processes, which led to the event under observation. From this process, a second phase of categorisation resulted in subcategories being developed (See Figure 26, & Figure 28 page 176).

To help organise the results section, each category that was identified as contributing to outcome and process factors will be reported using triangulation techniques. This will be based on data collected from observations, focus group interviews, and individual interviews.

OUTCOME RESULTS

Figure 26 displays factors contributing to the outcomes of the adventure-based training intervention. Three general dimensions of categories were identified; group-cohesion, improved on court performance, and changes outside of netball.

Group-Cohesion

Group-Cohesion has been defined as “a dynamic process, which is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives” (Carron, 1982, p.124). Cohesion is described as a multidimensional construct that includes task and social aspects, each of which reflects both an individual and a group orientation (Carron, et al, 1985). To guide research into group-cohesion, Carron (1982) posited that researchers could focus on the antecedents to group-cohesion, which included: environmental, personal, leadership, and group factors. These definitions and suggested research structure were used to guide the analysis of group-cohesion related data.
### Figure 26: Factors contributing to the outcomes of the adventure-based training intervention

#### Individual Attraction to the Group-Task ATG-T

ATG-T was concerned with an individual group member's perception about her personal involvement with the group task productivity, goals and objectives. Several of the adventure-
based training intervention activities appeared to lead to introspection about individual involvement in the team.

[Observation on Mt Carialoo]: After the initial one out effort of the clique group early in the morning, individuals within the group seemed much more co-operative when working together to abseil and descend the ridge to get off the mountain.

This observation was supported by comments during the focus group interview:

[Under 19 player] When we had to abseil off the cliff, I got to the bottom and realised I had a real responsibility for the team, I had someone else’s life in my hands, and I had to make sure I did my part by looking after the next person.

[The under 19 Manager] I was so scared as I stood there at the top of the cliff, I felt paralysed, I could not move. However, I knew I had to get myself together as I did not want to let the team down.

Several participants found the physical and mental challenge of the activities gave them a real perspective of how important it is to have a team focus, rather than worrying about their own needs.

[Under 17 player] I found walking down that steep slope to get off the mountain really difficult. I was so tired and had had enough. I just kept falling over, but you just had to get up as no one else was going to help me. It was kind of like a netball game, when you make a mistake you have to forget about it, and get on with it.

[Under 19 Coach]: At one point in the cave, I was asked to spot the girls as they came out that vertical hole. At that time all my instincts were telling me to get out of the cave, I felt like I could not breathe and I was losing control, and panicking. However, I focused, and realised that to learn to breathe, centre, relax, and gain control for the better of the team was more important.

An edgework observation captures the facilitation of the coach’s stress:

[An “Edgework” Observation while caving] At one point the Under 19 coach was tasked with assisting the athletes as they slid out of a vertical section of the cave that required spotting. She told the facilitator that she was feeling quite nervous and was finding it difficult to control her breathing. A question was posed to her: “There is a few minutes to go in an important game, and you begin to feel nervous and out of control as you are now, what are you going to do? Your team needs you to be thinking and in control, so you can make the right choices. You have the skills to get yourself back in control; lets see you implementing them”. With this “edgework” intervention the coach closed her eyes, took a few deep breaths and performed her task without another doubt.
Learning to control personal anxiety levels so as not to impact on team performance was seen both during the intervention and netball competition.

[Under 19 player] I felt we were pushed both physically and mentally to the edge of what I could take when caving. I just wanted to get out of that cave and end it, but you couldn’t do a thing, you were stuck. Instead of freaking out you had to stay in control to help those around you so we all could get out. You had to trust yourself to get through it.

[Under 17 player] When the matches were really close, instead of worrying about the pressure all I did was concentrate on my breathing, and being in control.

An individual determination to benefit the team was also seen between games at the nationals.

[Under 19 player] I felt like I wanted to do extra for the team even when I didn’t feel like it. Like having a pool session, or a sleep in between games, so I would be at my best for the next game.

Individual Attraction to the Group-Social ATG-S

ATG-S was concerned with an individual group member’s perception about her personal involvement, acceptance, and social interaction with the group. This manifested itself with improved relationships within the team:

[Under 19 player] Our talk on the mountain made me feel that people would listen to me. I could share my feelings honestly, this helped me trust everyone. Up unto this point I felt like I was not part of the team, I did not connect with many in the team and felt like no one was interested in my feelings or what I had to offer. It was good to see we finally found a way to talk about the problems in the team.

[Under 17 player] I enjoyed the way our personal relationships and trust developed especially during the caving. We really got to know each other better because of this.

[Under 17 player] The stress we underwent during the activities, you know that feeling of we are going to die, opens up new relationships with others like I have never experienced before.

[Under 17 player] Every activity we did through out the weekend required us to be there for each other, we could not have got through it on our own. This helped me on the court. No matter whom I was with when playing, I knew I could trust them.

Coaching staff noted a major shift in coach-player relationships after their intervention weekend.

[Focus group interview with coaching staff] We got in there and got dirty with them. They saw us as being human. They seemed to trust us much more after this, and
respected what we had to offer.

**Group Integration-Task GIT**

GI-T was concerned with an individual group member's perception about the similarity, closeness, and bonding within the group as a whole around its task. Development in this area was evident during several stages of the study including: a) during the adventure-based training weekend, b) during training sessions after the intervention, c) and during competition at the national championships.

**Evidence of GI-T during the adventure-based training weekend**

The first real evidence of a shift in the teams ability to work together on a task was observed when trying to gain the summit plateau to Mt. Carialoo on the bush-walk. The following observation by the researcher outlines this initial development.

[Observation by researcher: Climbing through the cliff on Mt Carialoo] Once at the end of the 4WD track, the climb steepens and ends at a small cliff line. The cliff line is tiered with an ascent being possible through several small two-metre climbs that can be spotted from people below the person climbing. The team was asked to assess the best way to get the group through the cliff safely. Success required all players and coaches to work together to get up the cliff passing packs through the impasse. Players could not take off and leave their teammates like they did on the walk up, or they would be putting each others lives at risk, and jeopardising the success of the team. It was the first evidence of the team working together on a task. Players were asked to reflect on how it felt to operate as a unit working together compared to working as a divided unit.

As we continued the journey across the mountain, the team slipped back into a self-focus where players were worrying about themselves and the discomfort of walking in thick scratchy bush, rather than remaining focused on their set task.

[An "Edgework" Observation by researcher while bush walking] We came together as a team, and talked about the toughness and pain that had to be endured to win a national championship. The team was asked to collectively reflect on what kind of team they wanted to be, and what would a mentally tough team look like and sound like if we were to start this walk again from here on. Ideas were suggested for the group to follow: No complaining, suck it up (the pain), focus on our goal instead of the obstacles. One of the players suggested the team paint their faces with charcoal from the recent forest fire. This seemed to really lift the team around the challenge. After this the pace quickened, the complaining ceased, the talk turned positive instead of negative.
Prior to the adventure-based training weekend, the team had come together for a reason, that reason however was not clear among team members until players began to share their feelings about their future as a team.

[Under 19 player] When we hiked to the top of the big mountain and had that talk with the awesome view, it made us realise how much we all wanted to win. However, until then we had never really talked about it.

As the bush-walking day unfolded a real shift in the groups support for one another became apparent:

[Observation descending Mt Carialoo] The team was really operating as a unit on the side under Mt Carialoo and the walk down the southwest ridge. Everyone was tired and sore, but still positive and encouraging. They were helping each other over steep sections, falling over and helping each other up, spurting each other on. It was a good change from what had occurred earlier on that day.

One of the players commented on this challenging part of the day during the focus group interviews.

[Under 17 player] After leaving the top of the mountain, we had to descend a steep slope that was covered in ferns, stinging nettle, and leeches; we were tired. Kelly the girl in front of me kept slipping over. I kept helping her up. We just kept laughing. Even though we were tired, we kept pushing ourselves beyond what we had ever done. Instead of looking for sympathy, crying, getting upset, we just laughed, pulled together and kept going.

The sequencing of the weekend activities continually pressured and tested the players, however as things became tougher they appeared to begin to understand how a team needed to work to overcome adversity.

[Observation at camp on Saturday night]: Many players were not happy with the prospect of sleeping outside under a tarp with spiders, mozzies, wombats, snakes and other things they perceived could visit them in the night. Yet, that is what the team had to endure. Players were led through a discussion about what might happen if things went wrong at the nationals; were they going to allow this to derail their championship or were they going to remain focused on their task? Players were asked to complete a self-talk check and center themselves on the task of sleeping out together. Spirits soon lifted and the team got on with preparing for a night out together.

The learning from the evening before was tested the following morning, with further psychological challenges that had the team performing in an improved manner.
At 6.00am with the first sign of morning light, a member of the local Scottish Pipe Band was asked to wake the girls up by playing the bagpipes. The pipes played classic Scottish tunes as the girls attempted to come to terms with the harsh awakening. Players then had to complete a team swim across the lake. Despite the fatigue and the early hour, players were enthusiastic to get going, with the complaining from the day before not apparent. Players knew what was required of them and went about accomplishing it without any fuss.

The demands of staying task focused increased as the training weekend moved to the caving sequence at Bungonia National Park. Team members were continually challenged to build on their learning from previous activities.

After tasking the athletes with getting out of the cave in total darkness, players were asked to revisit the learning they had encountered up to that point, and asked to identify the essential elements it would take to complete the task of getting out of the cave. The only way for the team to get out of the cave was to work together helping one another, giving each other support. Strong analogies were made between this caving task and winning a national championship.

A comment from the focus group interview sums up the sentiments of the group toward the caving experience.

There were so many thoughts and emotions that were going through my mind in the cave; lots of self-doubt about whether we could do it. I felt the best when I just concentrated on what I had to do, and what my role was within the team effort.

Once the whole team had made it out of the cave, the emotions shown by the team was something very special.

As everyone clambered out of the cave huge, white smiles were juxtaposed against dust-covered faces with tear tracks cascading across cheek-bones. It was hard to recognise the group from those who arrived 2 days earlier. Genuine hugs of relief and support went around. The group was just euphoric with a sense of utter amazement at their seemingly impossible feat they had completed.

For many of the player this caving experience was the turning point for them, and one rich in metaphoric lessons.
weeks after the Kangaroo Valley weekend, the caving part of the trip is something that is still so vivid in my mind. I have never in my life been in a situation that I have felt totally out of control like that. I just could not get my body to work when I was trying to fit through that tight part near the end. I knew what I had to do, but I could not calm myself down. The lessons I learnt on that day have helped me with my goal shooting. I now notice that I experience similar sensations when I am playing in a big match and the pressure to score is on me. Instead of letting it get to me as I used to, I now have a routine that helps me stay calm and relaxed and allows me to shoot much better than before.

[Under 17 Coach shortly after exiting the cave] That is the most intense thing I have ever done in my life, all I wanted to do was get out of the cave but I couldn’t, I had to try and remain calm but couldn’t. [Then in the focus group interview] I felt the caving experience was a real turning point for the team, and one that we constantly returned back to for inspiration and motivation when we needed reminding of what a team could accomplish if it worked together.

[Under 19 coach] The success we experienced was something to do with the shared experience we all went through, you couldn’t replicate this kind of team experience in normal training. It gave us a benchmark or foundation from which to build the rest of our season.

The following statement sums up the intensity toward the group task after the training weekend:

[Under 17 player] The team was close before the training camp, but the mental skills, and belief we gained in ourselves because of the weekend and especially the caving, built us into an unbeatable team.

Evidence of Group Integration-Task after ABT weekend back at netball training

The emotional high after the adventure training weekend carried over for weeks after the teams returned to their normal training in Sydney. Coaches of both teams noticed differences in the way their players were approaching training.

[Under 19 Coach] In the two weeks after the training camp, the tension was like a volcano waiting to explode. Our first team meeting at the end of training was full of emotion. There were tears, individual problems came out, however, this was the start of us coming together, we just seemed to become so focused on our goals.

The same emotions were felt by players.

[Under 19 player] The emotions after the training camp ran high for weeks after, we were still high at what we had achieved.

The change in task focus was also verified (and triangulated) by team management staff who did not attend the adventure-based training weekend, but who attended all netball training and games.
[Team Manager] When the girls came back from Kangaroo Valley, I immediately noticed a real change in their focus, and what they were talking about before and during the games. There was all this talk about caving, and how they overcame the challenge. They even incorporated little motivational chants in their time-out huddles that reminded them of what they had done. Whatever happened down there was a real positive change.

The emotion and focus that began during the ABT weekend was sustained until nationals.

[Under 19 coach] When we got on the bus to go to nationals I knew something had happened, we felt like a team. There was a real focus on task and a sense of purpose as we drove to Canberra. Players new what the job ahead involved.

**Evidence of GI-T during competition at the national championships**

During focus group interviews players described the feeling within the team during competition.

[Under 17 player] At the nationals we all felt part of a team. The team came first, individual needs were second.

[Under 19 player] We had more effort for each other. Normally when we were chasing and contesting a long ball, we would give up easily. After our training in Kangaroo Valley, we would put extra effort in for each other.

[Under 19 player] We had better communication. When something went wrong on the court we would talk about it. Before if someone did something wrong she often received harsh talk or lack of support from some teammates.

The teams commitment toward the task of playing as a team was unquestionable, the team captain of the Under 19 team had the following comments during her interview.

[Extract from phenomenological interview with Under 19 player] We learnt to fight and play with heart, especially in the last quarter of the game. We were behind in several important games, but as we learnt during the adventure training camp, we never gave up. With this attitude we just kept coming back to win the important games. The camp taught us what we really had to do to win. In one match against Queensland we were behind by a few goals with not long to go. I called the team together and told them to remember the caving experience and what it took to get them out of that situation. We have to do the same here to win the match, let's work together and we will get out of this. With this the team just lifted as I had never seen before, we went on to draw the match.

The Under 19 coach commented on the same game situation.

[Under 19 coach] With three minutes to go, the team came together during a time out. Jackie (the captain) revisited the key learning they got out of their caving experience; mainly, they had to stay focused and work together for success to come.
They were so fired up, all the barriers came down, and the team just built up into this unstoppable machine. As the siren sounded, we shot a goal that tied the game; with this the whole bench erupted, you could just feel the excitement and togetherness. That "being there for one another" and "trusting one another" just hasn’t been there over the last few years. This draw kept us in the tournament. From here we went on to win.

**A coaches’ perspective of GI-T**

The coach of the Under 19 team best summarised the impact of the adventure-based training weekend on GI-T during her phenomenological interview.

[Extract from phenomenological interview with Under 19 coach] The theme of a “Journey to the Nationals” was a concept that began with the weekend training camp in Kangaroo Valley then carried through for the months leading up to the nationals. Everything we did after the camp gave us a feeling of force behind us. The training weekend gave us some correction and teeth. Everything the team did was focused on that one goal. From going to bed early, spending time on game plans, being on time, being there for each other, doing it for the team, this year the team had a completely different feel about it.

From the first game we played at the nationals, I knew we were going to win. The girls had changed so much, they were so much hungrier, and they wanted to win more than any other team. In 3 years of coaching at this level, I had not seen a team come together as they did after the camp…. This years training weekend made me be able to live and feel what being a team is about. I had read about it, I had heard about it in lectures, but to experience it for the first time bought new meaning. I know what true teamwork is because I have experienced it.

The training weekend gave us an edge. The top four teams are all equal, but NSW had an edge and a deeper sense of team. Both teams won their grand finals by one goal, and took the lead in the last 10 seconds. This edge under pressure was what was most noticeable…. In previous years the girls had worried about other teams, “who was the team to beat”. This years focus was on them as a team, and what they had to do to be at their best. Everything we did revolved around this. There was a total turn around in their mental thought process…. The team showed a new patience, as I had never seen before. No matter how hard the going got they didn’t give up, they kept working on the task, they made the right options, right calls, and were always there supporting each other.

This focus was not just seen in the players on court. At past nationals, the bench would be cheering if our own team made a mistake, as it may have provided an opportunity to go on in the game. This year however, the bench was so supportive; standing, clapping, cheering, and cuddling, the bench wanted to win as well. The final aspect of the tournament that I had never experienced in the past at nationals, was the support we received from the Under 17’s. They would finish their games and rush back for ours cheering and spurring us on. This helped give us the edge. There was a real sense of “NSW”.
**Group Integration-Social GI-S**

GI-S was concerned with an individual group member’s perception about the similarity, closeness, and bonding within the group as a whole around social aspects. Development in this area was evident during several stages of the study including: a) during the adventure-based training weekend, b) after the adventure weekend. It is interesting to note the discrepancy between the quantitative and qualitative results across the GI-S subscale, where the quantitative data showed no effect after analysis, yet the qualitative data was full of thick description about the efficacy of the intervention.

**Evidence of GI-S during the adventure-based training weekend**

A new and novel setting away from the familiarity of “normal” daily routines has been documented as one of the antecedents for change in an adventure-based programming setting (Gass & Priest, 1997). This change in environment was instrumental in bringing the team closer together as a social group.

[Under 17 coach] To get away from the netball environment allowed the team to get to know each other in another dimension as people and not just netballers.

The team debrief and discussion that was held during the bush-walk with the vistas from Mt Carialoo as the backdrop, were instrumental in opening genuine productive dialogue among teammates; this bought festering issues into the open where they could be dealt with. An exchange between two teammates during this discussion encapsulates the emotions at this time.

[Observation of team discussion on Mt Carialoo] The group was tasked over lunch to sit on their own and reflect on the strengths and weakness of the team. After lunch, they were bought back together and asked to share their views with teammates. It seemed every issue that was impacting on team dysfunction came out. It was done however, in a way, that everyone seemed supported; there was a willingness to talk. With the close of the discussion approaching one of the players who was regarded as one of the “ring leaders” of the Under 19 clique, asked in a frustrated tone, “Why did we have to come all the way up here to talk about this stuff?” At which time one of the new recruits to the team retorted, “Well just look at what had been happening back at training, we have been getting nowhere.”
Many of the hardships and unexpected events of the training weekend, which required the team to rally around each other for support, were also instrumental in bringing the team closer together. The absence of the comforts of home were one such event:

[Observation at Saturday evening campsite] The groups arrived back at camp just on dark and were hot, sweaty, filthy-dirty, and covered in nicks and cuts from the bush or leeches. They desperately wanted to return to the cabins to shower. The group however, was shown a tarp that had been erected back in the bush away from camp. Inside the tarp was a barrel of water and a large tin can. If they wanted a shower, players had to tip water on themselves, soap up, and rinse off. While there were initial comments of disbelief, the boisterous laughter, and raucous chatter coming from the shower area painted a picture of teammates that were enjoying the switch to a bush bathroom. Their whole attitude seemed quite positive and most players seemed amazed at how refreshed you could become after a tin can shower.

Expecting a comfortable nights sleep in tents and then finding that the course providers had “forgotten the tents”, presented further team-bonding challenges.

[Observation at Saturday evening campsite] Players were told that they would be sleeping in tents, however, the tents were deliberately left behind to create another “curve ball” for the athletes to deal with. There was much angst when the decision was made that we would have to sleep out under a big tarpaulin. Concerns about many of the nighttime creepy crawlies were aired. Despite this, at the end of the evening there were two teams of netball players snuggled side by side under a big tarp. The conversation, and camaraderie among the group was very evident; the sleep out appeared to have caused a bond between players that required a “one in, all in” mentality, where despite uncertainty, everyone rallied together and got on with the job. The whole scenario seemed to go off very well.

The pressure to confront unexpected challenges constantly forced the teams to work together to overcome frustration and hardship. This was evident when the Sunday alarm clock went off.

[Observation Sunday Morning] At first light a piper and drummer from the local Scottish pipe band performed a most memorable dawn chorus that could be heard for miles around. The look on athletes faces were one of disbelief. Tired and fatigued however, they all woke, changed into swimmers, and as a team swam across the Lake on their morning swim.

Several of the players commented on this part of the intervention during the focus group interviews.
[Under 17 player] Waking up at sunrise to the bagpipes and swimming across the lake, made us feel like we were all doing these hard things together, no one complained, we just got in and did it for each other.

[Under 17 player] The bagpipes were the highlight of the weekend for me, they just motivated us to get going even though we were so tired.

The intense nature of the caving experience had unexpected outcomes, with improved player-coach relationships developing as a result.

[Under 19 player] During the caving, the coaches were crying and scared, they went through what we did. Instead of a them and us feeling between the coaches and players, we all felt as one, working toward the same goal.

[Under 17 player] Once we got out of the caves, we hugged her (the coach). After this we could talk to her, it made her more approachable and easier to talk to. We seemed to really trust her decisions and coaching much more.

The constant stress and anxiety the teams were under during their training weekend created an atmosphere for a team to become closer:

[Under 17 player] The stress we underwent during the activities, you know that feeling of we are going to die, even though we knew we wouldn’t, opens up new relationships with others that would never have happened back at netball.

Evidence of GI-S after the adventure-based training weekend

Improved relationships among team members were a direct result of the adventure intervention.

[Under 19 player] Once we came back to training, relationships seemed to open up and be friendlier.

[Under 17 player] I thought we were close, but this whole experience just bought us closer together.

The emotional bond between players and coaches continued back on the netball court.

[Under 19 player] The shared experience of coaches and players going through the training weekend together, made the players feel that the coaches were one of us.

The bonding between players manifested itself during netball competition as well.

[Under 17 player] We were walking down that steep slope off the mountain in this thick bush, we’d fall over and have to get up. Our leader wouldn’t help us; we had to help each other. Even today, (10 weeks later) we have the scars on our legs. We had to stick together to get through that walk. This taught me that on court we could be
there for each other. If we work hard for each other, it fires everyone else up. They know you are doing it for the team, so they try harder too.

[Under 19 player] Communication within the team improved immensely after Kangaroo Valley. Things or problems that may have arisen from a game or harsh words were always left on court.

[Under 19 player] When anyone was in trouble during the camp experience the team was always there to get that person through the situation, like when Toni was having trouble in the cave, everyone was there encouraging her. This also happened on the court, if someone made a mistake, we encouraged her, rather than put her down, or say something hurtful.

**Group-Cohesion Results Summary**

It can be concluded from the rich accounts of athletes’ and coaches’ experiences, that the adventure-based training program had a major impact on the team cohesion of both the Under 17 and Under 19 netball teams. The following summarises the major trends in the team cohesion results.

As a result of the intervention and the learning sequence the athletes were exposed to, relationships within both teams improved. This was especially evident within the under 19 team. Players improved their communication and were able to resolve conflict that had led to dysfunctional behaviour and below par performances. Being involved in a shared experience that required teammates and coaching staff to work together to overcome adversity was instrumental in improving social relations within the team.

Individual players had self-doubt as to their ability to perform many of the challenging tasks under adverse conditions. They developed however, awareness of their inefficiency and worked at applying skills that would improve their performance as a team. With these improved social and task skills, came a new determination to succeed. There was tremendous team interdependence around performing at the nationals, athletes believed they could win and set about taking a confident and focused attitude into the nationals.

Improved group-cohesion among the NSW netball players created an atmosphere of intense social and task bonding around the goal of winning a national championship, this attitude was supported by psychological skills to help athletes cope with the stresses of competition, both these factors resulted in “improved on court performance” (See Figure 24).
Improved on Court Performance

There were many questions during the pilot stages of this research project as to whether there was any benefit to teaching psychological skills to athletes outside of their usual training environment. Added to this uncertainty, is the question of whether athletes would actually transfer any learning from the adventure-based training environment back to netball. This uncertainty formed the basis for the major focus of the qualitative research questions. This section of the chapter sets about reporting the results that may help answer this question.

There were many factors which when combined with the adventure training components influenced the improved netball performance and resultant winning of the national championships of both teams. Some of these other factors included:

- Outstanding Coaching: The coaching staff of both teams were highly organised and followed season long periodised training programs that attempted to have athletes at their peak for the national championships. Sub factors within this area included:
  - Improving fitness and flexibility
  - Addressing physical, psychological and social weaknesses within the team that could have inhibited performance.

- Trial Games: Both teams practiced against elite opposition from the national netball competition. While both teams were beaten by these elite players, it gave them practice playing under extreme pressure.

While these factors would have contributed to the teams overall preparation for the national championships the evidence in the data suggested that it had its foundation within the adventure training intervention earlier in the season, and was the difference between winning and losing in the heat of competition. Three sub-categories were identified that influence this success: a) Increased concentration b) Anxiety control c) Increased confidence (See Figure 26, p.168).

Increased Concentration

The foundation for better concentration skills was laid during the Friday night hall session during the intervention. From this beginning, several scenarios during the intervention were
designed to test the athletes ability to stay concentrated on a set task, as well as to refocus if distracted. The bush-walk on Mt. Carialoo provided the first challenge to athletes.

[Observation Hike across Mt. Carialoo] During the walk across Mt Carialoo, it became increasingly apparent that the team focus had dropped off the task and shifted to the discomforts being encountered in the bush. This was equated with the distractions of a netball game, the crowd, the opponents, and the scoreboard. Athletes were asked to use their new skills of self-monitoring, and self-regulation to determine what their concentration levels were doing at that point. They were then challenged to attempt to self-regulate to get back on track, using positive self-talk, and centering.

The abseiling from the west wall of Mt. Carialoo created many distractions for the team, extracts from phenomenological interviews described the emotion and application of psychological skills.

[Extract from phenomenological interview with Under 17 player] We sat back from the edge of the cliff watching the instructors getting their ropes ready. What struck me most at this time was how high we were, and how far it was to the bottom. I could feel myself start to tremble with fear, I just felt paralysed. I was so worried about my ability to make it, especially in front of everyone else. I did not want to fall, but I could not get control of myself. Even though I knew the theory of abseiling and that it was relatively safe, I was so worried. I sat at the back and watched everyone else go until it was my turn. When it was my turn, I did not want to go. One of the instructors came over, sat with me, we did a check of my body, and assessed where I was holding tension, we explored my thoughts and what I was thinking to cause so much worry. I couldn’t really explain it. We closed our eyes and tried some deep centring breathing to calm me down. We then imagined abseiling over the edge together. Instead of worrying about the height and the things that didn’t matter, we zeroed in on simple steps. All I had to do, was take it slow, look at my feet, take one small step after the other, and slowly let out the rope. One step at a time is what I focused on. I learnt to concentrate on the things within my control and forget about the distractions around me that I could not control. Every time I started to think about falling, I said “STOP” and changed my concentration back to my feet; one step after another. This really helped me stop worrying so much. The instructor came down next to me, talking me down and encouraging me to breathe and relax. I was so amazed at how incapacitated I was. When we reached the bottom we talked about how being distracted in a netball game can cause the same physical and mental blocks as abseiling, and that it was important to keep a check on what my body was doing before I got out of control, and refocus my concentration on the netball skills and the thoughts within my control.

At the conclusion of the bush-walk, players returned to camp and commenced a variety of chores to prepare for the night, one of them was to prepare dinner, and then clean up. Cooking did not get underway until around 9.00-9.30pm, clean up was much later.
[Under 17 player] At the time, all I wanted to do was go to bed, and then we had to clean up, I just could not face it. I just wanted to throw it all in the bin. In hindsight I can see how being able to stay positive and maintain my concentration even when I am tired and cranky can help me. Sometimes I feel the same about training I just don’t want to go, but what I think about can really help me. When we did all eventually get in there and help each other, it wasn’t such a big task.

[Observation at cooking clean up] At the conclusion of dinner, no one wanted to clean up; everyone was tired and had had enough. A group discussion was held to highlight the importance of finishing things off, especially when the going was getting tough, and we didn’t want to put more effort in. The connection to netball was emphasised: “At the nationals despite being tired at the end of the tournament we still have to get out there and play”, was a theme the facilitator visited with the team. Players were asked to check in with their self-talk and make sure it was positive, and were encouraged to maintain concentration right until the end.

Being woken at sunrise by bagpipes after what was for team members, the most physically and mentally demanding day of their lives required immense discipline to maintain concentration around the task of getting out of bed and jumping in a lake at dawn.

[Under 19 player] The bagpipes were the best alarm clock I have ever had. At the time however, I felt like I was pushed to my limit I was so tired I just did not want to get up. I learnt many skills that weekend of how to deal with this kind of pressure. I switched off my negative self-talk voice and told myself that I had to be up for the team. The way you think really affects how you feel, and the way your body works. By keeping my (self) talk positive, I was able to channel my energies to where it was needed.

The caving scenario was facilitated in such a way that it was deliberately set up to create an overload of emotions that would distract the athletes from their task.

Under 17 player] The caving taught me to switch off my fear when I am worried. Now in netball when I am nervous, I have learnt to switch off and block out things that distract me.

[Under 17 player] Especially when the matches were really close I used to get very nervous. Instead of worrying about the pressure, all I did was concentrate on breathing, being in control, and really thinking about my routine for shooting goals, not about missing or losing.
Observation during caving. The teams were led to the cave entrance and briefed on the task. Initially they were asked to explore the cave for options that would lead further down the cave. Players were split into smaller search teams, tasked with reporting to a central location with what they found. All but one of the passageways was impassable, however the correct passage at a glance also looked impossible. Players were uncertain and edgy. It is narrow, dark, and looks like no human could fit. With some support, one of the team members was encouraged to “squeeze” through the tight passage that was only 8 inches high. With doubt and apprehension the rest of the team followed. The stress levels and anxiety created by the claustrophobic conditions was rippling through the group. Many of the players felt paralysed, and found it difficult to think about the task. This initial challenge was all with headlights switched on to guide the way. Once we all passed this initial challenge, the cave opened into a larger chamber. Team members were asked to assess their thoughts and body reaction to the challenge on the way in.

To get out of the cave, the team was tasked to find their way out without turning their lights on. In discussions with athletes after the event, many found the thought of the task overwhelming, however the actual process of getting from the cave they believed was actually easier, as they had to focus their concentration on tasks within their control, instead of worrying about getting stuck, as many did on the way into the cave. This concept of controlling the controllables was emphasised in the post caving debrief, that is, when the pressure is on, focus on the basics that are within your control.

The lessons from caving stayed with the girls right through until the national championships. It appears that this single event was an important tool in helping individuals and the team, refocus their concentration when under pressure. The following demonstrates this point:

Under 19 player: We were in the final and were trailing with several minutes to go when a time out was called. Jackie told us to think about how we got out the cave without lights or anything else, just us; we had to do the same thing now to win this match. We all stood in a huddle, and looked at each other, put our hands in the middle and did our team cry, “out of this hole”. I don’t know what happened over that final few minutes but everyone played as if they were possessed. Everything just clicked and we clawed our way back into the game. Jenny scored a goal right on the buzzer to tie the match. We went through to the final because of this. I believe that our little cry of “out of this hole” meant a lot to the team. It really made us use the same spirit that got us through the challenges of Kangaroo Valley. It really made me think about what I had to do.

Under 19 captain: I called the team together and told them to remember the caving experience and what it took to get us out of that situation. We have to do the same here to win the match, lets work together and we will get out of this. With this the team just lifted as I had never seen before, we went on to draw the match.

Under 19 coach: This training weekend gave us an edge....This edge under pressure was what was most noticeable.

Under 19 coach: This years focus was on them as a team, and what we had to do to be at our best. Everything we did revolved around this. There was a total turn
around in their mental thought process.

Increased Anxiety Control

Giving athletes the opportunity to experience what it meant to control anxiety levels that were inhibitive to performance was an important goal of the intervention.

[Observation: Abseil off Carialoo] The dramatic scene of the abseil with the big cliffs either side of us and the valley bottom hundreds of metres below, provided a great deal of tension and apprehension within the group. It was a perfect place to practice the psych skills the teams had learnt in the hall the night before. The concept of taking time to monitor one's thoughts and bodily sensations was emphasised. Athletes were asked to monitor their anxiety levels. They then had to implement strategies to help them cope if needed. Players could be seen rehearsing, centering, breathing and mentally preparing. Anyone having difficulty coping, was taken through an “edgework” interaction where the facilitator mentored the individual with the appropriate mental skills for controlling their anxiety.

[Under 17 player] I am not sure if the mental skills helped me when I was abseiling, but I know that when I was back on the netball court, nothing could have made me feel as nervous as I did on that cliff. When I was worried however, I knew what to do to get myself feeling right for the game.

The teams making their way out of the cave in the dark without the use of lights, was easily the most significant event of the adventure-based training weekend. It was instrumental in helping the teams understand how excessive anxiety could inhibit performance.

[Edgework observation] I had positioned myself just down from the tightest part of the cave, where I knew players would have trouble getting through. I was nearby to lend assistance and support if required. Once individuals reached the tightest part of the squeeze, the roof of the cave really pressed down on them, constricting their chest and making it difficult to breathe. At this point, most players begin to breath hard, tighten up, and feel very uneasy; several hyperventilated. At this point players are asked to focus on their body, and the feeling and tension within. They are then directed to their thoughts, and are guided through a centering and breathing task that helps them gain control. Once they began to relax we had a brief talk about the feelings they were having and how in high pressure competition matches, similar feelings may occur, resulting in an inability to perform. With this assistance, the player manages to relax, gain control of their breathing, and wiggle through the “squeeze”.

The mental skills training sessions during the intervention equipped both the coaches and athletes with tools to use back at netball.
[Under 19 Coach] The real nature of the caving experience taught us so much. To have to stay in control, breath, and keep anxiety levels down so you could still function was so real in the cave, and had direct implications to game situations in netball. When the pressure was on during a netball game, I found myself putting into practice what I had learnt in the caves, on the sidelines. I would take deep centring breaths and gain control instead of holding my breath the whole game. I have taken sport psych classes before and learnt about breathing and centring, it all was good theory but somewhat meaningless. Caving however was real.

The goal shooter for the Under 19 team who had the responsibility of finishing off the work of her teammates, tells a most compelling story of how she applied the mental skills learnt during the adventure-based training weekend to a critical moment at the national netball tournament. Included with this phenomenological account are the graphics that the researcher used during the interview process to prompt discussion about what the athlete was experiencing at this particular moment in the match (See Figure 27).

[Extract from phenomenological interview with Under 19 player] The game was so close and we were behind with several minutes to go. During a time out we had talked about how we had to really lift if we were going to narrow the other teams lead. The rest of the team just hustled, they chased down everything, and turned this into attack feeding me the ball. We were one goal down with only about ten seconds to go, and the other team had the ball down the other end of the court attacking. Marion however intercepted a pass and threw this giant bomb right at me, I caught it with only a few seconds left on the clock. My heart was just pounding it felt like it was trying to jump out of my chest My muscles felt heavy, like I could not control them, and I was all light headed. I had a flash back of lying in that squeeze section of the cave talking to you, the feelings I was having were the same, however this time I immediately knew what I had to do to gain control. I briefly closed my eyes, took a quick breath, and told myself to relax. I felt this unbelievable sense of calm. I saw myself using good shooting technique and the ball going into the net. I opened my eyes, and took the shot; it went in. We tied the match. We knew this was enough to get us into the final the next day.

Increased Confidence

Confidence becomes an important predictor of performance only when one has the necessary skills and motivation to accomplish the task (Weinberg & Gould, 1995). It became clear as the season unfolded that both netball teams were developing the technical skills to be a contender, and were focused on their goal of performing well at the national championships. The adventure-based training camp helped lay a foundation for strengthening team and individual confidence so optimal performance could be reached.
[Under 17 player] Caving taught me that you can push yourself harder than you really think you can go. Sometimes I thought, I can't do this, but I learnt that you can.

[Under 17 player] I learnt to push myself further than what I really thought I could.

[Under 19 coach] This years camp gave me this tremendous feeling that nothing was impossible.

The program sequence and its relentless challenge appeared to be important in extending players belief in themselves.

[Under 19 coach] The program sequence or progression from easy, to tough, to tougher, was a really important step in preparing the girls for the nationals. It really pushed them to new limits and showed them what was possible when a team worked together.

[Under 17 captain] Every activity kept challenging us further. We would be given a task and many of us thought it would be too difficult for all of us to complete. However, we always seemed to rise to the challenge. By the end of the weekend, we had overcome so much that we believed we could achieve anything.

Having the disposition to take risks in pressure situations is the sign of a team full of confidence. This was the case towards the end of the national championships.
[Under 17 player] I learnt I have to take risks. When we first arrived at the cave and saw the tiny hole we had to go down, I just swore my head off. However, during our netball games you had to take risks as well, you had to put yourself into it, it might come off or it might not, but you had to at least try.

[Under 17 coach] The team was close before the training camp, but the mental skills, and belief we gained in ourselves built us into an unbeatable team.

**Improved on Court Results Conclusion**

The results of this section illustrated the process of experientially learning sport psychology skills during the adventure-based training intervention and then how these skills were transferred to netball specific situations. As a result of improved mental skills, and the successes of the team in overcoming what seemed to be insurmountable obstacles in the lead up to the nationals, self-confidence grew within the team. This self-confidence manifested itself as sheer determination on the court to fight to the end of every game even when things seemed all but lost.

**Change Outside of Netball**

While it was beyond the scope of this research project to investigate how the adventure-based training program impacted on participants lives outside of netball, several enriching stories show that the learning that went on during the intervention went way beyond netball.

[Under 17 coach] During caving, I wanted to turn the light on when we were trying to get out of the cave with lights out. I was so scared. I felt I had no control whatsoever over my body, my thinking, I could not get it together. I got more out of this training than just things to do with netball. I was so emotional for days after this weekend. I would just keep breaking down in tears. I am someone who has always been able to do anything I tried, needing no help from others. Outside netball, I always try to take too much on. To get out of the cave I had to let go of the control I usually have, and rely on others to help me. This has taught me to ask for help, and that asking for help is okay. I'll tell you, that weekend has just had a major impact on me, I tell everyone I come across about it, but they just don’t seem to understand how powerful it was for all of us.

[Under 19 Manager] The girls kept a diary, which I collected in from time to time to monitor how they were going with their training. They could also write to me and talk about any other issues as well. One of the players in her journal summed up the adventure-training weekend in a way that I believe encapsulated how most of us felt.

"Not only did the weekend teach us how to be good netballers, it taught us how to be the best at life."

One of the goals of any training program is to influence participants lives. Adventure-based training has the potential to impact on many areas of athletes’ lives, not just their sporting life.
PROCESS RESULTS

Meyer and Wenger (1998) identified a theoretical perspective, “Lewin’s change theory”, to explain the process that underpinned their adventure training intervention with athletes. While their study identified several implications for practice, they state that, “continued questioning and further study are clearly necessary in order to better understand the processes through which adventure education outcomes are achieved (with sporting teams), and to ensure that this knowledge is translated into improved practice” (p. 263). This present investigation set about examining in detail, the processes of the adventure-based intervention.

After the outcomes of the adventure-based intervention were identified, the data was re-examined in an effort to explain the processes through which the outcomes were achieved. This being part of the recommendations to future researchers by Neil (1998) and Anderson (1994). The raw data, along with several theoretical paradigms were examined to identify the theoretical perspective, which best fit or explained the data (Strauss & Corbin, 1990). Kurt Lewin’s change theory was utilised by Meyer & Wenger (1998) to explain the results of their investigation. This present study replicated this approach in order to determine whether Lewin’s theory was appropriate in explaining changes within an interacting netball team, as opposed to a co-acting tennis team, as was the case with Meyer & Wenger work. While Lewin’s model will be used as a framework for explaining the processes of the intervention, other existing constructs that align with Lewin’s model will be woven into this framework to give greater understanding of why the outcomes occurred.

Figure 28 displays factors contributing to the process through which the adventure-based training outcomes were achieved. This framework will guide the following results.
<table>
<thead>
<tr>
<th>Categories</th>
<th>Sub-Categories</th>
<th>General Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team selection, cliques, dysfunction &amp; disharmony in team</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team playing below what they were capable of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning &amp; needs analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isomorphic framing and facilitation skill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matching sequencing of activities with stage of group development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilderness environment &amp; activities causing stress, disequilibrium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitation: Isomorphic framing, frontloading to challenge athletes in a way that mirrored sporting context</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experiential nature of program for practicing PST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Awareness, self-monitoring of cognitive &amp; somatic state</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth and style of facilitation educational, developmental &amp; therapeutic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitation techniques: edgework, debriefing, isomorphic metaphor framing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological skills training by facilitators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coaches administering PST workbook and implement action plan for success</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilderness as a place that creates equals among team members (neutral environment)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilderness as a place that promotes reflection &amp; learning about self &amp; others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved communication &amp; relationships therefore conflict resolution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group dynamics: Group roles and group norms talked about, agreed &amp; acted upon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goal setting for team and individuals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological skills practice: Self-monitoring and self-regulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased group-cohesion in netball on all 4 subscales.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved communication at training and on court</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase trust, breakdown of cliques</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved roles and norms at Nationals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application of psychological skills to netball specific problems &amp; situations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved netball performance: “Winning National Championships”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 28:** Factors contributing to the process through which the adventure-based outcomes were achieved
Unfreezing

Unfreezing involves “a motivation or desire to change which is typically prompted by feelings of inadequacy or failure, threats to self esteem, or general feelings of turmoil. The individual believes that through change, these feelings of inadequacy and failure will cease to exist therefore they are ready and motivated to change (Lewin, 1965 cited in Meyer, 1998, p.245). There was clear evidence of athletes passing through the unfreezing stage during the early part of the intervention; this was broken down into two sub-categories: “Forming/storming” and “Disequilibrium/stress”.

Forming / Storming

As discussed in the literature review, when a team is formed, it develops through several stages of development. Generally, participants take time to get used to one another while group roles and norms are sorted out. This phase of team development was clearly seen with the NSW netball teams. Initially cliques within the team were causing dysfunction and great tension.

[Under 19 coach during a pre-intervention meeting] This team is a talented bunch of girls, but they just can’t work together, there are some in the team that just think they are above everyone else. We are going to go nowhere unless we can sort it out.

[Under 17 coach] My team gets on very well, but they are so naive about what is involved in winning a national championship. They think they know everything, but there is still much to learn.

The coaching staff had difficulty finding solutions to the teams problems back at their usual training venues. To correct this, the sequencing of the adventure-based intervention was specifically designed to highlight and bring into the open, the dysfunctional behaviour and lack of preparedness with the teams. Upon arrival at the outdoor-centre on day one of the intervention, initial signs of tension within the team were evident from the outset.

[Observation shortly after teams arrival in Kangaroo Valley] Keeping with the theme of getting the players to know each other better, groups of four were allocated to a bunkhouse style room. Players initially thought they would be able to choose their own roommates, but this was not the case. There was some annoyance about this within the group, with several players talking under their breath about it, and looking at friends as if to say, “I have to bunk with her?”

Once room allocations were organised, players were tested for their organisation and punctuality.
Players were then given a time limit to make their beds, organise their belongings, and be ready for physical activity at the Glengarry Gymnasium. There was a real discrepancy within the group about the importance of this task. Some team members were punctual and on time, while it did not seem to worry others, that most of the team had been waiting for them for more than 15 minutes past the deadline.

Similar tardiness and lack of effort was again seen early on Saturday morning when the team was supposed to be disciplined and organised for an early morning jog and swim.

Later Saturday morning the group left on their bush-walk. They were set a task to test their ability to follow instructions as a team. They had to hike up a steep mountain working together, ensuring they did not split their group.

The dominant behaviour of the clique group, and the way their behaviour had affected others in the group came to flashpoint during the lunch break on Mt. Carialoo.

The group was tasked over lunch to sit on their own and reflect on the strengths and weakness of the team. After lunch, they were brought back together and asked to share their views with teammates. It seemed every issue that was impacting on team dysfunction came out. It was done however, in a way, that everyone seemed supported; there was a willingness to talk. With the close of the discussion approaching, one of the players who was regarded as one of the “ringleaders” of the Under 19 clique, asked in a frustrated tone, “Why did we have to come all the way up here to talk about this stuff?” At which time one of the new recruits to the team retorted, “Well just look at what had been happening back at training, we have been getting nowhere”. 
It was at this time that the teams finally realised they needed to change if they were going to be a successful netball team. The “unfreezing” process was underway.

[Under 19 player] When we hiked to the top of the big mountain and had that talk with the awesome view, it made us realise how much we all wanted to win. However, until then we had never really talked about it.

Stress / Disequilibrium
As well as providing opportunities to help players through the initial forming and storming phase of group development (as outlined above), stress and the resulting disequilibrium was used to instill in the athletes a need to prepare mentally for the nationals. Rather than just hearing about psychological skills and how they might help performance, the intervention set about providing opportunities for athletes to experience first hand, how athletic prowess can be severely inhibited if mental skills were not applied in the appropriate way. Friday night in the hall where athletes climbed, abseiled, and flew from the giant swing, were all designed to begin this process.

[Observation on climbing wall] Even though it was within their physical capabilities, the athletes’ (after their first attempt on the climbing wall) reported poor concentration, ease of distraction, and doubt about their ability to complete their climbs. The group lacked a focus and a belief in their ability to overcome the psychological aspects of the initial climbing task. They were letting things outside of their control distract them. This worry and fear was acquainted to feelings some players get in the heat of major competitions.

Players experienced how poor mental skills can really distract their performance. Similar encounters were had throughout the weekend while abseiling in the hall and from Mt. Carialoo.

[Observation from the abseil platform] At the edge of the abseil, somatic and cognitive anxiety was very evident with many visible signs including: Increased breathing, students wiping their hands on their pants to relieve sweating palms, sweating on forehead, claims of pounding hearts, nervous shaking in the legs and arms. Negative self-talk and doubt was also evident with questions and statements like: Is the rope safe, can I fall? I don’t know if I can do this!

[Under 17 player waiting to abseil on Mt. Carialoo] What struck me most at this time was how high we were, and how far it was to the bottom. I could feel myself start to tremble with fear, I just felt paralysed. I was so worried about my ability to make it,
especially in front of everyone else. I did not want to fail, but I could not get control of myself.

Helping athletes become aware of when mental skills were required was an important step in the whole training experience.

[Observation Hike across Mt Carialoo] During the walk across Mt Carialoo, it became increasingly apparent that the team focus had dropped off the task and shifted to the discomforts being encountered in the bush. This was equated with the distractions of a netball game, the crowd, the opponents, and the scoreboard. Athletes were asked to use their new skills of self-monitoring, and self-regulation to determine what their concentration levels were doing at that point. They were then challenged to attempt to self-regulate to get back on track, using positive self-talk, and centering.

Similar challenges were repeated right throughout the weekend. (These were described in the methods section earlier). The emphasis however, on the importance of mental skills to perform at your best, was incorporated into every element of the programming, right up until the caving on Sunday.

[Observation while caving] The stress levels and anxiety created by the claustrophobic conditions were rippling through the group. Many of the players felt paralysed, and found it difficult to think about the task. These feelings were then related to how one feels during the pressures of a netball national championships, and how if left unchecked can seriously effect an individuals and ultimately the teams performance.

As these physical challenges kept confronting the group, athletes were continually encouraged to experiment with developing an awareness of their physical and mental state. This however, was not so successful during the early stages of the training weekend, especially during the Friday night hall activities.

[Observation at climbing wall Friday night] Some players were inhibited at first to actively trial their new mental skills in front of the group. There was an element of unease, uncertainty and embarrassment. Introducing the skills on Friday night was good in the sense that everyone had an opportunity to experience their use, before "really" being put under stress.

An awareness developed amongst the group that they were not yet fully equipped with the mental skills to adequately meet the challenges of high-pressure adventure activities, and thus
metaphorically, the pressures of national netball competition. This void in their athletic repertoire was another “unfreezing” motivation to instigate change within the team.

The process of unfreezing during the adventure-based training part of the intervention, with the accompanying forming/storming and disequilibrium/stress, relied heavily on the sequencing of activities in the appropriate environment. The need for change agent involvement to facilitate activities during this unfreezing stage was seen as critical, so that strong isomorphic links could be made between the “outdoors” and netball. Some of the Under 19 team, along with the coaching staff had, during the previous season attended another adventure training program with a different provider. They were asked to compare and contrast the two experiences so that elements that impacted favourably or unfavourably on the athletes could be used in future program design to assist the unfreezing process. The importance of the “change agent” or facilitator during the unfreezing stage is evident from the following comparison.

[Under 19 player] The camp last year was just like fun games. However, this years camp we were just thrust into the thick of it. There were no easy options, like when we had to climb to the top of the mountain, we then had to remain together to get down again, otherwise we would not have got out. Last year, you were not put into a situation where you had to push yourself.

[Under 19 player] The first camp we went on, the leaders used all the buzz words about being a team, then they had us do low or high rope activities, like all stand on a log together and we were supposed to be a team. We didn’t have to push each other. This years camp was individual and group focused and we were all pushed hard, and we had to work together to get through it.

[Under 19 player] All the activities we did on this years camp required us to help each other.

[Under 19 player] At night, we just watched movies; there was nothing to challenge us. We may as well have been at home.

[Under 19 player Coach] The adventure camp last year was at a superficial level, and I felt this is where our team was as well. This year was REAL, and it allowed us to get down to the deeper issues that I knew were affecting the team, and holding back performance on the court. I knew if we could solve the problems we would begin to see the talent, the girls really had.

Unfreezing Results Conclusion

When the netball teams came together at the beginning of the season there was an element of dysfunction affecting team performance. Structuring the program to challenge athletes and take them to the “edge” of their comfort zones into a state of disequilibrium was critical in
laying the foundation for future positive change. The above results illustrated how the teams dysfunction was highlighted during the adventure training, which then became a motivation to change. The use of the environment and the isomorphic framing of training activities greatly influenced this unfreezing stage, demonstrating the importance of change agents during this early stage of the intervention to help the change process.

Moving
Moving requires “new behaviours, responses, and problem solving approaches to be developed in an attempt to replace those that are causing the abovementioned stress (during the unfreezing stage). Through identification with knowledgeable and respected others (ie: change agents), an individual cognitively redefines the situation and continues the process of assimilating new ego enhancing, equilibrium-producing beliefs and behaviours” (Lewin, 1965 cited in Meyer, 1998, p.245). In scrutinising the “moving” data, three sub-categories were identified during the data analysis “Change Agents”, “Norming” and “Focus on Personal and Team Improvement” (See Figure 26).

Change Agents
The role of the facilitator and coaching staff as “change agents” were significant influences on the change process during the intervention. Several key areas were prominent in effecting the change process, these included: Program design, appropriate level of facilitation depth utilising isomorphic metaphoric framing, the debriefing of activities, and “edgework” facilitation. These facilitation techniques along with sport psychology technical expertise were important factors in assisting the netball teams to change and develop into a championship unit.

Choosing the right sequence of activities and a level of facilitation that stimulated learning so that it mirrored the goals of the client was critical for the success of this intervention.

[Under 19 coach] The program sequence or progression from easy, to tough to tougher was a really important step in toughening the girls up. It really pushed them to new limits.

[Under 19 coach extract from phenomenological interview] I was very skeptical about the adventure-based training concept after my first experience last year. I felt that so much was left unsaid and that some of the girls came away worse after attending the camp. During the training camp this year, everything we did related to netball and us as a team. The time we put in before the season to identify the main areas of concern within the team and developing a program to fix it, in my mind was very successful. For me this was evident when all the activities we did had some kind
of theme, which related directly to netball.

One thing that seemed to be instrumental in helping the players and us coaches was the way the facilitators were there whenever anyone was having problems. I know I had faced some real challenges during the caving, and just a few words of direction from the facilitator really changed the way I thought about the situation. I know many of the girls had similar experiences that helped them through their difficulties.

Developing psychological skills required the facilitators to structure activities, and deliver small lessons in order for the athletes to metaphorically comprehend the concepts being taught. This appeared to be effective.

[Under 19 coach] I have taken sport psych classes before and learnt about breathing and centring, it all was good theory but somewhat meaningless. The caving was real.

[Under 17 player] I really learnt so much on that weekend, it has really helped me sort through problems I was having with my netball, especially the way I concentrate when I’m under pressure or worrying about something that has nothing to do with netball. Friday night in the hall gave most of us new skills to use that really helped us at the nationals.

The coaching staff was given a role to continue the mental skills training and positive team development back at netball training after the intervention. This involved leading their team through the psychological skills workbook (See Appendix 7), and conducting regular team and player meetings. This process ensured the learning from the adventure intervention continued right through until the nationals.

[Observation at netball training in Sydney 6 weeks post intervention] At the conclusion of training, the coach asked the players to come together and sit in a circle. They were asked to share their perceptions of how training went that night and what was working well, and what could be improved. The coach then led the group through a competition planning strategy, where the team began to explore game plans and ideal mental game state, which they wanted to implement during the nationals campaign.

[Under 17 player] Meeting with the coach to set goals and regularly checking in with her to help evaluate my progress, helped me focus on improving aspects of my game that needed work. It helped me concentrate on the important issues.

**Norming**

Part of the “experiential learning cycle” involved providing opportunities for reflection, so that participants could make meaning of their experiences, and apply this learning so they could return to a new equilibrium and begin to “norm” around the team task. The outdoor
environment of Morton National Park provided an atmosphere conducive for reflecting on the team and each person's role within the team. The facilitator, who was the change agent, had to provide reflection opportunities, which were designed to promote learning and change. With this, communication improved, and conflict that had been festering was bought into the open so solutions could be found.

Being in the outdoors itself can be a catalyst to change:

[Under 17 player as she arrived to get a view from Mt Carialoo] Wow, the hard work was really worth it for this. I have never seen anything like this in my life.

[Under 17 player] The thing I enjoyed most was the view at the top of the mountain. We just sat there and did some thinking about the team and where we were headed. I learnt that it was hard work to get to the top, but it was worth it.

[Under 19 coach] To get away from the netball environment allowed the team to get to know each other in another dimension as people and not just netballers.

[Under 17 player] When we kept having these times to stop and go off and think on our own, at first I thought why are we doing this. I'd look around at everyone else and wonder what they were doing. After a while though, just being out here made me relax and think about our team, and what we had to work on. If we did not get this chance, all of us would have just sat around and chatted and not really worked on our problems.

The outdoors also provided an opportunity for the group to spend time without the distractions of netball training or city life so that they could communicate at a level that really made a difference. The facilitator, through the implementing and enforcing of debriefing guidelines, ensured an environment that was conducive to open disclosure and improved communication.

[Under 19 player] The outdoors provided an environment where everyone was equal. The coaches, new and old players were all the same; you could say what you wanted to anyone without feeling threatened.

[Under 19 player] The outdoor environment provided an atmosphere to air grievances, which we had not been able to do back in Sydney.

[Under 17 player] Being out in the bush was new, and provided a safe place for us to communicate.
Other aspects of the outdoor environment impacted on team members:

[Observation at the fireplace Saturday night] After dinner we got a big fire going, everyone sat around the circle. We played “The computer game”. This activity was designed to bring out positive feelings in the group by acknowledging teammates efforts and achievements, as well as pointing out dysfunctional behaviour that may inhibit performance. Before we started, everyone roasted marshmallows. To finish the night everyone had to sit quietly and just stare into the flames thinking about where we had come from and where we were headed. The atmosphere around the fire seemed to open everyone up. There was a really warm and positive feel by the end of the evening.

Players began to let go of the past conflict and dysfunction in the team and began “Moving” toward their goal of the national championships.

[Under 19 player] When we hiked to the top of the big mountain and had that talk with the awesome view, it made us realise how much we all wanted to win. However, until then we had never really talked about it.

In order for a group to grow and change and “Move” towards a common goal, there has to be certain guidelines to direct the behaviour of team members. Considerable time was spent during the adventure training weekend and afterwards back at netball training in Sydney, discussing and implementing team norms and team roles, so that by the nationals, the team would be functioning at its best:

[Under 19 coach during informal conversational interviews while waiting for a late group of girls] It is not good enough for these girls to be late, and expect us to stand here for fifteen minutes waiting for them. We really need to talk about this, it is becoming a problem.

[Observation of norms talk by Under 19 coach] After the facilitator asked the team to evaluate their personal organisation and punctuality, the coach gave the group a talking to about the importance of the team all aiming for the same standards. Personal organisation and acting as if they were part of a team that had a mission and purpose was thoroughly emphasised.

[Observation after walk up Mt. Carialoo] Despite clear instruction being given to the team, instructions were not followed by “the clique” members, who charged off ahead of the group instead of staying together and working as a team. After some quiet reflection time to evaluate the actions of the team, the coach talked to the group about having goals, and following plans, and that for them to work at the national championships, everyone had to buy into them, otherwise the team would fall apart.
When a teachable moment presented itself during a training scenario the facilitator would stop the activity in order to briefly discuss the learning implications the team was engaged in, and how the new learning might assist netball. Several opportunities to discuss team norms and group roles presented themselves:

[Mini time out during Saturday evening meal clean up] After cooking and preparing dinner, initially no one wanted to clean up, and there was much complaining and arguing about who should do the work. A time out was called where everyone had to stop what they were doing. The coach and facilitator discussed the implications of their behaviour. They were “bitching and complaining” said the coach. A discussion followed, outlining a team policy of no complaining and “an all in to help” when work had to be done. At the nationals, they were all going to have to do their own cooking and cleaning up, so a clear policy of expectations was outlined.

One of the real successes of the adventure-training weekend was the debriefing sharing circle, where team members would sit in a circle and discuss relevant issues under the guidance of the facilitator. This process of team communication, was carried on back at netball training by the coach at the conclusion of most training sessions.

[Under 19 coach] I was just amazed at how the girls opened up and talked when we conducted the debriefings. Up on the mountain was a real turning point for our team. When we returned to Sydney, we finished every training session with a circle where everyone could have a say to talk about problems or issues that needed airing in the team. Nothing was left bottled up as before, we became really open. Much of our planning, goal setting and strategising about how we were going to play at the nationals was carried out this way.

During the “unfreezing” phase of the intervention, athletes were in a state of disequilibrium trying to come to terms with the physical and psychological challenges they were facing. Several post intervention strategies were implemented to assist athletes through this stage into the “Moving” phase; this was termed “Focus on Personal & Team improvement” (See Figure 28).
Focus on Personal & Team Improvement

Goal setting was an important part of cementing the learning that occurred during the intervention. It ensured the energy and enthusiasm that was generated was carried on to netball.

[Under 17 coach] The theme of a "Journey to the Nationals" was a concept that began with the weekend training camp in Kangaroo Valley, then carried through for the months leading up to the nationals. Everything we did after the camp gave us a feeling of force behind us. The training weekend gave us some direction and teeth which to base all our effort on.

[Under 19 player] Our team was more focused after the camp, we weren't so serious, it got us on track and directed us to what had to be done if we were to win.

[Under 19 player] After Kangaroo Valley, our first team meeting at the end of training was full of emotion. There were tears, individual problems came out. However, this was the start of us coming together, we just became so focused on our goals.

[Under 19 coach] Everything the team did was focused on that one goal. From going to bed early, spending time on game plans, being on time, being there for each other, doing it for the team. This year the team had a completely different feel about it.

In order to help the team address areas of weakness in the lead up to the nationals, each player met regularly with the coach to set goals to help guide their technical and psychological development and preparation (See appendix 7). This had benefits in cementing the learning that had occurred during the adventure-based intervention.

[Under 19 coach] During last years team building camp we never heard from the course providers again after the weekend with them. After the Kangaroo Valley camp, we were given a program of activities that helped us practice and use the skills we had learnt. Every training and practice match we had, we were using what we had learnt. We would sit down as a team at the end of training, and set goals for the coming session and then the coming week. It helped us refine that winning edge right through until the nationals.

Implementing psychological skills back at training and netball were important determinants of the interventions efficacy. In order to promote the regular training of mental skills, a workbook was given to each player to guide this process. Coaching staff at the end of training, ensured time was put aside to practice.
[Under 17 player] My mental skills have come so far during the season, I knew nothing at the beginning, but I felt so confident within myself by the time we got to the nationals. When we practiced at training, it kept reminding the team of where they had come from and what we had to keep doing if we were to play at our best.

[Under 19 player] I felt much more in control of myself during training and matches leading into Canberra. I used to worry so much about how I would go and what others would think of me. Instead, I learnt to control what I was thinking, and only focus on the things that mattered.

[Under 19 player] The most interesting thing I noticed was how all the mental training we did through the season came together in Canberra. Nothing seemed to phase us, we had learnt to cope with the uncertainty and pressure and still perform when we were on the ropes. All the extra work we did paid off.

Moving Results Conclusion

The role of the facilitator and coaches as change agents was again important during this phase with the above results demonstrating the importance of programming the intervention in a way that mirrored the participants reality, and provided opportunities for “moving” past the dysfunctional behaviours that had been holding the team back. The impact of the bush environment as a place that provided a safe neutral setting to reflect and talk about solutions to problems was also a key to “moving” the team closer together. The use of goal setting and psychological practice sessions back at netball training was an important step in continuing the moving process after the intervention.

Refreezing

During the refreezing stage, new behaviours, responses and approaches are stabilised, and integrated into the individual’s repertoire and ultimately their world. Change agents continue to be important in this stage, providing support and reinforcement, and helping to identify forces that inhibit or facilitate change, so change can be maintained (Lewin, 1965 cited in Meyer, 1998, p.245). Ultimately, the success of any training program or intervention is dependent upon how participants “transfer learning” back to their real world. From an analysis of the data, it was clear that skills from the adventure-training environment were “refrozen” and utilised in netball competition and were instrumental in the team “performing” to its potential. As previously identified in the outcome section of the qualitative results, the concepts most readily transferred or refrozen by participants were “group cohesion”, and “improved on court performance”.

202
Group cohesion is described as a multidimensional construct that includes task and social aspects, each of which reflects both an individual and a group orientation (Carron, et al., 1985). In refreezing or transferring group cohesion, athletes began this process during the adventure-training weekend and continued refining the learning back at netball training. Several areas from the intervention that impacted on social cohesion; included: a) improved communication at training and on court, b) increased trust, breakdown of cliques, c) improved roles and norms at nationals. Task cohesion was greatly impacted through the application of newly learnt sport psychological skills, which ultimately improved on court performance (see figure 26). The following demonstrates the refreezing of these skills:

**Communication**

Improved communication on and off the court was evident after the intervention:

[Under 19 player] We had better communication. When something went wrong on court we would talk about it. Before, if someone did something wrong she often received harsh talk or lack of support from some teammates.

[Under 19 coach] Communication within the team improved immensely. Things or problems that may have arisen from a game or harsh words were always left on court.

[Under 19 player] The team talks that we had after training were more productive and honest.

[Under 19 coach] This talk was also put into practice on the court. All the buzzwords and new ideas weren’t just talk.

**Increased Trust / Break down of cliques**

A new trust was evident after the training camp. With cliques gone, the team functioned together to overcome adversity.

[Under 19 player] In the past grudges were held and carried on long after the game. This didn’t happen any more.

[Under 19 coach] I felt a great deal of trust in the girls. We were down by one goal with 5 seconds to go, one of our defenders threw a bomb to the shooter, she caught it in mid air. Her goal drew the match as the buzzer sounded for the end of the game. We had learnt to work together as a team and trust that the other person would be there to do their part for the team. It was like getting out of the cave, you couldn’t do it on your own; we had to work together and trust that the other person would be there for you.

[Under 17 player] The whole weekend required us to be there for each other. This helped on the court. No matter who I was on the court with, I knew I trusted them.
[Under 17 coach] In the past I had always trusted the girls, I just didn’t think they trusted themselves. It was great to finally see that the more pressure they were placed under, the more they trusted each other and were there for each other.

**Improved Roles and Norms**

Considerable effort went into establishing team norms and roles to help player organisation and focus during the nationals week. Players appeared to respond to the training and challenge.

[Coaches’ observation at the national championship week in Canberra] Teamwork and organisation around the hotel at the nationals was awesome. Punctuality and focus were unreal. Unlike the trouble on the camp, the team was always early, and got in and did everything without having to be asked. They were jumping out their skins to get going. A real change compared to earlier in the season.

[Under 19 Coach] During the past nationals, the bench would be cheering if our own team made a mistake, as it may have provided an opportunity to go on in the game. This year however, the bench was so supportive, standing, clapping, cheering and cuddling. The bench wanted to win as much as the players on court.

[Under 19 Coach] The final aspect of the tournament that I had never experienced at any past nationals, was the support we received from the Under 17’s. They would finish their games and rush back for ours cheering and spurring us on. This helped give us the edge. There was a real sense of “NSW”.

**Phenomenological accounts of refreezing**

A phenomenological research approach was one of the goals of this investigation, in an effort to gain the participants’ perspective of the intervention. This chapter will conclude with participants’ accounts of how elements of the intervention were refrozen or transferred to the netball environment.

[Under 19 Captain] I can tell you how the camp affected the team and our performance from two perspectives. While I came down to Kangaroo Valley for the camp, I could not participate in many of the activities because I had torn all the ligaments in my ankle. This meant I had to miss the bush walk, and caving. What I noticed however, is how the attitude of the rest of the girls changed over the weekend and during training towards the nationals. During the weekend they would get back from one of the activities and you could not stop them talking about it, they were just hyper. What definitely improved from my perspective was an improved respect and empathy towards everyone, there was no fighting between players, we felt like a team, and everyone deserved to be there. I think originally, some of the girls thought they were better than others, and used to big note themselves. Back in Sydney, the team was so psyched up. I remember the intensity at training, everyone seemed so focused. We had come back from Kangaroo Valley, and everyone new what the job involved if we were going to be a chance of winning. Everyone was so pumped up after the first training that some of the girls burst into tears when we talked about how much we had changed in just a weekend, it was
amazing. I couldn’t quite relate to what they had been through, but you could feel the energy that it had created. It was like everyone was now possessed.

This intense enthusiasm carried on right through until the nationals, we just seemed to build on the learning from that weekend, and got stronger and stronger. When we finally got to Canberra the team was there to play, you could feel it in everything we did. Everyone was trying her best both on and off the court. I have been to nationals before and some of the girls don’t take it seriously and play up a bit, but our team was clear about what we had to do. The coach made us do lots of planning during training so we already knew what to expect and what plans we needed to follow.

It was clear that the Kangaroo Valley trip had an affect on the girls netball. In the hotel before games, players were practicing their breathing and centring in order to remain relaxed and prepare for the game, no one was too up tight, and did not worry about who we were playing. The coach had us together talking about how we were going to play as a team, and that worrying about others would not help our cause.

Probably the thing that I recall the most about the team was how we learnt to fight and play with heart, especially in the last quarter of the game. We were behind in several important games, but as we learnt during the adventure training camp, we never give up. With this attitude we just kept coming back to win the important games. The camp taught us what we really had to do to win. In one match against Queensland we were behind by a few goals with not long to go. I called the team together and told them to remember the caving experience and what it took to get them out of that situation. We have to do the same here to win the match, lets work together and we will get out of this. With this the team just lifted as I had never seen before, we went on to draw the match.

I did not go into the cave with the girls because of my ankle, but I was there when they came out, it was amazing to see the emotion and relief when they made it out. Whatever occurred in that cave it helped us win the nationals without a doubt. The team came up with this call “out of this hole”, for me, I thought it was a bit silly do begin with as I could not relate to what it was supposed to mean. The others told me about it, and how they thought they were going to die, but because they all stuck together, they got out of the cave. Whenever we were in trouble we would use this to our advantage, and everyone would just put the extra in to get us over the obstacle. I can still vividly feel the power and enthusiasm of the others, it made a difference to the way we played.

In looking back on this season, and comparing it to last year, I played in the team last year, we were supposed to do well, but did not even figure in the finals. This year however, it was different, we came together as a team, and all of us wanted to win more than any other team. I don’t think this would have happened if we did not start the year with this camp. We would have been just like last years team, we all thought we would win easy, but did not play together like a team.
During the phenomenological interviews, one of the players was asked to describe from her perspective, how the team evolved during the season and whether the adventure intervention helped the team in any way.

[Under 19 player] When I was selected, I was quite excited that I made the state team, but I did not know what to expect. After our first few trainings and practice matches, I felt like a foreigner. Some of the girls knew each other well, and I felt a little left out both on and off the court, and did not feel a part of the team. This was showing itself in games where I felt I was not being treated fairly. One of the girls could be quite short with you and made you feel like an idiot. Anyway, after the camp in Kangaroo Valley this all changed, we all had a new respect for each other. [She was asked could she pinpoint what was it about the weekend that led to this change].

There was quite a tension at training before the camp, people were getting angry at each other, as if we were opponents rather than teammates. Lots needed to be said, but no one knew how to bring it up. When we went out bush-walking you [the facilitator] provided that opportunity for us all to share our thoughts about how we could improve, this just gave everyone a chance to get all the negative stuff off our chest. After this it seemed like a weight had been lifted off our shoulders and we could get on with what we were really there for, rather than just worry about offending someone.

The question of whether this change helped us can easily be determined by talking to the girls in the team. They still talk about how the weekend in Kangaroo Valley changed them. It was the most significant thing any of us experienced during the season, and dictated our whole approach to playing. We learnt how we had to work as a team during the activities we did, and what would happen if we went one out. This same approach, described how we played our netball. Everyone was there for the same reason, to give it our best as a team.

The impact of the caving experience appeared to enhance group cohesion. Because of this experience, the team came up with the team cry “out of this hole”. One of the players was asked to describe what this meant to herself and the team.

[Under 19 player] “Out of this hole” was a phrase we came up with after the caving day we had. We were having a talk about strategies we could take away from the training weekend and use back in netball competition. Everyone agreed that getting out through that tiny hole while caving was worth remembering. At first it was just words, but over the months after the caving our coach had us talk about it time and time again. She really wanted us to remember what a team could do if we all worked together.

In training and practice games, we began to use it after time outs or breaks in play when we wanted to get psyched up. The coach had us develop a little routine around the words. We would come together and close our eyes, and imagine the darkness of the cave, and how we all talked and worked as one to get out. We would then take a big breath and centre ourselves, and then yell “out of this hole”. We then had to lift
ourselves and concentrate on what our job was in the team. The theory was that if we all lifted and concentrated we would work better as a team, like caving.

During the nationals, we found ourselves in trouble a few times, but never doubted that we could do it. When we used "out of this hole" I would come into the circle and look at the other girls, we all knew what we had been through to get here, and the look of determination made you want to give it your all for them. For me, I would just take a big breath and think about my job, I tried to be on my opponent when she had the ball, I would not give up, and constantly tried to force a mistake or turnover. I believe it was this extra effort that often caused the opposition to cough up the ball at a critical time, and ultimately let us back in the game. When this extra effort paid off the enthusiasm and support for each other on the court was unreal, you could feel the emotion of everyone on court spurring you on.

Change agents continued to be important in the refreezing stage, providing support and reinforcement, and helping to identify forces that inhibit or facilitate change. One of the important factors in the transfer of skills, was to follow up key learning successes from the intervention weekend and regularly re-enforce this back at netball training. A plan of follow up was implemented with the role of facilitation shifting to the coaches. To help this development, support material was developed to guide these sessions (See appendix 7 & appendix 10). The following identifies the coaches' influence during the lead up to the nationals:

[Under 19 player] The coach had us together talking about how we were going to play as a team, and that worrying about others would not help our cause.

[Under 19 coach] In previous years the girls had worried about other teams, "who was the team to beat". This year's focus was on them as a team, and what we had to do to be at our best. Everything we did revolved around this. There was a total turn around in their mental thought process.

[Under 17 player] The coach made us do lots of planning during training so we already knew what to expect and what plans we needed to follow.

[Under 19 player] At first it was just words, but over the months after the caving our coach had us talk about it time and time again. She really wanted us to remember what a team could do if we all worked together.

A Control Group Perspective

In an attempt to gain an understanding of the control group's experience of participating in the study, informal conversation interviews (Glesne & Peshkin, 1992) were held with players and coaches prior to a match at the national championships. Questions focused on how being involved in the study and completing four time measures of questionnaires had impacted on the team. The following observations and comments were recorded:
When approached at the National Championships the control group displayed a distinct uneasiness toward the researcher. There was a lack of rapport and an unwillingness to talk to him. The researcher felt intrusive and a hindrance to the teams preparation.

Ah! You are the one responsible for making us fill out all those questionnaires.

What was the point of filling all those out? It became so boring in the end.

In a general conversation with a group of control group players there seemed consensus that there was a real lack of motivation and enthusiasm to be willing participants in the study. It was apparent that it was frustrating to have had to fill out the same questionnaire four times throughout the season.

The results in the refreezing section help build a strong argument for the efficacy of adventure-based training. It would seem apparent that athletes not only transferred learning from the adventure environment to their sporting endeavours, but this learning was somewhat beneficial in both teams winning their national championships under stressful and dramatic circumstances.

In contrast to the treatment groups experiences, the lack of enthusiasm and cohesion in the control group manifested itself with performances that resulted in the control group losing an opportunity to play in the semi finals.

Lincoln & Guba (1985) called for any qualitative investigation to be judged on grounds of trustworthiness. Confirmability is one key aspect of trustworthiness that is essential in qualitative research; it assures that the interpretation of the data will be truly representative of the contexts and the perspectives of the participants being investigated and not influenced by the researcher's bias. In presenting the data for this investigation the researcher attempted to paint a complete and accurate account of all the data that was collected. Traditionally, dissenting data is presented along with confirmatory data to give a balanced view of the intervention, and thus strengthen trustworthiness. Despite attempts to probe and identify dissenting data, little could be identified other than negative comments from the control group about filling out the GEQ survey four times, and the treatment groups expressed difficulty with some of the social questions in the GEQ. Both these aspects will be covered in the discussion. Despite the concerns over trustworthiness that this may create, the
researcher cannot present any dissenting data. Overall, athletes and coaches found the intervention to be an extremely beneficial and positive experience, and one that had a major impact on their lives and netball performance.

Conclusion
The qualitative results are rich in powerful testimony as to the impact of the adventure-based training weekend. The qualitative team cohesion data triangulates in a positive way with the quantitative GEQ results adding support to the statistical conclusions.

The athletes' testimonies also link strongly with Lewin's change theory, with the role of the facilitators and coaches as change agents having significant support in the data right through all areas of the change process, this diverging from Lewin's original theory.

The following Chapter 7 attempts to integrate the quantitative and qualitative results to give meaning to the athletes' experience and explain, with reference to the literature, why positive change occurred within the teams.
Chapter 7

DISCUSSION

Within this chapter, a discussion of the general issues and trends are dealt with according to the outcomes and processes identified in the results section. Wherever possible, the triangulation of the research findings utilising the comparison and contrasting of interviews and observations, coaches’ and athletes’ perspectives, along with quantitative data will be used as the cornerstone of the discussion. Furthermore, the original research questions will be addressed and integrated into the fabric of the chapter. In short, the data conveyed in chapters 5 and 6 “The Results Sections”, are collapsed into a format that ties the qualitative and quantitative data together to explain the athletes’ experience. From this data, several constructs are examined to identify the theoretical perspective which best fit or explained the data, this being consistent with naturalistic inquiry (Glaser & Strauss, 1967; Strauss & Corbin, 1990). Specifically, attention is given to Meyer & Wenger (1998, p.263) recommendations for future research, which stated that, “Lewin’s change theory as a theoretical explanation for the process through which adventure education outcomes are achieved needs to be investigated more thoroughly”.

Briefly, the results indicated strong support for Lewin’s Change theory, but on its own was inadequate to guide all the processes that made this present adventure-based intervention successful. Further theoretical explanation will be highlighted throughout the discussion to detail this theory more thoroughly. The most striking feature associated with the findings however, was the clear and unequivocal athlete perspective of how the adventure-based training was an instrumental part in the team’s success at the national championships and how skills learnt during this training were readily transferred to the netball court. While this theme was punctuated throughout the qualitative data, it was only partially supported statistically in the quantitative analysis; with only three of the four subscales returning significant results. One subscale GI-S, showed no significant change.
OUTCOMES OF THE ADVENTURE-BASED TRAINING EXPERIENCE

One of the major foci of this study was to determine how the intervention impacted on short and long term development of team cohesion. Examination of the results indicated that participation by the elite netball players and their coaches in the adventure-based training intervention did lead to significant and positive changes in team cohesion. If the reader considers the significant quantitative statistical results, along with the powerful qualitative triangulated testimony of the players and coaches, one can conclude that the data supported the following outcome hypotheses.

• Athletes who received an adventure-based training program intervention, would show increased team cohesion when compared to a control group.

• The duration of the intervention will see longitudinal improvements in all four sub-scales of team cohesion, when compared to a control group.

The results clearly indicate that the personal and team cohesion changes that the group underwent, had a powerful impact on their lives both on and off the netball court; following is a more detailed discussion of these cohesion sub-scale results.

TEAM COHESION

To facilitate the discussion on team cohesion the following overview of team cohesion sub-scales are included.

The GEQ has 18 items presented on a 9-point scale anchored at the extremes by Strongly agree (9) and Strongly disagree (1); scoring was treated as interval data. Four subscales of cohesion are contained in the GEQ, these included:

• **Individual Attractions to the Group-Task (ATG-T)** consists of four questions, which measured the individual group member's perception about her personal involvement with the group task productivity, goals and objectives; (Internal consistency, .75)

• **Individual Attractions to the Group-Social (ATG-S)** consists of five questions, which measured the individual group member's perception about her personal involvement, acceptance, and social interaction with the group; (Internal consistency, .64)

• **Group Integration-Task (GI-T)** consists of five questions, which measured the individual group member's perception about the similarity, closeness, and bonding within the group as a whole around its task; (Internal consistency, .70)
• **Group Integration-Social (GI-S)** consists of four questions, which measured the individual group member's perception about the similarity, closeness, and bonding within the group as a whole around social aspects. (Internal consistency, .76)

Scales were calculated so that larger scores indicated greater cohesion. Previous research has indicated that the GEQ possessed sound content, construct, concurrent and predictive validity (Carron et al., 1985).

**INDIVIDUAL ATTRACTION TO THE GROUP - TASK. ATG-T**

The adventure-based intervention had a significant impact on player and coach perception, with regard to their personal involvement with the group task productivity, goals and objectives. Quantitative results showed a significant effect size change between time 2 and time 3 for both the Under 17 (ES.56) and Under 19 teams (ES.65), while the control group showed no change. This result is considered a large and significant change, with the average effect size for outdoor education interventions being between .3 and .4 (Cason & Gillis, 1994; Hattie, et al., 1997). These effect size scores were maintained and slightly increased at time four. Both players and coaches reported that the high stress experienced during the intervention forced them to analyse how their own behaviour affected overall team performance. This introspection or “Transderivational Search” (Bacon, 1983) led to players addressing personal fears and the application of mental skills to gain control of their emotions in order to perform better for the team. It also required players to lift physically, despite fatigue and uncertainty about the outcome of their experience.

One of the major successes of the intervention was the way each of the activities challenged personal levels of resilience while simultaneously requiring teamwork and team support to make it through each challenge. Gass (1991) recommended that this strong isomorphic metaphor development is essential if learning is to occur. It is clear from the results that players were able to make a strong connection between the lessons learnt during their adventure experience and how these skills could be used in netball.

The coaching staff were also challenged to block out personal concerns for the betterment of the team. The real life stress that was experienced while caving provided experiences that mirrored the stresses and pressures of coaching during a close game situation. Skills to cope with these stressors were utilised by coaches during their netball national championships. Gass (1985) emphasised that a measure of success of any adventure program is whether participants are able to transfer learning from the adventure experience back into their real
lives outside the adventure environment. It was evident from the results that this transfer occurred.

The transfer of learning back to the netball court and the maintenance of these newly acquired skills was also a goal of this study. Results suggest that the teams receiving the intervention maintained and slightly increased their ATG-T scores 8 weeks after the intervention. Analysis of variance results showed this to be significant for the Under 17 team when compared to the control group. While the Under 19 team showed similar trends, the gains were just outside the 5% significance level. While this result was not statistically significant, the qualitative data suggest change occurred within the team; this having practical significance to the players and coaches, with gains positively impacting on team cohesion back at netball training.

Both treatment groups demonstrated improved cohesion scores, this contrasted however, with the control group who displayed a slight but steady decline in scores after each time measure. The reliability and validity of the control groups' responses could be bought into question because of comments made to the researcher at the national championships. Burns (1994) identified that the interaction between researcher and subjects could influence validity and reliability. He believed that the interaction between the researcher and participants could influence responses and rapport with the researcher and the research project. As the researcher was unable to attend data collection at the control groups interstate training venue, the importance of diligence and commitment to filling in the questionnaires across four time periods could have been lacking the enthusiasm that was displayed by the treatment groups.

INDIVIDUAL ATTRACTION TO THE GROUP-SOCIAL. ATG-S
The ATG-S subscale of team cohesion was concerned with the individual group member's perception about their personal involvement, acceptance, and social interaction with the group. Quantitative results indicated some interesting trends. All three groups began the intervention with near identical scores. The control group however, showed a very large and significant decrease in ATG-S effect size score between time 1 and time 2, while the two treatment groups, the Under 19 and Under 17 maintained a steady state. The control group continued a negative slide through all four time measures, however, both treatment groups increased their scores at time 3, with the under 17 teams effect size increase (ES.51) being considered a significant and large change (Cason & Gillis, 1994; Hattie, et al., 1997). Maintenance of these scores was carried through to time 4, where both groups were
significantly different from the control group when compared, using analysis of variance testing.

The time 1 and time 2 measures were held very early in the season just after team selection. A typical training session at this time of the season had players trialing for a starting spot on the team; this approach required teammates to compete against one another, resulting in a focus that is independent rather than interdependent. Johnson and Johnson, (1975) believe that one of the keys to reaching team interdependence was, rather than requiring group members to compete to see who is the best in the team, group members must work together to achieve mutual goals. When people cooperate, they tend to like each other more, trust each other more and are more candid with each other. Furthermore, they are more willing to listen to, and be influenced by each other. When people compete against each other, then liking, trust, influence, and candor tend to decrease.

Instead of competing against one another during the early part of the season, the Under 17 and Under 19 treatment teams were laying a bonding foundation at their adventure-based training camp. This was designed to be a foundation from which to build a winning team that was interdependent, relying on each team members contribution for success.

These results are supported by Priest, (1995, p.107) who recognised that the adventure-based setting:

..., has been used as a means for enhancing trust and trustworthiness between individuals and among group members by placing them in situations of interdependence. Many adventure activities in which either the actual or the perceived risks are elevated, can enhance participants levels of engagement and their interdependence, thus leading to greater degrees of trusting behaviours.

Similar to the ATG-T remarks in the previous section, questions could be raised about the decline in the control groups scores over time, in turn this may leave doubts about the reliability and validity of the control groups' responses. To counter this suggestion however, it is interesting to note that the significant reduction in effect scores occurred between times one and two. One could surmise that filling out repetitious questionnaires would not be an issue after just one time measure. The steady decline in scores through times two to four were relatively small and insignificant. Because of this, one could support a position that some kind of change had taken place as a result of the intervention that had occurred to the treatment group, as opposed to a decline in the control groups scores.
Finally, one of the unexpected benefits of the adventure-based training intervention was improved coach-player relationships. The coaching staff felt that the close and emotional interaction allowed players to see a more human side to their personality, rather than "the coach" who wielded all the power.

GROUP INTEGRATION-TASK. GI-T

The quantitative and qualitative GI-T results assessed the individual group member's perception about the similarity, closeness, and bonding within the group as a whole around its task. These results were by far the most informative for giving an insight into why both the intervention teams were successful at the national championships. GI-T evolved through three phases during the study: 1) During the adventure-based training weekend; 2) After the adventure-based training weekend back at netball in Sydney; and 3) At the National Championships.

GI-T During The Adventure-Based Training Weekend

Quantitative results indicated that between testing times 2 and 3, the Under 17 team showed an extremely large and significant positive effect size change (ES.82), after the intervention weekend. The control group and Under 19 teams however, showed no change during this time. In fact, analysis of variance testing indicated a significant difference between the Under 17 and Under 19 teams at time 3. This disparity highlighted the different stages of group development within the teams. The Under 17 team came together as a functional team much earlier than the Under 19's. At time 3, the Under 17's could have been considered to be in the "norming" phase of group development. The Under 19's however, were still in the "storming" phase, still trying to sort through conflict and team issues that were inhibiting performance (Tuckman & Jensen's 1977). Weinberg & Gould (1995) cautioned coaches, that teams with underlying conflict caused by cliques, find it difficult to focus on the team task when players are distracted by unresolved issues.

The adventure-based training however, provided opportunities for both teams to benefit. The sequencing and progressively challenging nature of the intervention led to what Priest & Gass, (1994) called a double bind. This is where a set of expectations for the upcoming section of the intervention were negotiated by the group and the facilitator; with these expectations outlined, the activity then commenced. The athletes then had two choices, they could follow the guidelines they had set for themselves, with the post activity discussion focusing on the behaviours that led to their success; or they could choose to carry on with
dysfunctional behaviours, with the teams lack of adherence to their own guidelines becoming painfully obvious in a post activity debrief. During the early part of the intervention, the Under 17 team chose the former option, while the Under 19's chose the latter.

A turning point for the Under 19 team occurred when they opened up and resolved the dysfunctional clique issue within the team. The outdoor environment provided a catalyst for the team to take a risk and air their grievances and then allowed them time to build into a more cohesive team. Despite attempts from the coaching staff, this goal could not be achieved back at the teams' usual training venue.It would appear important that the sequencing of activities as suggested by Bisson (1997) is a critical factor in facilitating groups through Tuckman & Jensen's (1977) group development stages of forming, storming, norming and performing. The storming that took place on the bush-walk at Mt. Carialoo provided a real platform for improved relationships within the team and a stronger focus on the task that the team was formed for, winning a national championship.

The bush-walking, abseiling off cliffs, sleeping under the stars, being woken by bagpipes early in the morning were a sequence of activities that forced the players to overcome discomfort and distractions and focus on the team task. The caving part of the adventure training weekend was about building the team up, and teaching the players that in order to win a national championship, they had to all work together to achieve their task goals. It was clear that the caving was a powerful catalyst in the teams journey to their national championship wins and that skills learnt whilst caving were beneficial in overcoming the pressures of competition. The team chant (See Figure 29) was developed while underground when caving but utilised during netball to reaffirm the teams goals around achieving their task.
Armed with a new team harmony and the breaking down of cliques, the teams returned to training in Sydney with a fresh approach and new enthusiasm towards their nationals campaign.

GI-T After The Adventure-Based Training Weekend
The adventure-based training weekend was a catalyst that set off a reaction within both NSW teams. They developed a hunger and enthusiasm that was not present prior to the intervention. The learning and lessons from a highly emotional training intervention, often requires time for participants to reflect on the relevance of the experience. Both coaches and players were on emotional highs in the weeks after the intervention weekend as the lessons of the adventure weekend began to sink in. Player and coach testimony would equate this time as a transition into Tuckman & Jensen's (1977) third stage of group development, norming.

This change in task focus was not only felt by those that attended the training camp but also verified (and triangulated) by team management staff who did not attend the adventure-based training weekend, but who attended all the netball training and practice lead up games. The manager and team-physiotherapist noted a major shift in the players attitudes toward each other and their task of winning the national championships. The emotion and focus that began during the ABT weekend carried through right up until the national championships.
This highly motivated task focus was seen in the quantitative results between time 3 and time 4. The major turn around was seen in the Under 19's (ES.94), which demonstrated a highly significant change and shift in team focus when compared to earlier in the intervention. Analysis of variance results also indicated a significant difference between the control group and the Under 17 team, which showed maintenance of their high task focus right up until the national championships.

**GI-T at the National Championships**

One of the litmus tests of a training interventions success is whether learning was transferred to real life situations outside the training venue, in this case netball competition. The highly significant GI-T quantitative results, along with the rich description highlighting the teams coming together around task issues, was clearly transferred to the netball court. While many variables came together to make up a championship winning side, there are strong indications from the data to suggest that during the heat of competition, when the pressures were extreme, the skills which the players had developed to maintain a task focus were instrumental in lifting them to new performance levels. This led to the Under 17 and Under 19 teams triumphing under conditions that have seen many other teams in the past choke under the pressure of a close match.

During the two previous national championships prior to this study, the New South Wales state teams were expected to dominate and win; players were regarded as elite and highly competitive. The teams' past control under pressure was one aspect of performance that had really let the team down in previous years. To their credit, the coaching staff had recognised these weaknesses and initiated a program to address these limitations. From the strong athlete testimony, it was apparent that the players' were extremely focused on their task of performing to their best, and as a result fought tremendously hard right to the end of each game. This determination was instrumental in both teams reaching the finals.

The control group however, appeared to lack the same fighting spirit that was evident in both NSW teams. They lost several matches that could have gone their way but made mistakes at crucial times that prevented them from making the playoffs.

Inter-team cohesion was also strengthened because of the adventure-training experience that both teams shared; this manifested itself on the sidelines during the national championships. Players from each team ensured they were at each others game to lend support. This vocal and visual encouragement enhanced the supportive atmosphere of the NSW teams.
Ceiling Effect

The significance of the quantitative results in the three subscales discussed earlier, was somewhat unexpected when first analysing the descriptive statistics. This was due to the large ceiling effect in the data across all of these three subscales. A ceiling effect is where participants scored high results during their initial data collection times, leaving very little room for recording any change that might result from the intervention during later data collection. Because of this trend, any significant results in these variables can be considered a strong indication that an effect has occurred (Neill, in press). This factor may have prevented further significant results for the under 19 team, who initially scored very highly on the GEQ, but then had no room left to show improvements in the latter data collection points.

GROUP INTEGRATION-SOCIAL. GI-S

GI-S was concerned with measuring the individual group member’s perception about the similarity, closeness, and bonding within the group as a whole around social aspects. The qualitative results painted a picture of a team that had opportunities during the adventure training camp, to get to know each other outside of netball, solve problem issues that were inhibiting performance, and reshaping relationships for the better of the team. GI-S developed over two stages: 1) During the adventure-based training weekend; and 2) After the adventure-based training weekend.

GI-S During The Adventure-Based Training Weekend

A new and novel setting away from the familiarity of “normal” daily routines, has been documented as one of the antecedents for change in an adventure-based programming setting (Gass & Priest, 1997). This change in environment was instrumental in bringing the team closer together as a social group in this present study.

Simply being out in the wilderness environment can be a mechanism for change, providing opportunities to communicate in ways that somehow, never seem to surface back in the hustle and bustle of regular city life. One particular occasion during the intervention which appeared to be a turning point for the Under 19 team, occurred while at the summit of Mt Carialoo looking out over the vast expanse of Morton National Park.

This exchange and the resulting discussion was like a safety valve going off, with the potential explosion being replaced by constructive discussion, which came up with solutions to the teams difficulties. Handley (1993, p.3), an exponent of the power of wilderness in changing
people, supports the concept of taking individuals away from their usual environment in an attempt to find out who they really are:

The wilderness experience is a journey into the unknown where people meet nature as a stranger in kind but a friend in spirit: an experience of risk, of self reliance, of freedom to both fail and succeed, and an opportunity to see ourselves as ourselves, stripped of other world facades and facing the wilderness within.

New and novel experiences that were shared by all members of the teams were a basis for increased bonding opportunities around social issues, despite the hardship and discomfort involved. Having to shower in the bush using a tin of water as a shower, or sleeping as a team together under the stars, when everyone thought they were sleeping in tents, all provided a shared experience that bought the teams closer.

During the ATG-S discussion earlier in this chapter, one of the coaches outlined how her relationship with the players' changed because she shared challenging experiences with them. These emotions were reciprocated by players after the caving experience. Tears of support ran down the faces of team members as they hugged after having achieved what initially appeared to be an impossible task. The shared goal of having to work together as a complete team was a very powerful experience for all involved. Everyone was important, no matter their role within the team. If they did not work together while caving, nobody would have got out of the cave. This metaphor was extremely powerful for all team members.

In attempting to define how experiences like caving can change people, Potter (1992, p.93) postulated that, “it is this unpredictability and loss of convenience and control that form new physical and subsequently emotional and social realities for the participants”.

**GI-S after the Adventure-Based Training Weekend**

The bonding and closeness around social issues that developed during the training weekend benefited the team back at netball training and competition. The friction and tension in the Under 19 team was no longer evident. Prior to the intervention weekend, some players were quite harsh with put downs towards players who made mistakes on court; this caused tension and often carried over to strain relationships off the court. However, after returning to training, remaining focused on the positives became the norm.

It could be, that the disharmony within the Under 19 team may never have been resolved if the players did not get the opportunity to explore their differences in a neutral environment
away from netball. Walsh & Gollins (1976) suggest that the contrast provided by an unfamiliar environment can enable participants to gain new perspectives on the familiar environments from which they came.

Finding extra effort for teammates was instrumental in both NSW. teams come from behind victories at the nationals. It appeared that having shared common hardships together may have provided some of the motivation for the "never say die attitude” that both teams possessed.

GI-S Quantitative Results
Despite the qualitative evidence outlined above, statistical analysis of the quantitative data failed to identify any interaction or change within any of the groups at any time measure. In addition, team average results for the GI-S subscale were considerably lower, when compared to the other three scales of team cohesion.

The researcher has hypothesised that internal validity may have been compromised in the measurement of this variable, due to problems with the wording of questions within the instrument. It appears that the questioning did not take into account the unique composition of the sporting teams being studied.

The NSW netball teams were made up of players who resided in many different areas of the state; commuting during the week to train and play at the state level. Because of this unique arrangement, players could not physically socialise with each other outside of netball. The GEQ instrument however, attempted to assess GI-S through questions that focused on socialising outside of netball. The following questions from the instrument highlights this predicament:

Q11: Members of our team would rather go out on their own than get together as a team.
Q13: Our team members rarely party together.
Q15: Our team would like to spend time together in the off-season.
Q17: Members of our team do not stick together outside of practices and games.

Despite briefing the players about these concerns, and asking them to answer the questions as if geographic constraints were not a factor, the researcher still received many statements from players expressing frustration at having to answer questions that were not applicable to their situation; this indicating problems with the instrument. Because of these obvious
limitations, strong support should be given to Meyer (2000, p.1255) who appealed for "the validity of the Group Environment Questionnaire to be examined and thought given to development of a course-specific assessment tool for group cohesion". Those taking up this challenge should try to develop social scale questions that are more applicable to sport and the adventure setting, rather than socialisation issues outside of sport.

Effect Size Scoring and Future Research

Studying intact sporting teams that normally have a small number of subjects making up treatment and control groups, leaves researchers wishing to conduct quantitative statistical analysis with a distinct disadvantage. Neill (in press) noted that many adventure education studies lacked power because of the small number of participants involved in many research projects; he defined power as the probability of correctly detecting a real statistical effect. Neill then criticised current statistical practice stating that:

Traditionally (and inappropriately!) most researchers focus solely on controlling the Type I error rate, comforting themselves that on only 5% (.05) of occasions when there is no real effect will they falsely conclude that there is an effect. Remarkably, many fail to consider the study's probability of a Type II error. A Type II error is falsely concluding no effect when there is an effect.

This could mean that studies conducting statistical analysis with groups utilising small subject numbers may be declaring no effect, when in actual fact the insignificant result was a function of a type II error, caused by a lack of power. Because of this statistical anomaly, Neill (in press) recommended the use of effect scores to present results, as it gave a variety of benefits over reporting traditional statistics, the benefits included the following:

• Effect Scores can demonstrate how much change occurred for a particular variable.

• Effect scores give information about whether an effect is a move in a positive or negative direction, not just whether an effect is significant or non-significant.

• Effect scores are measure on a proportional scale. This allows one to weigh up the relative impacts of a program on different sorts of outcomes. In other words, a large ES of .6 represents twice as much change as an average ES of .3.

• Since effect scores are measured on a standardised scale, results from different outdoor education studies can be readily compared. In addition, outdoor education results can be compared to other
Neill's effect score concepts discussed above can provide a benchmark for any further research that may stem from this investigation. Those replicating or attempting to build on the findings of this research, now have a concrete statistical result with which to compare and contrast conclusions from future studies.

**Maintenance of Team Cohesion**

Vealey (1994) in her evaluation of past research in sport psychology identified a lack of data examining the maintenance of treatment effects over time. She believed this was particularly important:

> Due to the educational approach of psychological skills training in which the objective is to teach mental skills that become well learned and implemented into the psycho-behavioural routines of athletes...It seems critical that we begin to evaluate the effects of our intervention for a period of time after the initial treatment (p.499).

The maintenance or increase in team cohesion scores in this present study, were in contrast to Meyer & Wenger (1998) who found an inverse relationship between the transfer of team cohesion concepts learned during an adventure-based intervention and time since the actual experience. Participants in their study were able to report fewer instances of real world application of learning at the three-month follow up, and fewer after 9 months.

The importance of transferring the learning from the adventure experience back to netball was one of the key goals of this intervention, however, the learning had to be maintained for several months until the national championships. Several initiatives were undertaken ensuring this occurred; this based on the recommendations of Meyer & Wenger (1998 p.263), who suggested that, “future researchers should utilize post program activities and discussions that may reinforce important ideas”. Appendix 7 displays a psychological skills workbook based on work by Orlick (1986), which was utilised to refine and focus the learning that had resulted from the adventure-based training weekend and direct it to mental preparation for the national championships. Time was set-aside at the end of each training session to work through sections of the book, so that by the nationals, all sections were covered.

One of the real successes of the adventure-training weekend was the debriefing sharing circle, which was used regularly as a means for teams to communicate safely and productively about issues that arose during the adventure training weekend. Taking the time to talk and
troubleshoot problems was instrumental in facilitating change and growth within the teams. It also played a major role in helping players reset their task focus, which was wayward during the early stages of the season. This sharing circle was convened by the coaching staff at the conclusion of most training sessions back in Sydney, where continued dialogue about team issues and concerns was conducted. It was also a forum for discussing and completing the psychological skills workbook, and was a place where team tactics and strategies were discussed and outlined. These connections with the adventure-training weekend, helped to maintain the learning and enthusiasm that began during the adventures in Kangaroo Valley.

**Does Cohesion Lead to Performance, or Performance Lead to Cohesion?**

The question as to whether performance leads to cohesion, or cohesion leads to performance has been a question that has puzzled researchers for some time. Carron & Ball (1997) determined that having a high cohesion at the start of the season did not necessarily lead to high performance at the end of the season. Conversely, they did find that the teams, who performed well at the beginning of the season, had higher cohesion at the end. Subsequent research suggested that the performance-cohesion relationship was circular where performance affected cohesion, then the changes in cohesion affected subsequent performance (Landers, Wilkinson, Hatfield, & Barber, 1982). While this study did not set out to directly address this question, the results may add some impetus to the debate.

At the beginning of the season, cohesion, especially from the coaches’ and athletes’ perspective was at a moderate to low level, with major problems evident in the Under 19 team. During this early stage of team development, performance during trial games was well below expectation, thus early performance can be ruled out as a cause for the latter increases in cohesion.

While the under 17 and under 19 NSW teams differed in cohesion profiles on their journey to the national championships, it was clear from the results that something significant occurred to the athletes prior to the national championships. This was best articulated in the players’ accounts of the intervention and its impact on netball training and competition, it was also reflected in the effect score figures in the results section. Of most interest are the remarkable task cohesion improvements for the treatment groups. Gains in the ATG-T subscale of are classified as large to very large and significant scores. While the GI-T subscale scores are gains rarely achieved in the adventure training field. This could be considered a
strong indication of a major shift in task cohesion by both teams in the lead up to nationals (Hattie et al, 1997).

What is clear from the triangulation of both the quantitative effect score results at the fourth time measure right before the nationals and the qualitative data is that task cohesion results had improved significantly compared to the early part of the season. It appears that the teams developed through the stages of group development at different rates. Shortly after this fourth time measure, both teams were playing their best netball at the national championships and functioning in the most cohesive manner compared to any other time during the intervention. While these results could be explained by maturational factors, such as increased fitness and skill levels as well as excellent coaching, the qualitative data suggested that when the teams were under extreme pressure, having high task focused team cohesion made the difference between winning and losing. With this result, it is strongly postulated that in this particular study, increased team cohesion especially around task issues, was one of the factors that combined to enhance team performance.

Given the above argument, one could also put forward a case that teams can differ in cohesion during the preparation phase of a season. Coaches however should strive to address any weaknesses in this area in order to ensure gains from being task focused can be translated into performance gains during the all important competition phase of the season.

Team Cohesion Conclusion

After tying the pieces of the cohesion data together, it becomes apparent that something unique occurred to the teams that participated in the adventure-based intervention. Phenomenological accounts of the intervention experience, unmistakably built a picture of two teams rallying together around their goals and achieving them. This winning of the national championships by both teams was no fluke; it was a well thought out tactical strategy which the coaching staff of the NSW teams operationalised many months before the teams were even selected. It is however, an example of what a team can do, if all of its members are “pulling” in the same direction. The adventure-based intervention greatly assisted the coaching staff in building the teams into a cohesive unit and certainly made a difference to the NSW teams, when one compares their changes to the other interstate team, who acted as a control group during this study.

It is important to point out that an adventure-based training weekend cannot take the place of the hard physical and tactical training that goes into a winning athletic performance; both
NSW teams underwent extremely intensive training between the intervention and the national championships. However, when all else is equal between two teams of similar ability, the mental and team skills learnt during an adventure training experience, as the results of this study indicate, can really be the difference between winning and losing (Orlick, 1986).

**IMPROVED ON COURT PERFORMANCE**

Another of the problems that this research project set out to address came from the researchers work with junior athletes. Upon their return from specialised sport training camps, these athletes expressed disappointment at the sport psychology skills learning process they underwent. In an attempt to explore other opportunities for delivering sport psychology principles this research project set about determining whether experiential based methodologies provided a valid method of teaching sport psychology skills. If successful, it might provide an alternative teaching method for the sometimes inappropriate chalk and talk approach that many athletes have endured during non-experiential sport psychology lectures.

The ability to apply psychological skills whilst under high-pressure game situations clearly benefited athletes in this study. Analysis of interviews and observations suggested that this experiential adventure-based training program, enhanced the development of mental skills and these were clearly transferable and beneficial to athletes in their on court performance. Results indicated that athletes and coaching staff learnt how to concentrate more effectively, control anxiety levels that inhibited performance and increased their confidence levels. Collectively these skills led to individual and ultimately better team performance during the nationals. The under 19 coach felt that her team had completed a total turn around in their mental thought processes, when compared to previous years where they struggled under the pressure of close competition.

The development and learning of these skills however, had their genesis during the adventure-training weekend. Activities were designed and sequenced to provide opportunities to develop self-awareness of body and mind, self-monitoring to ensure ideal cognitive and somatic states and self-regulation of mental skills, so that the ideal performance state was found; this progression was based on the teaching theories of Murphy & Tammen (1998). With this theme, it was hoped that athletes would get to experience first hand, how the lack of mental skills could inhibit performance, but as the training weekend progressed, realise how monitoring and regulating one's cognitive and somatic processes could actually enhance performance enormously.
This process was repeated during most activities throughout the weekend with a similar sequence being followed. When athletes found themselves under pressure and self-monitoring signaled a less than ideal mental or physical state, athletes were encouraged to try out their newly acquired mental skills. This was encouraged back at training after the intervention and through the regular use of the psychological skills workbook.

Interview data indicated that the caving experience had the most impact and relevance to psychological skills development among players. The most compelling example of transfer of psychological skills from the adventure setting to netball remains with the goal shooter from the Under 19 team. Her story demonstrated how the isomorphic metaphor of the caving experience was transferred to the pressure cooker situation of shooting a goal to get her team into the national championship final. Solving the caving induced pressures of the “squeeze”, was in reality, laying the foundations for handling the pressures of netball competition.

These accounts of players under enormous cognitive stress and using techniques to moderate the physical pressures of performance, lend support to the “catastrophe model” of anxiety and performance (Fazey and Hardy, 1988). This model proposes that anxiety can have either a facilitating or a debilitating effect upon performance, depending on the physiological arousal being experienced by the performer. While investigating the catastrophe model, Edwards & Hardy (1996) examined elite netball players for the intensity and direction of competitive state anxiety symptoms, and the interactive influences of anxiety subcomponents. Results demonstrated that higher levels of cognitive anxiety had a detrimental effect upon netballers’ performances when they were physiologically aroused, but had a beneficial effect when they were not physiologically aroused. Taken together, these results indicated that cognitive anxiety intensity could sometimes exert a beneficial effect upon performance, depending on the level of physiological arousal (Hardy & Parfitt, 1991). The goal shooter’s story highlighted in the results section, clearly describes how she was under cognitive pressure and had major somatic anxiety symptoms. She however, bought her somatic symptoms under control, yet still performed well under the cognitive pressure of having to sink a goal that determined her team’s fate. Similar accounts of players abseiling and caving had the same outcome.

With the ability to concentrate under pressure and control anxiety levels, players were free to focus more on their game and less on the things that were once distracting them. This led to new levels of confidence and a willingness to push things to the limit. These findings were
triangulated by coaching staff who observed team members performing as a team like they had never seen before. These lessons again had their origins during the adventure-training weekend.

Improved On Court Performance Conclusion

Often in today's modern sporting arenas, teams face each other in the heat of competition with very little separating their physical or tactical preparation. The winner on the day, is the team that has the mental disposition to work as a cohesive unit and the ability to block out the distractions that can inhibit performance (Williams, 1986). In evaluating the qualitative research outcome questions, the phenomenological evidence clearly demonstrated that athletes and coaching staff developed new psychological skills during the adventure experience which led to personal and team change. This learning was transferred to the netball court and was an important and integral part in the teams winning their respective national championships.

CHANGES OUTSIDE OF NETBALL

One of the unexpected outcomes of the study was the impact the intervention had on individuals outside of netball. The Under 17 coach had a life changing experience, which she felt could help her overcome weaknesses outside of netball:

[Under 17 coach] During caving, I wanted to turn the light on when we were trying to get out of the cave with lights out. I was so scared. I felt I had no control whatsoever over my body, my thinking, I could not get it together. I got more out of this training than just things to do with netball. I was so emotional for days after this weekend. I would just keep breaking down in tears. I am someone who has always been able to do anything I tried, needing no help from others. Outside netball, I always try to take too much on. To get out of the cave I had to let go of the control I usually have, and rely on others to help me. This has taught me to ask for help, and that asking for help is okay. I'll tell you, that weekend has just had a major impact on me, I tell everyone I come across about it, but they just don't seem to understand how powerful it was for all of us.

Probably the “athletes story” that captured the researchers attention the most, was one that finished with a quote that had nothing to do with answering any of the research questions. It however, epitomises the power of adventure-based training and answers the call by Duda (1997), who promoted the belief that psychological skills training should really concentrate on building esteem in athletes, by focusing on the whole person and not just sport specific training. This Under 17 athlete summed up her experience with the following:

“Not only did the weekend teach us how to be good netballers, it taught us how
"to be the best at life".

THE PROCESS OF ADVENTURE-BASED TRAINING

Much of the research into adventure-based training has been focused on the beneficial outcomes emanating from programs, rather than how the outcomes were achieved. Anderson (1994, p1) stated that, "it is necessary to understand the process variables that are creating change, so that optimal benefits can be derived from the adventure experience". These sentiments were shared by Meyer and Wenger (1998) who noted that "there has been a call among adventure education researchers and practitioners to move beyond descriptive outcome focused studies, toward an understanding of the processes which lead to positive outcomes". When examining the adventure-based training process, they believed researchers should facilitate:

1. An understanding of the inner workings of such programs.
2. The identification of variables and elements related to the success or failure of these programs.
3. The identification of positive elements or procedures that should be continued in future programs (p.244).

This section of the chapter will address the above questions in a framework that will give special attention to Meyer & Wenger's (1998, p.263) observation that, "Lewin's change theory as a theoretical explanation for the process through which adventure education outcomes are achieved, needs to be investigated more thoroughly". Lewin's framework of unfreezing, moving and re-freezing, will be used to structure the following sections. This theoretical framework and its structure however, were too simplistic and general to adequately explain all the outcomes of this present intervention. Further theoretical explanation will be highlighted throughout the discussion, to detail other important theories and processes and how they impacted on the outcomes of this study.

Unfreezing

Unfreezing involves a motivation or desire to change, which is typically prompted by feelings of inadequacy or failure, threats to self-esteem, or general feelings of turmoil. The individual believes that through change, these feelings of inadequacy and failure will cease to exist, therefore they are ready and motivated to change (Lewin, 1965 cited in Meyer, 1998, p.245).
The athletes who received the adventure-based training intervention clearly underwent the unfreezing stage.

From an early needs analysis held in conjunction with the coaching staff, it became apparent that the athletes had issues that were negatively impacting on their development and performance. These appeared to be symptomatic of the forming and storming phases groups progress through after they initially come together (Tuckman & Jensen, 1977).

To address these concerns, it was felt that the teams needed an experience outside of netball that would initially highlight the teams dysfunction, but then go on to provide tools to build the group into a more functional unit. To do this, a sequence of activities was designed that gradually and sequentially increased levels of difficulty and thus the accompanying stress levels that are required to facilitate change (Nadler & Luckner, 1993). The teams’ stage of group development (Tuckman & Jensen, 1977) was matched to a corresponding activity sequence based on the work of Bisson (1998).

Activities like climbing, abseiling and the giant swing, were initially selected on the Friday night of the intervention, to ensure athletes were constantly challenged to maintain concentration levels that were task focused. This however, was extremely difficult for many in the team because of the new and novel nature of the activities, the perceived risk, and the uncertain outcome which led to a heightened level of stress. Ewert (1989) postulated that this combination of factors often leads to learning and change in individuals.

The disequilibrium caused by these indoor activities were also evident while abseiling off Mt. Carialoo and during the caving experience. The variety of challenging unfamiliar environments and activities kept athletes off balance, causing them to experience a state of disequilibrium. According to Nadler (1993, p.61), this creates a, “constructive level of anxiety, a sense of the unknown, and a perception of risk”. It is by overcoming this disequilibrium, through the mastery of the tasks presented by the environment, that participants are believed to experience positive benefits.

In order to gain this mastery, the stress caused by the environment and the constant disequilibrium, required athletes to examine their existing levels of mental preparedness by undertaking what Bacon (1983) coined as a transderivational search. A transderivational search is essentially the process of searching back through one’s stored memories and mental representations, to find the personal reference experiences from which a current
An understanding or mental map has been derived. If one does not have experiences in their past to help make meaning of their new experience, one then has to initiate fresh transderivational searches, which in turn reorder their concrete memories into a new alignment. This ability to learn a new strategy by reordering and reorganising concrete memories, is the fundamental process and the active ingredient in traditional psychotherapy and education (Bacon, 1983).

After these experiences of disequilibrium, an awareness developed amongst the group pointing to the fact that they were not yet fully equipped with the mental skills to adequately meet the challenges of high-pressure adventure activities, and thus metaphorically, the pressures of national netball competition. This void in their athletic repertoire was one "unfreezing" motivation to instigate change within the team. Players soon realised that there was more to this adventure weekend than just playing in the outdoors. It required them to acknowledge weakness and develop new skills, which ultimately would strengthen their psychological inventory in readiness for the heat of competition.

Choosing activities and an environment that created disequilibrium in the athletes was of great importance in this intervention. The wilderness environment was new and novel to most participants, especially the context it was used in this intervention. Having athletes away from their usual training and playing environment was perhaps one of the most crucial choices during the planning stages of the intervention. This finding is supported through previous research by Robinson and Stevens (1990, p.230) who also found that "novelty was the dominant stressor throughout the expedition, with participants continually adjusting to the remote wilderness setting".

In contrast to this present investigation, and Robinson and Stevens (1990) above study, Prapavessis et al (1996) conducted a team-building program with elite soccer players at the teams regular training venue. The coaches of these soccer teams were up-skilled in the enhancement of team cohesion, and then a training intervention was conducted. The team receiving the intervention was compared with several control groups. Despite the up-skilling of coaches, no significant improvement in team cohesion was seen in the group that received the team-building intervention. One might hypothesise that the intervention lacked an important set of criteria that has been shown to elicit change. That is, a new and novel setting that takes players out of their usual comfort zone, causing stress and disequilibrium and leaving the outcomes of the session somewhat uncertain. It would be interesting to
investigate what the outcomes of Prapavessis et al study might have been, if it was implemented in an experiential adventure setting with the above criteria included in the methodology.

The benefit of being in a new and novel setting was especially evident however, for the Under 19 team meeting on the cliff edge of Mt. Carialoo. Quite clearly, this ended up being a major turning point for the team. With the dramatic eighty-metre cliff face next to them and some of the most amazing views to inspire, players were given mini solo time where they individually pondered and reflected on the team’s predicaments. After the solo, the teams came back together and were stirred to delve into the deep issues that had divided the team. With the close of this discussion approaching, one of the players who was regarded as one of the “ringleaders” of the Under 19 clique, asked in a frustrated tone: “Why did we have to come all the way up here to talk about this stuff?” At which time one of the new recruits to the team retorted, “Well just look at what had been happening back at training, we have been getting nowhere”. This exchange and the resulting air of relief within the team that their problems had finally surfaced and been aired, was an illustration of how the environment was instrumental in the “unfreezing” process and readied the players for “moving” toward more functional behaviour.

The question as to why it took a trip to the wilderness to clear up these underlying negative issues can be best summarised by the following. Robinson (1983) posits that, “adventure participants tend to engage in a positive mode of communication that is of a very different nature than everyday life”. While Kimball & Bacon (1993) support the power of the environment stating, “the wilderness is thought to encourage self-awareness and self-responsibility by providing rules in the form of natural consequences which participants are unlikely to discount as being unfair or inappropriate”. These kinds of experiences are not readily available back at a familiar netball training session, which is the normal forum for problem solving around team issues.

Facilitation during the Unfreezing Phase

One issue that became evident when contrasting Lewin’s change theory to the processes of this investigation, was that Lewin’s model did not indicate the importance of a “change agent” during the unfreezing process. In this present investigation, a “change agent” or facilitator had a critical role in planning, structuring, framing and facilitating the learning experience, so that strong isomorphic links could be made between the outdoor environment
and netball. Without the facilitator's guiding influence, the training intervention becomes little more than a recreational experience (Priest, 1995). The importance of the facilitators role was very apparent when analysing data to answer one of the qualitative research questions. “How did this camp differ (if at all) from previous adventure-based training camps, which the athletes had been on in the past?”

Some of the Under 19 team, along with their coaching staff had, during the previous season attended another adventure training program with a different course provider. These individuals were asked to compare and contrast the two experiences so that elements that impacted favourably or unfavourably on the athletes, could be used in future program design to assist the unfreezing process. Analysis of this data identified a lack of leadership from the facilitators conducting the previous years program. It also illustrated how two similar programs, with identical objectives can differ in outcome if the facilitation of the program is inadequate or pitched at a level that does not meet the needs of the client group.

Priest, Gass & Gillis (2000, p.33) emphasised that, “the effectiveness of a learning experience depends heavily on the quality of its facilitation...facilitation becomes everything done before, during, and after learning experiences that enhance the reflection, integration, and continuation of change.”

This concept of quality facilitation has major implications for anyone that is attempting to foster quality teaching and learning in their field of endeavour, whether it is adventure education or sport psychology. In this research project, chalk-and-talk sport psychology delivery is criticized. Likewise, as mentioned earlier, this project had its genesis from the Under 19 netball coaching staff reporting their major dissatisfaction with an adventure training experience prior to their involvement in this study. Was the lack of facilitation expertise the problem in both cases? In the case of the adventure example, evidence would seem to suggest that it was. From the results of this study, perhaps one of the key findings that need further exploration is the identification of facilitator traits that enhance the learning and change process.

In order to ensure this present investigation met the needs of the netball teams involved, facilitation during the unfreezing stage required the facilitators to ensure the correct selection of activities, in the proper location, with the right balance of teaching and facilitation. To guide this process a combined model which integrated ideas from Mace and Carroll (1985) stress inoculation training program (SIT) was combined with Murphy & Tammen's (1998)
three-step model for teaching psychological skills. Activities required careful facilitation to assure adequate opportunities were available for athletes to develop and rehearse their “self-awareness, self-monitoring and self-regulation skills” (Murphy & Tammen 1998, p.198). If the facilitators had not worked on developing these skills with the athletes, it would have been likely that this intervention would have been similar to the previous years, where athletes had a fun time abseiling, climbing, bush-walking and caving, but obtained little out of the experience to help them in their sporting endeavours.

Overall, several mediating factors interacted, which led to athletes wanting to change to become a more cohesive team; and more proficient users of psychological skills. The sequencing of activities with their progressive increase in stress levels, combined with a new and novel environmental setting, assisted athletes in recognising that they were not functioning to their full potential, and that their mental skills were inadequate for elite sporting competition. With this awareness, athletes were ready to try new ideas and develop around the goal of being at their best by the national championships. In the next section, the adventure-based training process will be further examined to identify how the athletes progressed from the unfreezing phase to the moving phase.

Moving

Moving requires “new behaviours, responses and problem solving approaches to be developed in an attempt to replace those that are causing the abovementioned stress (during the unfreezing stage). Through identification with knowledgeable and respected others (i.e: change agents), an individual cognitively redefines the situation and continues the process of assimilating new ego enhancing, equilibrium-producing beliefs and behaviours” (Lewin, 1965 cited in Meyer, 1998, p.245). To gain a greater understanding of how this intervention helped players “move”, the initial discussion will examine and contrast process theory and practice, to give clarity to how the results from this present investigation were obtained. This will then be followed by an overview of the adventure environment, and the facilitators role in helping athletes move and change. It will conclude by making a comparison with Meyer & Wenger's (1998) work.

Meyer (2000) investigated the impact of a one-day ropes course intervention on a tennis team’s group cohesion. She concluded, “That no significant pretest-posttest changes were found for the treatment group on any of the dependent variables and that magnitude of effect scores were low suggest that the design and delivery of these programs for athletes
might be modified” (p.1256). This recommendation provided impetus for this present research project.

To begin with, Meyer’s (2000) methods were compared to Bisson’s (1997) recommendations for sequencing adventure-based training programs. Bisson investigated the effects of varying the sequence of categories of adventure activities on the development of group cohesion (see page 36 of this thesis for a more complete account). He found that his model was effective in developing team cohesion among participants. These findings were supported by Priest, (in press, cited in Bisson, 1997) who conducted similar research in the corporate adventure-training sector. In discussing Priest’s work, Bisson (1998, p.7) stated; “these findings are important because they are the first to support the assumption that the sequencing of adventure activities can have either a positive or detrimental effect on the way adventure program participants develop teamwork skills and attitudes”.

When applying Bisson’s model to Meyer’s work, it can be seen that the tennis team in her intervention only underwent the first three stages of Bisson’s model; these were: Stage 1: Group formation activities, Stage 2: Group challenge activities, and Stage 3: Group support activities. Bisson equated progression through these activities with Tuckman & Jensen’s (1977) group development stages of forming, storming, and norming. Interestingly however, it was outside the scope of Meyer’s brief to take the tennis group to the fourth stage of Bisson’s model, which was group achievement activities. This fourth stage corresponded with Tuckman & Jensen’s “performing” stage of group development.

It could be hypothesised, that by only facilitating their subjects to Bisson’s stage 3 (group support activities), which was equated to “norming”, players only rallied around the major outcomes of this stage, which were psychological support and compassion for the group as a whole. If this was the case, it could explain why Meyer & Wenger (1998) found strong social cohesion results using only this three-stage methodology, since psychological support and compassion from teammates are mainly social issues. By not including the fourth stage of activities in the training intervention, Meyer’s tennis team may not have been exposed to the kind of activities that challenged the group to rally together around a common set task. This may have limited the opportunities for impacting on task cohesion and the “performing” stage of group development.

Another hypothesis for the diverging cohesion results of Meyer & Wenger’s work and this present study might be explained by Cox (1985, p.292) who stated that:
Team cohesion is most effective at facilitating high performance when an interactive as opposed to coactive sport is involved. Coaches in sports such as basketball, volleyball, baseball, soccer, and football need to be more concerned with teams cohesion than coaches of golf, archery, or bowling.

Cox believed that coactive sport like singles tennis, required little team interaction to achieve their goals on court during a match. Weinberg & Gould (1995) supported this position with a view that the results of research tended to suggest positive cohesion-performance relationships were reported more often for sports that were interactive. This would include sports like netball that require extensive coordination and cooperation among team members. This position however, is still not clear-cut, as evidence provided by Power (1991) demonstrated the benefits of swimmers partaking in team cohesion activities in preparation for elite competition. In addition, anecdotal evidence from recent media interviews with elite sporting athletes from the Rider Cup (Golf) and Davis Cup (Tennis) suggested that team cohesion does play a big part in overall team performance in these individual sports. Further research needs to be completed in this area before any unambiguous position can be put forward.

With the above theory of Bisson's in mind, and following Meyer's recommendation that the design and delivery of adventure programs for athletes be modified, it seemed essential to ensure that Bisson's stage four group achievement activities were included in this intervention. This would ensure that athletes were given an opportunity to experiment with the learning from the previous three stages of activities, and allow them an opportunity to feel what it was like to successfully "perform" as a team in a demanding task focused environment.

Caving was chosen as the main stage 4, group achievement activity because of its power to help individuals learn new behaviours, responses, and problem solving strategies (Gabert, 1997). The following theories help explain this process.

While caving, athletes were required to centre attention on a narrow range of concerns, that is the space around them, on problems literally at hand, and only concerned with the present time. Nideffer (1976) described an attention control theory, that applied to caving, required attention to be quickly and efficiently shifted between a narrow internal focus, necessary for the acute kinesthetic awareness of monitoring your bodies response to a claustrophobic situation, and a narrow external focus, necessary for effectively navigating through the immediate surroundings, or monitoring your partner nearby. To accomplish the task of
getting through a cave in control of ones emotions, distracting and broad focused irrelevant concerns, must be screened out from ones cognitive processing.

Scherl (1989) suggested that when an individual is unable to control the outdoor adventure environment in which the activity occurs, (as was the case with caving) the participant is required to shift attention inward in order to confront and control their heightened level of emotional arousal. When athletes can block out the external distractions and focus only on relevant cues, then anxiety can be controlled and performance enhanced.

The flow model of Csikszentmihalyi (1990) adds to this by proposing that the achievement of a balance between the challenges of an activity and the individual's abilities, tends to generate an intense level of concentration, coupled with an absorbing level of task involvement. Such intense affective and cognitive involvement is considered to enhance perceptions of satisfaction with the experience and to generate strong feelings of psychological well being, which together, enhance the potential for an experience to have a lasting effect on the individual (Scherl, 1989).

While balancing the fine line between staying task focused and being distracted by the pressures of caving, athletes were encouraged to continue the self-monitoring of their mental and physical state, and applying the appropriate self-regulation techniques where necessary. The caving environment is unique, in that it is very controlled, yet provides immediate feedback of performance effectiveness, with feelings of control signaling effective performance and correct task strategy, and fear or anxiety signaling poor performance and the need for strategy adjustment (Robinson, 1992). The facilitator of the adventure-based experience has an important role in assisting athletes during this high-pressure type intervention. The following will examine the facilitators role during the moving stage.

Facilitation during the Moving Stage

As was argued during the discussion on unfreezing earlier, the facilitators role as change agent was critically important in the change process. This role was equally important during the moving phase. Bacon (1983) stressed the importance of the facilitator in the change process:

1. The facilitator must understand the covert psychological messages implicit in the typical activities of an adventure course.
2. The facilitator must have the ability to adapt the course activities so that the course metaphors are maximally isomorphic with the needs of the client group.
3. The facilitator needs to master a set of techniques that can help facilitate successful resolutions to the metaphoric challenges.

Creating isomorphic connections and rich metaphors for the athletes, so that their experiences matched issues that they were facing at netball, was a critical component of the moving phase. Athletes had to feel that the skills they were using to solve the problems in the adventure environment would also help them overcome the challenges of a high-pressure netball game.

This isomorphic approach with the use of strong metaphors was one of the fundamental differences when contrasting the work of Meyer & Wenger (1998) and Meyer (2000) and the results of this intervention. Being exploratory investigations, the athletes in Meyer's studies experienced their intervention with no agenda, other than for the athletes to develop generally as a team and for the outcomes of the intervention to be measured. Their ropes course intervention was facilitated with a reactive facilitation approach, where an activity would be conducted and then a debriefing would attempt to help the athletes make meaning of their experience after the fact. This approach, while common practice, is only likely to develop topics around communication, empathy, trust, or personal development issues, but without a direct isomorphic connection back to the sporting environment. This could further explain why Meyer only found social cohesion changes, as the intervention was not framed or structured in a way that addressed task cohesion issues.

In contrast, this present intervention combined proactive facilitation techniques such as metaphoric framing and frontloading, to ensure the links to netball were strong throughout the entire intervention. The use of these techniques are supported by the findings of Doherty (1995) and Priest (1995) who found those receiving higher order facilitation techniques accrued greater benefits, which lasted longer than those receiving general debriefing. The use of these techniques requires much more planning time and forethought from the facilitator, however, in return there is a greater impact on participants learning and transfer.

One other facilitation method that had a powerful impact on helping athletes and coaching staff learn, change and move, was the edgework facilitation technique (Nadler & Luckner, 1993). Edgework had the facilitator in a position to mentor and talk players through difficult and stressful situations. The main purpose was to assist athletes with their self-monitoring and self-regulation of psychological skills. In exposing athletes to intervention scenarios that mirror the stressors of sport, and have an experienced mentor on hand to provide feedback
and strategies to handle these pressures, was a valuable and important part of the learning process.

Edgework facilitation combined with an experiential adventure setting has some major benefits for the sport psychology teaching process and is one area that may benefit program delivery in areas of sport psychology and education. Traditional classroom based lecturing is sometimes void of real life situations where athletes have to actually implement their newly learnt sport psychology techniques. A small group of athletes that this researcher had worked with reported that these sessions are somewhat artificial and as a result, learning and transfer may not have the same impact. Setting up scenarios however, that require the athletes to actually implement what they are learning has benefits for the transfer process, especially when strong isomorphism is present. Likewise, having the facilitator on hand to instruct the athlete in the appropriate self-monitoring or self-regulation technique is a position athletes rarely find themselves in during traditional psychological skills training.

The other major benefit that experiential adventure training could share with sport psychology education, is that the facilitator can become a part of the group process and a trusted confidante of the team. They do everything with the athletes 24 hours per day, often leading by example; this opens up a strong rapport with athletes. The facilitator can be the major difference between learning taking place and a non-educative experience. The following facilitation guidelines by Knottenbelt (2001) are recent recommendations for facilitating effective adventure programs. Interestingly, these guidelines were followed in this investigation, and as the data suggest, was one of the major reasons for the strong learning experience by athletes:

1. A good facilitator must build rapport. Facilitation is about connecting and building a relationship centred on trust and mutual respect. This will take time!
2. You must believe in the group you are working with. They quickly sense whether you are genuine or simply going through the motions. You must exude your passion and belief in people. It is difficult to achieve point one without having point two in your heart.
3. You must strive to be inspirational. By inspiring people, they will reach and go beyond those limitations that restrain each one of us. We can all achieve miracles and dreams way beyond our wildest dreams, it often however, requires the guidance of a teacher or facilitator to unchain us from those limitations.

Applying the above experiential facilitation techniques can have wide-ranging benefits for the teaching and application of both sport psychology and general personal development skills.

239
Future sport psychology training programs might consider the power and benefits of this style of learning assistance as it may be another tool in a coaching repertoire that may be the difference between winning and losing.

Another area where change agents had an impact on athletes was during attempts to set team norms and expectations. During the early part of the adventure-training weekend, clique behaviour often manifested itself in dysfunctional ways. These teachable moments were regularly seized upon by the facilitator or coaching staff. Inappropriate behaviour was bought out into the open and solutions to the problem, especially in relation to expected behaviour at the nationals was outlined.

The efficacy of the team reflection and team discussion session on Mt. Carialoo and moving past the dysfunctional clique behaviour was a result of the facilitator and coaching staff setting up scenarios that would allow players to open up, in a safe and supportive environment. Setting time for a mini solo, posing questions to reflect upon, and then bringing the team back together for a discussion with the spectacular views as the backdrop, was a real catalyst for change within the team.

In contrasting the role of change agents in the moving stage of this study with that of Meyer & Wenger (1998), this project actively involved the facilitator and coaching staff in the change process, by deliberately having them implement techniques and strategies to help the athletes move to behaviours that were more functional. The adult change agents in Meyer & Wenger's study however, had a more passive role. That is, they did not set out to deliberately facilitate change; they attended more for moral support. While this in itself benefited the athletes in their study, their impact may have been more beneficial if all the adults, including the facilitators, worked together toward a “moving” goal, with clear roles and strategies for all to follow. As will be illustrated in the next section, change agents continue to be of importance in the refreezing stage of the change process.

Refreezing

During the refreezing stage new behaviours, responses and approaches are stabilised and integrated into the individual’s repertoire and ultimately their world. Change agents continue to be important in this stage, providing support and reinforcement. They also serve to identify forces that inhibit or facilitate change, so that change can be maintained (Lewin, 1965
cited in Meyer, 1998). The design of this intervention factored in the importance of these issues.

Ultimately, the success of any training program or intervention is dependent upon how participants “transfer” learning back to their real world. Gass (1985, p18) supports this position stating that, “any outdoor programs credibility is based upon the positive effects they have on the participants’ futures”. From an analysis of the data, it was clear that skills from the adventure-training environment were “refrozen” and utilised in netball competition and were instrumental in the team “performing” to its potential. The stabilisation and integration of group cohesion skills were clearly apparent after the intervention during netball training and competition as the following outlines.

**Group Cohesion**

Quantitative statistical results gave a clear picture of the moving and refreezing that occurred in three of the four sub-scales of group cohesion. Of special note were the GI-T results. The extremely large and significant effect size results for the Under 17 team between time 2-3, and the Under 19 team between time 3-4 were characteristic of how the intervention helped athletes rally around the task focus of winning the national championships.

This improved task focus was the result of strengthening many basic systems within the team as the following areas highlight:

The ability of athletes to bury past behaviours and begin treating each other with renewed respect resulted in vastly improved communication channels. On-court support for teammates grew, especially when things were not going to plan. This improved communication, which can be traced back to the team discussion on Mt. Carialoo, resulted in a renewed trust among team members. Rather than opposing cliques, team members developed a bonding that manifested itself on the netball court as commitment and enthusiasm for one another.

Along with developing and improving trust for one another, players really rallied around norming toward team behaviours, which were for the teams benefit. Improved organisation between games at the team hotel, were exactly what the coaching staff were hoping for, especially after tardy time management and lack of enthusiasm raised its head during the intervention. Support from the bench players along with both NSW teams supporting each other after their games was unprecedented during previous national championship.
campaigns. The accumulation of these positive behaviours resulted in teams that were highly cohesive. This trend of enhanced group cohesion, along with the improved psychological skills of athletes resulted in peak performance. The next section looks at the stabilisation and integration of psychological skills during netball competition.

Psychological Skills Development

The ability to integrate the psychological skills learnt during the adventure-training weekend, back into competitive netball situations became apparent in the athletes’ accounts of the national championships. The experiential approach to teaching sport psychology skills during this intervention engaged the athletes in all phases of the learning process in a way that empowered them to be at the centre of their learning, this enhancing their ability to self-monitor and self-regulate their psychological skills in pressure situations. Proudman’s (1992, p. 20) synopsis can be used to explain the power of experiential learning during this type of intervention:

It is a challenging, active, student-centred process that impels students toward opportunities for taking initiative, responsibility and decision making. Experiential education engages the learner emotionally. Students are so immersed in the learning that they are often uninterested in separating themselves from the learning experience. It is real and they are part of it.

This ability for athletes to learn and transfer their newly acquired mental skills from their adventure experience to netball is an extremely important finding and one that those teaching and receiving sport psychology interventions might greatly benefit from in the future.

The improved group cohesion and use of psychological skills, along with the accompanying team success with both teams winning the national championships was a result of sound planning. The coaching staff played major roles as change agents after the intervention, and can be regarded as one of the key facilitating factors in ensuring the learning that began during the adventure weekend, continued to evolve and be transferred to the national championship campaign. The next section outlines the coach’s role in this process.

Coach as Change Agent

Meyer & Wenger (1998) recommended that post-program activities and/or discussions, which may reinforce important ideas, be conducted after the intervention in order to increase long-term transfer. Taking these recommendations on board, the coaching staff took on the role of change agents back at netball training. Several strategies were designed to ensure the learning from the adventure weekend stayed fresh with the athletes.
The sharing circle concept that began on Mt Caraloo became an integral part of regular training after the intervention. Team norms and behaviours were discussed, problems were aired and solutions were sought. The coaches had a major role in ensuring the communication channels remained open.

The sharing circle was also used as a base to integrate and stabilise the team's newly learnt sport psychological skills. During this time, the coach led the athletes through their mental skills workbook. Concepts from this were then worked into on court training sessions and practice games. By the time athletes arrived at the national championships, systems were in place to deal with the pressures of a major tournament.

The evidence from interviews and observations, along with the quantitative cohesion results suggest that refreezing occurred, with learning and changes being integrated and stabilised into the netball game plans of athletes and coaches.

**DELIMITATIONS**

This study was delimited by sample and setting. The sample for this study involved intact netball sporting teams, which by their nature, result in only small numbers of participants in the research project. These teams were not randomly allocated to study groups. Thus, they may not be representative of the normal population. This limitation was partially addressed by the depth with which subjects were studied using multiple methodologies (Cohen & Manion, 1994). The multiple methodologies included; interviewing, observation and quantitative analysis, thus, the study does not attempt to generalise beyond the sample that was included in the investigation. However, it does attempt to generalise findings to the application of practical training situations in adventure-based training and sport psychology.

Another delimitation of the study was that it took place within only one sporting discipline, at one outdoor centre. The NSW Netball team, at The Scots College Outdoor Pursuit Centre in NSW, Australia. Although using only one case, limits the generalisability of the findings of the study to other sports, it does allow for close investigation of a program that is exemplary in providing well-facilitated outdoor adventure-based programming.

**LIMITATIONS**

Limitations of the study included, studying an intact group, the instrumentation, statistical power of the research project, researcher bias, as well as geographical and financial constraints. The following outlines these issues:
One of the real life practical limitations of this study, was that the athletes were studied as intact groups, meaning they had an existing and very regimented set of routines and responsibilities that were timetabled and had to be completed at training, and any time they were together as a team. This left very little time for the researcher to add “extras” onto an already tight timeline the team was functioning under. The researcher could not ethically administer a battery of testing or conduct hours of interviewing, as this would have resulted in a major intrusion into the netball team’s preparation for their national championships. Given this, the methodology was adapted to the circumstances of the participants.

The instrumentation used to assess team cohesion was the Group Environment Questionnaire (GEQ), (Carron, et al, 1985). Statistical regression could have been a problem with the GEQ, where a definite skewness in the data resulted in a ceiling effect at the first data measurement. Cohen and Manion, (1994) stated that, “regression simply means that subjects scoring highest on their pre-test, are likely to score relatively lower on a post-test score”, as there is very little room for them to score higher.

The validity of one of the subscales that measured aspects of social cohesion must also be treated with caution. The NSW netball teams were made up of players who resided in many different areas of the state; commuting during the week to train and play at the state level. Because of this unique arrangement, players could not physically socialise with each other outside of netball. The GEQ instrument however, attempted to assess group social interaction (GI-S) through questions that focused on socialising outside of netball. Despite briefing the players about these concerns, and asking them to answer the questions as if geographic constraints were not a factor, the researcher still received many statements from players expressing frustration at having to answer questions that were not applicable to their situation.

Because this study used triangulation involving multiple data sources, both quantitative and qualitative, the data gathered with the instruments described are not the only data on which to learn answers to the research questions. The qualitative data will help support the validity and reliability of the instruments, or help to understand the extent to which they may not have been valid or reliable.

As mentioned above, the small number (n) of intact subjects in the study made generalisation to other populations a problem. The small n also creates problems with statistical power, when analysing the results of the quantitative data, leading to the risk of type II errors.
occurring. (A type II error is falsely concluding no effect, when there is an effect in your results.) Statistical procedures to control for this problem, along with the use of qualitative data to triangulate against the quantitative findings were used to help control for this threat to internal validity.

Another limitation of the study was the bias of the researcher. As an outdoor experiential educator a real threat to the trustworthiness of this research project was the researcher's bias towards adventure-based training. As stated earlier, he had several negative dealings with traditional sport psychology delivery techniques. After working as an adventure-based facilitator for fifteen years, the researcher's views were tainted with the positive success adventure programs have had on the lives of participants'. This issue of bias was addressed by using multiple methodologies (both qualitative and quantitative), by triangulating with program facilitators, team members, coaches and managers and by having an outside research group independently oversee the qualitative data interpretation process.

Personal bias was explored through what Dale, (1996) called bracketing. This involved the formation of a small research group to analyse interview transcripts. Interviews were read out amongst the group, with the interpretation of the data being explored by those present. Meaning from the transcripts, had to come from supporting evidence presented in the data, and not the researchers interpretation. After several of these had been completed by the group, the researcher completed the remainder. Despite the actions taken to reduce the effects of bias in the study, the researcher’s perceptions, values, and experiences were a part of this study and were central to the process of answering the questions raised. According to Martens (1987), the knower or scientist has a central place in the process of knowing, and the experiential knowledge they bring to the research process is key to answering the questions.

A final constraint in conducting the research was the geographical distance between the control and treatment groups; the control group was located over one thousand kilometres from the researcher's home base. Financial constraints and full time work commitments limited the monitoring of the control group to phone calls with the coach, written detailed instructions for the administration of the team-cohesion questionnaire, and informal conversational interviews with control group players and coaches at the national championships.

The lack of a researcher presence during the four control group data collection points may have led to validity concerns. When a researcher attends a data collection session, it is
possible to “sell” the importance of the repetitious data collection procedure to subjects. Informal conversational interviews at the national championships suggested that control group players lacked motivation and interest in completing questionnaires during the later two data collection points. Burns (1994, p.364) suggested that, “we can assume more valid responses from individuals who are interested in the topic and/or are informed about it”. While the coach of the control group was trained and provided with information for administering the questionnaires, questions remain as to how effectively this was completed.

CONCLUSION

Overall, the results of this study add to the growing body of literature (Chu, et al, in press; Meyer, 2000; Meyer & Wenger 1998; Allain, 1996; Hastie 1989) that support adventure-based training as an effective and highly valid method of developing team-cohesion and psychological skills in athletes. The adventure-based training intervention with its four-stage sequence of activities (Bisson, 1997) along with the Murphy & Tamen’s (1998) three-step process for teaching sport psychological skills, were adapted for use in an experiential setting in a way that had a major impact on athletes and coaches back in their sporting environment. While many factors go into winning a national championship, the evidence from athletes and coaches indicate that the learning from the adventure-based training intervention played a major part in both teams taking out their respective national championships.

In these days of modern sport science where athletes are facing each other in competition with very little separating their fitness or skill level, coaches could do well in ensuring psychological skill development and team cohesion are developed and at their optimum. Adventure-based training in this investigation has been shown as a powerful medium to affect this process.

Meyer & Wenger (1998, p.262) described Lewin’s change theory as “a deliberate three-step process involving the stages of unfreezing, moving and refreezing” and that the observation and interview data from their study was clearly explained by this theory. One of their recommendations was that Lewin’s change theory needed to be investigated more thoroughly. This was addressed as part of this investigation.

In applying Lewin’s change theory to this investigation, it appeared adequate to explain the process through which the outcomes were achieved, however, the data from this study suggested that Lewin’s model could be improved upon. The following summarises this point.
The latter two stages of Lewin's model emphasised the role of change agents in helping athletes move to behaviours that were more functional; observations and interviews strongly supported this position. The data however, also indicated the importance of change agents during the initial unfreezing stage; this contrasts with Lewin's model, which fails to identify the importance of this symbiotic relationship at such a crucial time in the change process. Lewin (1965 cited in Meyer, 1998, p.245) describe unfreezing as:

A motivation or desire to change, which is typically prompted by feelings of inadequacy or failure, threats to self-esteem, or general feelings of turmoil. The individual believes that through change, these feelings of inadequacy and failure will cease to exist, therefore they are ready and motivated to change.

The facilitator (as change agent) can have a major impact on the unfreezing process during the early stages of an adventure-based training program. Their role in planning, structuring, framing, and facilitating the learning experience so that strong isomorphic links are made between the outdoor environment and the sporting environment are crucial. This involvement strongly impacts on the participants' feelings of inadequacy or failure, threats to self-esteem, or general feelings of turmoil and their motivation to change. Without the facilitator's guiding influence, the training intervention becomes little more than a recreational experience, instead of a more sophisticated educational, developmental or therapeutic training program (Priest, 1996). The results of this study would strongly support Priest's beliefs.
Chapter 8

SUMMARY, IMPLICATIONS, RECOMMENDATIONS & CONCLUSIONS

This chapter will begin with a summary of major results, this will then be followed by a discussion of the implications this research has on sport psychology and adventure-based training practice and recommendations for future researchers. A conclusion highlighting the contribution of adventure-based training to the field of sport psychology will complete the chapter.

SUMMARY OVERVIEW

The major thrust of this thesis has been to examine the impact of adventure-based training on team cohesion and psychological skills development in elite junior netball teams. More specifically, the intent of the research was to address research questions that might provide an insight into the efficacy of adventure-based training as a tool to teach team cohesion and psychological skills to athletes.

The following highlights these research questions so that they may form a framework for the remainder of the chapter.

Quantitative Hypotheses

• Athletes who received an adventure-based training program intervention, would show increased team cohesion when compared to a control group.

• The duration of the intervention will see longitudinal improvements in all four sub-scales of team cohesion, when compared to a control group.

Qualitative Research Questions

• From an athletes’ or coaches’ perspective, what were the major outcomes of the adventure-based training program; and how did they impact most upon the team in the following areas: 1) Personally, 2) In developing teamwork and team cohesion, and 3) Transferability to specific netball competition situations?
a. What new skills or knowledge about themselves or other teammates did individuals take away with them from the adventure-based training camp?

b. How did the team or individuals within the team change as a result of their adventure experience? What new skills were developed that helped the team?

c. Was there any direct evidence that psychological skills learnt during the adventure training camp were directly transferable to netball training or competition?

- From an athletes’ or coaches’ perspective, what processes during the adventure-based training weekend had the most impact on the team? What was it about these situations that made them so beneficial?

  a. What elements of the training intervention had the most impact on athletes? Why was this significant for these athletes?

  b. How did this camp differ (if at all), from previous adventure-based training camps, which the athletes had been on in the past?

  c. How did the outdoor bush environment impact on the program? Was it an advantage or a disadvantage traveling away from their usual training venues?

SUMMARY OF KEY FINDINGS

This summary section is included in order to synthesise the key findings from the results and discussion sections of this research project in a context that corresponds with the above research questions. Each research question will lead a brief overview of the findings pertinent to that area of the investigation.

QUANTITATIVE FINDINGS

- Athletes who received an adventure-based training program intervention, would show increased team cohesion when compared to a control group.

- The duration of the intervention will see longitudinal improvements in all four sub-scales of team cohesion, when compared to a control group.
Results of the quantitative analysis on these two questions clearly demonstrated that athletes in both treatment groups increased cohesion and that these improvements were increased and maintained throughout the duration of the investigation. This however, was only evident from a statistical point of view, in three of the four subscales. One subscale GI-S returned non-significant results due to methodological concerns (this however will be discussed further in the upcoming recommendations section).

Table 19 synthesises the between group repeated measures statistical results. It can be seen that there were no differences between groups at either time 1 or time 2. At time 3, the under 17 NSW team significantly improved on the GI-T subscale compared to the under 19 NSW team. As was discussed earlier, this was a surprise result reflecting the different stage of group development the teams were passing through at this phase of the intervention.

During time 4, the under 17 NSW team demonstrated significant improvements on the control group in all subscales except GI-S. While the under 19 NSW team confirmed a significant improvement over the control group on the ATG-S subscale.

Table 19: Shows significant between group results across four team cohesion subscales.

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
<th>Time 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATG-T</td>
<td></td>
<td></td>
<td>*Under 17</td>
<td></td>
</tr>
<tr>
<td>ATG-S</td>
<td></td>
<td></td>
<td>*Under 17 *Under 19</td>
<td></td>
</tr>
<tr>
<td>GI-T</td>
<td>*Under 17</td>
<td></td>
<td>*Under 17</td>
<td></td>
</tr>
<tr>
<td>GI-S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* denotes a significant between group result.

In discussing statistical reporting in outdoor education investigations, Neill (in press) warned of the possibility of type II error in studies that had a lack of power due to small subject numbers; this was the case within this investigation. To address this issue he recommended future researchers employ an underutilised statistical tool called effect size reporting. In this investigation, effect size analysis was used to measure the longitudinal effects of the
intervention (See Figure 11B, page 90). These were calculated for each group to determine the degree and direction of change between each testing time. Table 20 presents a summary of these results.

Between time 1 and time 2, the control group displayed an extremely large decline in scores on the ATG-S measure. This perhaps reflecting validity concerns because of different facilitators overseeing the completion of the GEQ questionnaires.

Between time 2 and time 3, both treatment groups displayed significant gains in the ATG-T subscale. The under 17 team showed their early progress into the “norming” phase of group development with significant gains in the ATG-S and GI-T subscales. Between time 3 and time 4 the most noteworthy result was the tremendous gains made by the under 19 NSW treatment team on the GI-T subscale; this reflecting the teams coming together around the task focus of competing well as a team at the national championships, and moving into the “norming”-“performing” phase of group development. Results were not calculated for the GI-S subscale because of the lack of interaction between groups on the repeated measures test.

Table 20: Summary of the effect score results across four team cohesion subscales.

<table>
<thead>
<tr>
<th>Group</th>
<th>Time 1 – Time 2</th>
<th>Time 2 – Time 3</th>
<th>Time 3 – Time 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATG-T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control (-.40)</td>
<td>Under 17 (-.29)</td>
<td>Control (-.04)</td>
<td>Control (-.06)</td>
</tr>
<tr>
<td>Under 17 (-.29)</td>
<td>Under 19 (-.14)</td>
<td>Under 17 (.56)*</td>
<td>Under 17 (.13)</td>
</tr>
<tr>
<td>Under 17 (-.29)</td>
<td>Under 17 (-.14)</td>
<td>Under 17 (.51)*</td>
<td>Under 17 (.13)</td>
</tr>
<tr>
<td>Under 17 (-.29)</td>
<td>Under 17 (-.14)</td>
<td>Under 17 (.11)</td>
<td>Under 17 (.06)</td>
</tr>
<tr>
<td>ATG-S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control (-.80)*</td>
<td>Under 17 (-.25)</td>
<td>Control (-.08)</td>
<td>Control (-.11)</td>
</tr>
<tr>
<td>Under 17 (-.25)</td>
<td>Under 17 (.11)</td>
<td>Under 17 (.51)*</td>
<td>Under 17 (.06)</td>
</tr>
<tr>
<td>Under 17 (-.25)</td>
<td>Under 17 (.11)</td>
<td>Under 17 (.13)</td>
<td>Under 17 (.06)</td>
</tr>
<tr>
<td>GI-T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control (-.03)</td>
<td>Under 17 (.35)</td>
<td>Control (.20)</td>
<td>Control (.18)</td>
</tr>
<tr>
<td>Under 17 (.35)</td>
<td>Under 17 (.19)</td>
<td>Under 17 (.82)*</td>
<td>Under 17 (.11)</td>
</tr>
<tr>
<td>Under 17 (.35)</td>
<td>Under 17 (.19)</td>
<td>Under 17 (.82)*</td>
<td>Under 17 (.11)</td>
</tr>
<tr>
<td>GI-S</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Denotes highly significant effect score results.
These results reflected strong but only partial support for the original research hypotheses. Results did not reflect improvement of all subscales as was hypothesised. Given this shortcoming, however, the results can be considered extremely significant due to the ceiling effect in the data. One wonders if significance would have been further improved if groups had room to score higher on subsequent GEQ data collections. Of special note were the very large and significant effect size scores for both treatment groups on the task related subscales. These statistical gains were also effectively triangulated by the qualitative data. Given this, the reader should feel confident that the findings are supported by strong validity.

The longitudinal element of the hypotheses are again not fully supported, however the improvements in cohesion that were made early in the intervention were maintained through to time 4 just before the national championships. This would indicate that the learning from the intervention and the support infrastructure to maintain these gains was very effective. The quantitative data results were strongly supported by the qualitative data. The following summarises the findings from the qualitative research questions:

**QUALITATIVE OUTCOME FINDINGS**

1. From an athletes' or coaches' perspective, what were the major outcomes of the adventure-based training program; and how did they impact most upon the team in the following areas: 1) Personally, 2) In developing teamwork and team cohesion, and 3) Transferability to specific netball competition situations?

   a. What new skills or knowledge about themselves or other teammates did individuals take away with them from the adventure-based training camp?

   b. How did the team or individuals within the team change as a result of their adventure experience? What new skills were developed that helped the team?

   c. Was there any direct evidence that psychological skills learnt during the adventure training camp were directly transferable to netball training or competition?

**Team Cohesion**

It can be concluded from the rich accounts of athletes' and coaches' experiences, that the adventure-based training program had a major impact on the team cohesion of both the Under 17 and Under 19 netball teams. The following summarises the major trends in the team cohesion qualitative results.
As a result of the intervention and the learning sequence the athletes were exposed to, relationships within both teams improved. This was especially evident within the under 19 team. Players improved their communication, trust and camaraderie, dysfunctional cliques dissolved, and players were able to resolve conflict that had led to dysfunctional behaviour and below par performances in the past. Being involved in a shared experience that required teammates and coaching staff to work together to overcome adversity was instrumental in improving social relations within the team.

Individual players had self-doubt as to their ability to perform many of the challenging adventure training tasks under adverse conditions. They developed however, awareness of their inefficiency and worked at applying skills that would improve their performance as a team. With these improved social and task skills, came a new determination to succeed. There was tremendous team interdependence around performing at the nationals, athletes believed they could win and set about taking a confident and focused attitude into all team performances.

Improved group-cohesion among the NSW netball players created an atmosphere of intense social and task bonding around the goal of winning a national championship, this attitude was supported by psychological skills to help athletes cope with the stresses of competition.

**Increased ability to maintain concentration and control anxiety levels**

The adventure based training intervention was designed to continually test and challenge the athletes ability to maintain their focus on a set task despite the intentional distractions and twists that would appear when the athletes least expected it. These distractions included:

- Ending up at an 80 metre cliff and having to abseil off it during “a bush walk”.
- Having to cook dinner and clean up after 12 hours of hiking.
- Expecting to have hot showers in cabins, only to find a cold bucket of water waiting behind a clump of bushes.
- Expecting to sleep in tents but the tents were forgotten.
- Being woken at sunrise by bagpipes and having to complete a team swim.
- Being confronted with a claustrophobic caving experience, then having your lights taken from you, and then being required to work as a team to find your way out in the dark.

These twists in the adventure component of the intervention were designed to metaphor the distractions and pressures of elite sporting competition, deliberately creating anxiety levels
that would mirror or exceed those of athletic competition. Players were challenged to monitor their thoughts and behaviours during these testing times. When distracted or overwhelmed they had to refocus their concentration, or use new mental skills to regain their composure so the team task that had been set for them could be completed. Athletes and coaches during this time experienced first hand the application of sport psychology techniques that eventually would be used on the netball court.

Increased Individual and Team Confidence
The adventure training intervention challenged athletes’ perceptions of what was possible. The structure of the intervention and the way it continually increased in challenge tested existing beliefs of what was possible and had athletes and coaches extending their self imposed comfort zones into realms of new possibilities. A strong metaphor within the treatment teams developed around what had been achieved during the adventure challenges where they learnt to work as a team. This success and accompanying feelings of confidence, and the attitude to work as one around a common goal, transferred back to netball training and competition.

Transfer of Learning from the Adventure Experience to Netball
The real test of this intervention’s success was whether the learning that took place during the adventure-training weekend would be transferred and benefit the athletes’ sporting endeavours on the netball court at the national championships. Athlete’s accounts of the implementation of skills learnt during the adventure training intervention, gave clear and unequivocal support for the notion of transfer from the adventure setting to netball.

Rich athlete testimony gave accounts of the team being present for one another in the heat of competition, never giving up even when on the ropes, fighting their way out of trouble through a strong belief that “they could do it”, were common team themes. Individual athletes gave strong testimony of how the metaphor for caving helped them control anxiety levels in the pressure of goal shooting. Coaches described the use of centering and breathing control to maintain composure when under stress. All participants in the intervention believed that the adventure based training intervention had a major part in the teams success at netball nationals.
QUALITATIVE PROCESS FINDINGS

• From an athletes' or coaches' perspective, what processes during the adventure-based training weekend had the most impact on the team? What was it about these situations that made them so beneficial?

  a. What elements of the training intervention had the most impact on athletes? Why was this significant for these athletes?

  b. How did this camp differ (if at all), from previous adventure-based training camps, which the athletes had been on in the past

  c. How did the outdoor bush environment impact on the program? Was it an advantage or a disadvantage traveling away from their usual training venues?

It was an important goal of this investigation to attempt to identify the processes that enhanced and were beneficial in helping participants change and pull together as a team. Several key factors were identified as being instrumental in the success of the intervention.

The Adventure Environment: A Place for change!

Taking athletes away from their normal training venues into the outdoor environment was a great success; this initiative provided several benefits. The new and novel setting, with its ability to create stress and disequilibrium were a catalyst for growth and change. Through appropriate sequencing of activities, the level of stress was continually adjusted to meet the goals of the athletes. This allowed for experimentation with new psychological skills designed to help "self-monitor" and "self-regulate" an optimal performance state. These skills were then utilised by athletes as a team, both in the adventure setting and back at netball.

There is a paradoxical side to the above physical and psychological challenges the outdoor environment offers. The bush also provides a neutral ground where equals are created among those who venture into her depths; this was very evident in resolving deep negative team issues during the bush walk on Mt Carialoo. When on Mt. Carialoo, reflection and thinking about self and others led to open and honest communication that the teams had not previously experienced. This resulted in debilitating clique issues and poor communication practices being resolved. Players and coaches believed that these team improvements would not have occurred if they had remained back at their normal training venue.
The Role of the Facilitator as Change Agent

This investigation had its starting point at a national coaching conference where the coach of one of the NSW teams took the researcher to task over the negative experiences her team had had the previous year while attending a different adventure training program. From analysis and comparison of the teams adventure experiences, clear recommendations emerged. Any program must ensure the matching of client’s goals and preferred learning styles with the skills of the facilitator. The NSW netball team required a developmental style of program but received a recreational one instead; players and coaches were left disillusioned.

From this learning, the facilitation process in this investigation took a high priority in matching the teams needs, with an intervention that had strong isomorphic and metaphoric links to netball. Players and coaches felt that this intervention provided these strong links through the way activities were presented and framed. Facilitators whether they are from an educational or sport psychology background, can learn from these lessons. The facilitator can be the real catalyst for change or recipe for disaster!

In addition to the above, this study adds to Lewin’s Change Theory where a change agent (facilitator) was seen as being critically important in all phases of the change process; Unfreezing, moving and refreezing, not just moving and refreezing as the previous theory had suggested.

IMPLICATIONS OF THIS RESEARCH

The results of this investigation have definitely added to the recent and rapidly growing body of knowledge in the field of sport psychology and adventure-based training, in particularly the work of Meyer (2000) and Meyer & Wenger (1998). As was demonstrated above, the outcomes of the study indicated clear benefits of the intervention for the two sporting teams involved. Quantitative results indicated highly significant trends on three of the four GEQ subscales. Interviews and observations proved a powerful means of gaining the participants’ perspective and provided extremely valuable insight into the outcomes and benefits of the intervention, which would not have been possible through a quantitative analysis alone. These positive results have implications for both 1) the field of sport psychology, and 2) the field of adventure-based training.
IMPLICATIONS FOR SPORT PSYCHOLOGY

- Being a sport psychologist can require the practitioner working with sporting teams to handle a variety of roles such as counselor, coach, psychologist, teacher and facilitator. While all these roles are important, the ability to effectively teach and facilitate a psychological skills training sessions is of utmost importance. Practitioners should ensure that their teaching impacts upon the interest and enthusiasm levels of athletes; this in turn will lead to active engagement in the learning process. This process can be improved by ensuring the matching of the client’s goals and preferred learning styles with those of the facilitator, and the skills of the facilitator in delivery of the material.

Institutions conducting training courses for future sport psychologists should highlight the critical role the facilitator has upon a training course. Being the “change agent” for athletes takes forethought, planning and practice. Experiential teaching methodologies, especially those offering an adventure component could be included as part of course work, in order to highlight a valuable resource and teaching tool. When planning these units organisers need to ensure the adventure-training provider is briefed so that facilitation is structured at the appropriate educational or developmental level. Similarly, advanced facilitation techniques like framing and frontloading should be used to ensure strong isomorphic links, so that the intervention focus retains strong isomorphic links to the goals and needs of the athletes.

- Many coaches (especially at the amateur level) are unaware of the importance of having a team functioning as a cohesive unit. In addition, many are unsure of how to address dysfunction within the team. Adventure-based training interventions are an ideal forum for coaches and teams to develop cohesion and team skills; having these skills can be the foundation for successful sporting performances. Sporting governing bodies could highlight the efficacy of adventure-based training during coaching certification courses, especially at the junior level where the skills learnt during such a course are not only skills for sport, but skills for life; this being in line with recent calls from leading sport psychologist such as Vealey (1988) and Duda (1997).

- It was apparent at the junior elite level that many players in the NSW netball ranks, while being highly skilled and physically fit, were lacking in their sporting mental skills repertoire. Coaches could greatly enhance their players readiness for the pressures of competition if a systematic psychological skills program was implemented from an early age before they reached this elite level. There are many programs available to coaches that can be conducted
at training, or away on a training camp as was the case in this intervention. This recommendation could probably be generalised across all junior sporting bodies.

IMPLICATIONS FOR ADVENTURE-BASED TRAINING

- Meyer & Wenger (1998) recommended that communication between the team-coach and the adventure-based programmer take place to share background information about the team, and specific information about individual athletes prior to attending an adventure training intervention. This present investigation followed this recommendation, as well as clarified what outcomes the coach wanted to achieve from the intervention, and matched this with an appropriate level of facilitation. A series of pre-course meetings where program ideas are hashed out and adjusted to meet the needs of each team, it is argued, will reap rewards during the program. If teams are requiring a fun day of activities simply to get away from their sporting environment and release some tension, then the adventure course provider should not be facilitating at an in-depth therapeutic level. Conversely, teams requiring an educational or developmental program should have facilitators appointed to these programs that have the maturity, knowledge and expertise to deliver and facilitate such a program. Evidence from this research project indicated that facilitating at an incorrect level, or providing staff that should only be facilitating recreational programs, may not only be harmful to participants, but damaging and detrimental to the whole adventure-training industry because clients needs and wishes are not being supported.

- Bisson's (1997) four-stage program-sequencing model that was utilised in this intervention was an important factor in assisting the structuring of an atmosphere conducive to promoting change within the team. Stage-four activities appeared to be especially beneficial in helping athletes move and refreeze their learning. This was in contrast to Meyer & Wenger (1998) who only utilised the first three stages during their intervention. Results from the present investigation, strongly support Bisson's findings of using his four-stage model of sequencing to increase group cohesion. Future adventure-based training programs should benefit from following this recommended sequencing of activities.

- Historically, tertiary training in adventure-based programming has had as its major focus the development of technical skills (climbing, caving or canoe instructor certification) among its graduates. This fortunately is changing, where an equal emphasis is being directed at leadership, people, and facilitation skills. Training institutions/providers need to ensure this trend continues so that by the time graduation arrives, future leaders have had exposure to a
range of facilitation techniques that will equip them for meeting the needs of the client
groups with which they will be working.

• Meyer & Wenger (1998) recommended that adventure-based training practitioners should
encourage course participants and their leaders to identify individuals who can serve as agents
for change. As was the case with their study, trusted and respected individuals worked with
ropes course participants to identify personal and/or group weaknesses. They then assisted
athletes in overcoming these limitations by helping integrate and transfer new behaviours or
responses to the real world. While this process proved productive for Meyer & Wenger in
enhancing social cohesion results, recommendations from this present research would
advocate that coaches taking their teams on an adventure-training course should ensure that
they utilise the expertise of the course facilitators as change agents. The facilitator as change
agent has the ability to greatly influence athletes’ learning in a variety of areas such as task
cohesion and psychological skills development, as well as social cohesion issues. Auxiliary
team officials or parents, while having an important role as change agents, are unlikely to
have as much impact on athletes’ learning as a well-briefed and experienced course facilitator.
The facilitator’s skill should be used in conjunction with auxiliary change agents.

• This present study demonstrated how a carefully structured and facilitated adventure
program could draw direct isomorphic parallels to an athletes’ sporting environment. Results
demonstrated that psychological skills could be learnt that could greatly enhance athletic
performance. Taking this success to another level, future programs could look at utilising this
same methodology to develop specific programs that could teach psychological skills for life.
While this is the intent of many school based outdoor education programs, many still utilise
reactive facilitation techniques where learning can be hit or miss. Application of isomorphic
framing and frontloading to specific activities could provide opportunities for enhancing life
coping skills, for not only school students but the general adult population as well.

RECOMMENDATIONS FOR FUTURE RESEARCH

The following provides recommendations for future researchers, these are divided into three
areas: 1) Retaining the Qualitative Methodologies; 2) Refinement of Instrumentation; and 3)
Replication of this study.
Retaining the Qualitative Methodologies

The phenomenological qualitative approach, where the participants' perspective of the intervention was sought, provided a major insight into the learning and transfer process that took place during the intervention and was a real strength of this study. The participants’ perspective explained much of the phenomena that took place, that otherwise would have been missed if only quantitative methods had been utilised. Dale's (1996) “how to” of phenomenological research in sport psychology, proved to be a valid and reliable guide for conducting data collection. It is a methodology that should continue to be applied to both sport psychology and adventure-based training research because of its ability to delve into the issues that matter most, that is, how the intervention impacts on the participants' lives, from their perspective. If our research can continue to demonstrate that interventions are impacting in ways that are making a difference to participants' lives, then we will continue to refine and improve our practices, which will ultimately strengthen the reputation and profile of adventure-based training as a powerful teaching medium for assisting the process of individual and group change.

Refinement of Instrumentation

- The Group Environment Questionnaire (GEQ) has been widely used in group cohesion research, and is regarded as the most reliable instrument for measuring this construct (Carron, et al, 1985). There has been some academic jousting in the literature between researchers as to whether the instrument possesses sound factorial validity and reliability (Li & Harmer, 1996; Schutz, Eom, Smoll, & Smith, 1994). From a practical standpoint, both studies (Meyer, 2000; & this present investigation) that have utilised the GEQ with sporting teams in an adventure training setting have found problems with the instrument. As highlighted earlier in the discussion, the GEQ’s GI-S scale, with questions that focused on social issues outside of the sporting situation, proved confusing and inappropriate for netball players that had traveled from varying regions to represent their state. Future research should ensure that questions are developed that can address this social sub-scale, so that they are specific to the sporting environment and not social partying activities outside of sport.

- The high scoring during pre-testing created a ceiling effect in the data that left very little room for athletes to record improvement in latter post-testing. Considering athletes had only been together for a few weeks before the first pre-test was administered, and that qualitative data suggested that teams were not operating at their cohesive best during this time, one wonders why scores were initially so high. Interestingly, this trend happened across both
treatment groups, and the control group, which rules out the traditional "J" curve that often is seen when groups have over-inflated expectations of their experience before the commencement of an intervention (Gray, 1997). The findings of this study would support Schutz et al (1994) synopsis, that the factor structure of the GEQ requires further examination.

Replication of this Study

- In answering the recommendations from sport psychology (Vealey, 1994) and adventure-based training (Neill, 1998) this research project outlined in great detail the methodology that was used to conduct the intervention. This was undertaken so future researchers could replicate the study as closely as possible. Because of the significant findings that were obtained from this study, future research needs to attempt follow up investigations, in an attempt to verify the outcomes. If successive studies find similar support for the efficacy of adventure-based training, then this exciting and engaging methodology should be taught to future sport psychologists, coaches, educators and trainers so participants may reap its powerful and life changing benefits.

- Any future studies should ensure the reporting of effect size scoring so that improvements or change can be objectively compared across studies.

There are also options for modified replications of this study in an attempt to find explanation to still unanswered questions, for instance:

- Often sporting teams have a limited amount of time in which they can go away to attend adventure training interventions, especially those of the kind that take two to three days, as was the case with this present intervention. Meyer & Wenger's (1998) utilisation of the first three stages of Bisson's (1997) activity progression, during a one-day intervention, can be somewhat more inviting to sporting teams, for both financial and time reasons. Future research should attempt to replicate Meyer & Wenger's methodology, with the facilitation techniques that were utilised in this investigation. Amalgamating these two components may help connect the ropes course experience with stronger isomorphic links to the clients sporting environment and needs.

Further Research

- The role of the facilitator and the facilitation process, is a variable that is often dismissed in adventure training research projects. Future research should examine the importance of the
facilitators role. One option would be to replicate this study with two separate groups. One group would receive the exact intervention that is outlined in this methodology, while the other group experiences the four-stage sequence of activities, but does not receive any facilitation to aid learning, transfer or isomorphic links to sport. Measuring outcomes, along with participants’ perceptions of how the facilitator linked the intervention to the participants sporting realities, might help shed more light on the importance of the facilitators role as a change agent in the adventure experience.

• The adventure-based training intervention could be tested to determine whether it can help treat specific psychological weaknesses in athletes. For example: Could a one-on-one consultation process, with a sport psychologist or adventure training facilitator, during a caving intervention, provide solutions to an athlete that suffers from extremely high state anxiety before a sporting competition?

• Leading sport psychologists such as Vealey (1988) and Duda (1997) recommended that sport psychological interventions should not only be skills for sport, but skills for life. The adventure-based training process definitely met this call. What would be interesting to follow however, is what impact such a powerful intervention had on athletes at some point after the intervention; five and ten year follow ups would provide an interesting snapshot of the interventions long term effects on sport and life in general.

• Future research should ensure attempts are made to strengthen the validity of quantitative measures by scheduling regular checks throughout the intervention with the control group in order to monitor issues that may affect their cohesiveness as a team.

• The use of the methods and facilitation techniques from this research project could be tested on other populations. Designing a program that could provide the general population with mental skills that would help them cope with the stress and anxiety of modern urban life would be a worthy project benefiting many participants. The techniques used to help athletes manage the pressure of sport, can be easily reframed in an adventure experience to mirror coping skills for everyday existence. Dale’s (1996) phenomenology methods could be used to measure the efficacy of the project.

CONCLUDING COMMENTS

This study produced a substantial body of evidence supporting the efficacy of adventure-based training as a valid and viable methodology for enhancing the team cohesion and
psychological skills development of elite athletes. In addition, an unexpected, but more significant outcome of the intervention was the positive and powerful impact the adventure experience had on the athletes' performances in sporting competition. The evidence presented by those who participated in the intervention painted a vivid picture of a unique life changing experience that clearly played a major part in both NSW team's success, in winning their respective national championships.

The outcomes and benefits for the athletes and coaches that underwent the intervention cannot be simply dismissed as a fringe teaching methodology for sport. Unmistakably, adventure-based training can make a difference to sporting team's and their performance. Coaches and sport psychologists that are searching for a training method that could give players the edge should consider incorporating adventure-based training into their yearly training programs.

As well as implications for practice, this study made a strong contribution to research in the field of adventure-based training by demonstrating the transferability of learned skills from the adventure environment to the athletes' lives on the sporting field and beyond. In the past adventure-based training had received much criticism for its inability to produce research that demonstrated the efficacy of its methodologies. This study helps to reverse this trend by adding to the growing body of knowledge supporting the power of adventure-based training to impact on and change participants' lives.
REFERENCES


Personal Communication. (1997). Telephone conversations with the Coaching staff of these teams.


Successories. (1998). Motivational poster and card manufacturer. [This quote was obtained from a poster put out on the following website, www.successories.com].


APPENDIX 1

Research Consent Form
CONSENT FORM FOR RESEARCH PARTICIPATION

PROJECT TITLE: The impact of adventure-based training on team cohesion and psychological skills development in elite netball players.

I consent to participate in the research project being conducted for Netball NSW, by Ian Boyle of the Graduate School of Education at the University of Wollongong, NSW.

By signing below you are agreeing that you understand the following:

1. The PURPOSE of this research is to examine the immediate and initial impact of an adventure-based learning experience on team cohesion and mental skills preparation of your netball team.

2. The PROCEDURES consist of the administration of a pre and post questionnaires (instrument) and interviews with participants after the training event.

3. All individual responses collected in the study are strictly CONFIDENTIAL. Information from the questionnaires and interview sessions will be coded with a number and your name will not be identified at any time.

4. The research is designed to assist the researcher in learning more about the impact of an adventure learning experience on a sporting teams development and preparation for competition.

5. That you are free at any time to ask questions or withdraw your consent from participating in the study.

FACULTY ADVISOR:

Dr. Tonia Gray (02) 42213875
Department of Education
University of Wollongong
Wollongong, NSW.

Signature of Participant: Date: / /
APPENDIX 2

Information package sent to players
NSW Netball

A journey toward the National Championships

An Adventure Training Weekend in Kangaroo Valley

Venue: Scots College Glengarry
Kangaroo Valley, NSW, 2577

Ph. (02) 44651089
Introduction to your Adventure Weekend

A big welcome from Scots College’s Outdoor Education Campus.

Your weekend in Kangaroo Valley will include a variety of new challenges that will require real team work to overcome. Our aim is to co-create a vision that will take us to this year’s Nationals being totally physically and mentally primed for your best team performance. The focus will not be on winning, but ensuring the team is in the best possible physical and mental state for the Nationals. If this is done the winning will take care of itself.

Much of this weekend is about planning for the upcoming Nationals, developing strategies and mental skills that will assist when the pressure of competition is on.

So come with an open mind, and a willingness to develop a plan that will bring the team together for the challenges that lay ahead.

Caving requires mental skills that ask the athlete to block out any fears and doubts about their ability. One can learn to focus on the essentials of performance, while blocking out the distractions that can paralyse our bodies and inhibit performance. This weekend we will sharpen our mental skills, so that we learn to focus totally on the things within our control.
Program Outline

Friday PM 6.00pm
- After arrival, take gear to accommodation. (Bunk style, with bathroom attached).
- Then to Glengarry Hall for overview of program and goals for weekend.
- Team building activities. Guaranteed to be fun!
- Equipment issue for Saturday Bush walk.
- Night walk and reflection session at Glengarry fire on the way back to cabins.

Saturday
- 06.00 am Rise, dressed for an early morning jog. Having swimming kit on underneath. Swim at Lake.

- 7.30 - 8.00am Breakfast / Make and pack morning tea, lunch, and afternoon tea for the day / Pack your group pack as per gear issue sheet. Pack your personal gear so it can be taken to this evenings camping spot, and ready for departure on bus by 8.00am.

- 8.45am - 9.00am Briefing and departure for expedition to Mt Carialoo. This walk is the beginning of your journey to the nationals. For the team to do their best it will require a commitment from each of you to do your own best. Like at the Netball Nationals, today their will be many challenges to overcome. Your goals this morning include the following: you must encourage each other, any talk must be positive, must do best possible performance. As one large group we will all hike up McPhails fire trail as a team in the quickest time possible, we must however do this as a group. We must stick together as a team, as this is what it will take to win the nationals.

- 7.00pm -8.00pm. Arrive back at Glengarry bush campsite. Your bags will be waiting and tents will be ready for your arrival. Swim in Lake to freshen up. Then we will have a pot luck supper. Groups of girls will be delegated to different parts of the meal to bring. See Coach. (If you want to pre cook or prepare before coming down, we can keep things in the fridge for you.)

- 8.00pm - 10.30pm Camp fire, Marshmallows, relax, and review the days events. Sleep in tents by the Lake. (Bring your sleeping bag, Mozzie Repellant & pillow)

All glory comes from daring to begin challenges that at first seem out of reach, but with effort and teamwork can be overcome.
Sunday

- 6.00am Rise for swim in the Lake.

- 08.00am
  08.30am Dressed in Caving gear. You will get dirty so old gear is good. (Track Suit pants if cool, t shirt, sloppy joe sweat shirt, socks, and old runners. Also see gear list following. Long hair should also be tied back.

- 7.30am
  8.30am Breakfast / Make and pack morning tea, lunch, and afternoon tea for the day. Empty your tent and pack your personal gear so it can be taken with you to Caving. You will return to Sydney directly from Caving so take all your gear with you.

- 9.30am Depart and travel to Bungonia for a day of Caving. The trip takes about 90 minutes.

- 10.00am
  4.00pm Caving provides a unique environment to develop personal and team strategies to overcome situations that are quite physically and mentally challenging. We will work together to develop plans that will assist in psychological preparation for the Nationals.

- 4.00pm -
  4.30pm Summary of weekend. Discussion on “Where to from here”, and depart for Sydney

"Obstacles are those frightful things you see when you take your mind off your goals?"
One of the characteristics of successful teams is outstanding rapport and understanding between team members. One of the goals of this weekend is to get to know your teammates in a variety of situations in an effort to begin the bonding that will be needed to win a National Championship. From our experience preparing, cooking, and eating meals together is a great way of fostering this process.

- Following are the meals that you will need to cover. Anita is going to divide you up into food groups of 4 people per group.

- You will have to find time to sit down and organise who buys what. I have included menu suggestions and a menu preparation sheet to help you plan your meals and shopping. The cost should be split evenly by all group members.

- Camp meals are cooked on a camp stove or BBQ, with only 4 pots and a 2 small fry pans to use, so meals should be kept simple, should be easy to clean up afterwards, and nutritious as per your normal training diets.

**Friday Night Supper after hall activities** (In cabins use of stove, and fridge)

- Tea, milo, juice, fruit, muffins, sandwich, or healthy snackage.

**Saturday Breakfast** (In cabins use of stove, and fridge)

- Cereal, toast, milk, juice, spreads, fruit, tea, milo

**Saturday Lunch & Snacks for Walk** (Will be made by you).

- We could be walking up to 6 hours, so a steady and nutritious intake of food will be needed.

- Sandwiches. Your choice of fillings but remember they will be pre-made. eg. Cheese, vegemite, & sprouts, peanut butter & honey, tin of tuna, banana, jam.

- Muesli bars, fruit roll ups. Fruit and nut mix. Selection of sweets. High carbo biscuits, ie arrowroot, milk coffee, fruit pillow.

**Saturday Dinner  Pot Luck Supper**

- Dinner on Saturday night will be a pot-luck supper. What we get for dinner is “Pot Luck”. Robert will designate different girls different parts of the meal to organise. Remember that you will have to plan for the whole team when working out quantities. If you want to prepare this before you come down, we have facilities to keep things refrigerated until Saturday night.

- Don’t forget **MARSHMALLOWS for around the fire & chocolate for the coaching staff.**
**Sunday Breakfast** (Campsite breakfast, use of camp stoves only)

Cereal, toast, milk, juice, spreads, fruit, tea, milk, add water and shake pancake mix.

**Sunday Lunch & Snacks for caving** (Will be made by you and eaten at Bungonia Caving.

Sandwiches. Your choice of fillings but remember they will be pre-made. eg. Cheese, vegemite, & sprouts. Peanut butter & honey, Tin of Tuna, Banana, Jam. Anything else that you like.

Muesli bars, fruit roll ups. Fruit and nut mix. Selection of sweets. High carbo biscuits, ie arrowroot, milk coffee, fruit pillow for morning and afternoon tea.

**Sunday Dinner**

This meal will be bought on the way back to Sydney, so bring a few extra $$$ with you. If you are arranging a pick up we will pull into McDonalds at Sutton Forrest North Bound between 5.00pm and 6.00pm on Sunday Night.
This sheet is designed to help your group of 4 plan out your menu for the weekend.

Group member names & phone numbers.

1) ________ Ph) ___________ 2) ________ Ph) ___________
3) ________ Ph) ___________ 4) ________ Ph) ___________

Friday night Supper

_________________________________________________________________________

_________________________________________________________________________

Saturday Morning Breakfast

_________________________________________________________________________

_________________________________________________________________________

Saturday Lunch

_________________________________________________________________________

_________________________________________________________________________

Saturday Dinner Pot Luck Supper (Anita to organise groups for this meal) See dinner list

_________________________________________________________________________

_________________________________________________________________________

Sunday Breakfast

_________________________________________________________________________

_________________________________________________________________________

Sunday Lunch

_________________________________________________________________________

_________________________________________________________________________
The following gear list is designed to help you pack and ensure you have all the necessary equipment and clothing required. Please use this sheet as a check-list to ensure that you have included it in your kit.

### Clothing and Items to have at Base Camp
- 1 pair long pants: (Track suit).
- 1 pair shorts.
- 2 T shirts.
- 1 Jumper.
- 2 Socks.
- 2 underwear.
- Swimmers
- Towel & Toiletries
- Pillow (optional)
- Hair elastics to tie hair back
- Cap or sun hat
- Runners or good walking shoes.

### Clothes & items to have for Bush Walking Saturday
- Shorts
- T shirt
- Underwear
- Jumper
- Socks
- Good footwear that supports your ankles.
- Bring extra pair of old runners for river
- Sun hat / sun cream
- Insect repellant

### Clothes & items to have for Caving on Sunday
- Track suit
- Sloppy Joe
- Hair ties
- Undies
- Toiletries, towel.
- T shirt
- Old runners
- Socks
- Clean change of clothes to get into at end of day.

### Other Equipment
- Sleeping Bag
- Pen, paper
- Headlamp (Batteries)
- Drink bottle (can be supplied).
- KFS, Mug, Plate. (Can be provided).
- Sun hat, or cap, sun screen.
- Camera (optional) Great scenery!
- Rain Jacket (Can be supplied).
- A positive, never say die attitude, that will enable you to give your best in everything you do!

### Items supplied by us
- Tents, sleeping mats, cooking stoves, water bottles, backpacks, technical equipment.
Pot Luck Supper Organisation

The idea of pot luck supper is that we designate different aspects of the meal to different groups and they have to surprise us with their creation. (Hopefully a positive surprise that is edible!)

If you can divide the team into groups for their personal group food, that is groups of 4 where they can all organise a menu for themselves.

For the pot luck supper can we organise teams of two girls for the following:

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appertisers 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appertisers 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pasta Dish 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pasta Dish 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mystery Main</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desert 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desert 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 3

Ice-breaker activities that were described in Chapter 3.
Ice Breaker and Get to Know you Activities

These are the questions used during ice-breaker activities that were described in Chapter 3.

**Categories**

- Clasp hands in front of you which thumb is on top.
- Group yourselves in months you were born in. Any of you born on the same day?
- Form a line from oldest to youngest in the team
- Get in a line from shortest to tallest
- Balance on one leg; which leg do you choose?
- Stare at the end wall with one eye, which eye did you choose?
- Fold your arms which arm is on top?
- What is your favourite side of the court to play on. L or R
- How many children are in your family?
- What arm do you shoot goals best with? L R or ambidextrous?
- When you use toilet paper do you fold it or scrunch it.
- What colour are your eyes?
- What is your favourite sport outside of Netball?
- Face the back wall, now hop up and turn 180 degrees to face me, which way did you turn? L or R?

**Have you ever.......:**

- Been on an adventure training camp before.
- Been on a rep side for netball.
- Won a sporting event
- Been abseiling before
- Spent the night in a tent
- Farted and blamed the person standing next to you.
- Been nervous before a big game.
- Been bush walking
- Mooned someone
- Been a bit worried about what is going to happen this weekend
- Been so embarrassed that you wanted to run off and bury your head in the sand
- Thought that the group of you standing around this circle could be part of a team that could win the National Netball Championships.
- Group suggested Have you ever. Take one circle out, and person left standing has to ask a have you ever question.
APPENDIX 4

Progressive muscle relaxation guide
Specific Instructions for Progressive Relaxation

(Weinberg & Gould, 1995, p.266)

In each step you’ll first tense a muscle group and then relax it. Pay close attention to how it feels to be relaxed as opposed to tense. Each phase should take about 5 to 7 seconds. For each muscle group, perform each exercise twice before progressing to the next group. As you gain skill, you can omit the tension phase and focus just on relaxation. It is usually a good idea to record the following instructions on tape, or you might even invest a few dollars in a progressive relaxation recording.

1. Get comfortable. Loosen tight clothing and uncross your legs. Take a deep breath, let it out slowly, and relax.

2. Raise your arms, extend them in front of you, and make a tight fist with each hand. Notice the uncomfortable tension in your hands and fingers. Hold that tension for 5 seconds, then let go halfway and hold for an additional 5 seconds. Let your hands relax completely. Notice how the tension and discomfort drain from your hands, replaced by comfort and relaxation. Focus on the contrast between the tension you felt and the relaxation you now feel. Concentrate on relaxing your hands completely for 10 to 15 seconds.

3. Tense your upper arms tight for 5 seconds and focus on the tension. Let the tension out halfway and hold for an additional 5 seconds, again focusing on the tension. Now relax your upper arms completely for 10 to 15 seconds and focus on the developing relaxation. Let your arms rest limply at your sides.

4. Curl your toes as tight as you can. After 5 seconds relax the toes halfway and hold for an additional 5 seconds. Now relax your toes completely and focus on the spreading relaxation. Continue relaxing your toes for 10 to 15 seconds.

5. Point your toes away from you and tense your feet and calves. Hold the tension hard for 5 seconds, then let it out halfway for another 5 seconds. Relax your feet and calves completely for 10 to 15 seconds.

6. Extend your legs and raise them about 6 inches off the floor and tense your thigh muscles. Hold the tension for 5 seconds, let it out halfway and hold for another 5 seconds before relaxing your thighs completely. Concentrate on your feel, calves, and thighs for 30 seconds.

7. Tense your stomach muscles as tight as you can for 5 seconds, concentrating on the tension. Let the tension out halfway and hold for an additional 5 seconds before relaxing your stomach muscles completely. Focus on the spreading relaxation until your stomach muscles are completely relaxed.

8. To tighten your chest and shoulder muscles, press the palms of your hands together and push, hold for 5 seconds, then let go halfway and hold for another 5 seconds. Now relax the muscles and concentrate on the relaxation until your muscles are completely loose and relaxed. Concentrate also on the muscle groups that have been previously relaxed.

9. Push your back to the floor as hard as you can and tense your back muscles. Let the tension out halfway after 5 seconds, hold the reduced tension and focus on it for another 5 seconds. Relax your back and shoulder muscles completely, focusing on the relaxation spreading over the area.

10. Keeping your torso, arms, and legs relaxed, tense your neck muscles by bringing your head forward until your chin digs into your chest. Hold for 5 seconds, release the tension halfway and hold for another 5 seconds, and then relax your neck completely. Allow your head to hang comfortably while you focus on the relaxation developing in your neck muscles.

11. Clench your teeth and feel the tension in the muscles of your jaw. After 5 seconds, let the tension out halfway and hold for 5 seconds before relaxing. Let your mouth and facial muscles relax completely with your lips slightly parted. Concentrate on totally relaxing these muscles for 10 to 15 seconds.

12. Wrinkle your forehead and scalp as tight as you can, hold for 5 seconds, and then release halfway and hold for another 5 seconds. Relax your scalp and forehead completely, focusing on the feeling of relaxation and contrasting it with the earlier tension. Concentrate for about a minute on relaxing all of the muscles of your body.

13. Cue-controlled relaxation is the final goal of progressive relaxation. Breathing can serve as the impetus and cue for effecting relaxation. Take a series of short inhalations, about one per second, until your chest is filled. Hold for 5 seconds, then exhale slowly for 10 seconds while thinking to yourself the word relax or calm. Repeat the process at least five times, each time striving to deepen the state of relaxation that you’re experiencing.

292
APPENDIX 5

Gear list for bush walking trip
Day Hike Outdoor Equipment List

The following items must be carried by you in your hike pack on any day hike. Please use this sheet as a check list to ensure that you have included it in your kit.

Clothing you would wear on hike morning:
- 1 pair shorts.
- 1 T shirt.
- 1 Socks.
- 1 undies
- 1 sun hat with good brim.
- Hike boots or good walking shoes.

Group Gear (per group)
- Food. Obtained AM of hike day.
- 1 Pooper Scooper, Toilet paper

(The carrying of group gear is shared).

Personal Outdoor Equipment
- Pack (Best to use big pack half full)
- Raincoat (Keep nearer top of pack)
- 1st Aid Kit.
- Compass, whistle.
- Pen, paper.
- Sunscreen
- 2 Water bottles, Full + Filter bottle
- Map.
- Headlamp, torch. (With New Batteries).
- Camera? (Not compulsory).
- Any medication you may need

Extra Gear in a waterproof bag
- 1 T shirt.
- 1 100 wt Pile jacket
- 1 Socks.
- 1 pair thermal underwear (tops and bottoms).
APPENDIX 6

Map of Mt Carialoo highlighting bush walk route
Map of Mt Carialoo Walk
APPENDIX 7

Psychological preparation workbook
New South Wales
Netball Team
1997 National Championships
Psychological Preparation

Introduction

The field of sport psychology is still relatively new, although the importance of the mind in sport has been known for hundreds of years.

Netball is not just done with the body. Achieving peak performance will be just a dream without concentration, motivation and self-belief. If you are looking for a competitive edge, then sport psychology may be able to help you.

While sport psychology cannot and does not profess to offer all of the answers, it has developed and is continuing to develop better and more systematic methods, which offer hope to athletes who want to excel. Sport psychology cannot and will not replace a lack of skill or physical conditioning, your training with the NSW Netball Team has prepared you well in this area.

The focus of this weekend is to work through strategies that will help you get the most from the remainder of your training before the national championships, and to begin to formulate pre-competition and competition preparation plans, that will have you relaxed and ready to perform your best on game day.

Training your psychological skills

Psychological skills need to be learned and practiced, so that they become automatic. Just as with your netball skills, it is necessary to practice the skills in a range of situations, before they can be used reliably in major competitions.

This weekend is designed to introduce you to some of the key sport psychology concepts that will help you be at your optimum for the nationals. It will involve reflection on past performances, and setting goals for the lead up to the championships to ensure your training is being optimised. On return to netball training you will prepare a competition plan in conjunction with your coach, so that you can begin to use this in your visualisation practice each day before you get to the nationals.

The introduction to sport psychology skills this weekend is going to be a little different to what you may have experienced before. We will be active for much of the weekend, we will have heaps of fun, and you will be challenged both physically and mentally, being put in situations that will mirror situations that you may encounter while overseas. Come along with an open mind, an enthusiasm to learn, and a determination to do your best.

(Some of this introduction has concepts borrowed from the book Sport Psych by The SA institute of Sport).
The Champion

The average netballer sprints until the breath in them is gone,

but the champion has the iron will that makes them carry on,

For rest the average netballer begs when limp their muscles grow,

but the champion runs on leaden legs, their spirit makes them go.

The average person’s complacent when they do their best to score,

but the champion always does their best, then does a little more.
Goal Setting

An important step to enhancing your performance
Goal Setting

During this section we will investigate various types of goals that relate to both training and competition. As you work through this section, think about specific goals you can set that will help you to really develop your physical and psychological skills. Establishing specific goals should help provide a concrete direction to your actions, give you a standard to determine whether you are attaining your goals, and encourage you to extend your limits.

Goal setting is important in sport not only because it stimulates us to think about where we can go; it also gives us a step by step way to get there and inspires us to take the first step. Today's goals are tomorrow's realities. Out of all the psychological possibilities one could involve themselves in, studies have shown (Locke, 1981) that goal setting has a clear correlation to improved performance.

There are several types of goals that you need to develop and work into your training program and life. In conjunction with your coach you will develop goals that will guide your preparation for the national championships.

**Performance Outcome Goals**

First you must decide where you want to end up. Don’t sell yourself short in terms of possibilities. Dream a little. Dreams allow for the unfolding of new realities. Goals that are unimaginable are unachievable, not because they really are unachievable, but because they were never dreamt of. It is suggested that in planning your overall performance goals it is worthwhile to consider three areas.

1) Imagine what is potentially possible if all your limits are stretched. How good could you be? Imagine the possibility of unlimited potential. This should allow you to extend what you previously considered your possible upper limit. You may never achieve this dream goal, but if you can accept that it is within your stretched potential, then you will remove some psychological barriers that currently limit your possibilities. What you aim at affects how you approach a target, how you approach yourself, and what you are likely to hit.

2) Set a realistic performance outcome goal based on your competitive history, current skill level, and present motivation for improvement. What is the best performance you can realistically attain this year if you commit yourself to it? Think in terms of final placing or personal best times.

John Bales an Olympic kayak coach believes "a major purpose in setting a realistic outcome goal is to establish a commitment to that goal'. With such a large amount of your preparation being focused on these goals it is important to do a thorough analysis of what will be involved to reach it. He suggests sitting down with your coach and answering the following questions.

a) What is your current skill level?

b) What are your relative strengths and weaknesses?

c) How committed are you to improving your level of performance, ie. What is your training commitment this year compared to last? Are you going to put in the hard yards?

3) The third area in which you should set a goal is probably the least considered yet the most important in terms of life satisfaction and self acceptance. Set a goal of overall self acceptance, regardless of performance outcome. This will help you to deal constructively with unmet goals. Sometimes pre-established goals are not met even when they have been realistically set and vigorously pursued. If you fail to meet an important performance goal, you are naturally very disappointed, and there is nothing wrong with feeling and expressing that disappointment. You should still, however, be able to accept yourself as a worthy human being. Nobody intentionally goes out to intentionally screw up. You should bear this in mind when responding to unmet goals. Self-damnation serves no useful purpose.

To put all the training and sacrifice into your national championship campaign takes “COURAGE”. No matter what the outcome all that is important is that you have done your best. The poster preceding this page is to remind you of this important concept.

By setting this goal you will be in a position not too worry about what has happened. Learn as much as possible from the experience, put it behind you, and then refocus on the next race or objective.
Personal Control Goals

Some athletes spend much of their time worrying themselves senseless about their upcoming championship. Worry, however, is a wasted emotion. Worrying about what is completely out of your control is particularly unproductive. You can, though, control yourself and your response to situations around you. In the lead up to the national championships you should focus all your energies on yourself and on the events within your potential control.

In a sport like netball, if you start to assume responsibility for what is beyond your control you are inviting trouble. You can’t control which team you will play, the time you will play, the weather, other competitors, or spectators.

You should assume responsibility for only that which is within your direct control: for example, Set your mind only on your game focus, everything else is blocked out and does not matter. Visualise your team plan and stick to it.

Orientation for the Competition Day

Once you have set your goals as has been discussed above, and competition day begins to approach, you must begin to focus on components of the event within your control. When you leave for the Nationals, and particularly in the days leading up to competition, your thoughts should not be on winning, but on giving 100% of what you have. The most appropriate on-site goal, is to maintain the event focus that you know will give the highest probability of success. Be as good as you can be, as opposed to the goal of winning. Seeing how good you can be, going as best as you can, pushing your limits, giving all you have, extending yourself, playing hard, are all examples of constructive on-site orientations that often lead to personal best efforts, and if this is good enough on the day, then winning will automatically happen. If not, you know you did your very best and that is all one can ask for! Hold your head high and be proud of your achievements.

Goals for the Competition Day

All athletes have the dream of one day becoming a champion. That underlying goal helps many athletes maintain motivation and carry intensity to training and competitions. However, when you get to the court on the day of competition, a focus on winning is not what helps most netballers perform best, even if the underlying desire is to win.

Terry Orlick who is a World renowned sport psychologists states that, “I have never encountered an athlete who had an all time best performance while focusing on winning or losing during an event. The problem with thinking about winning or losing within the event is that you lose focus of what your need to do in order to win. In that sense it is self defeating.

Olympic paddling champion Larry Cain from Canada when he won Gold, preferred to be highly energised before the start of the event, and thinking about the possibility of winning helped him get fired up. However, once he was in warm up mode and approaching the start line, or performing in the event, any thought of winning gave way to an effective event focus that is within his own immediate control. For Larry this meant switching to his race plan that had been developed weeks before in conjunction with his coach. He had been visualising it for weeks, and had a clear vision of all the important things he needed to do to put in the ultimate performance.

Following his gold medal win over Olaru, the 1983 world champion from Romania, Larry Cain commented, “I didn’t look around at all during the race. I knew if I had my best race that I’m capable of having, that I could win it. I really didn’t worry about what the others were doing, I just went out and followed my race plan and went as fast as I could”.

Many things will happen to you at the netball championship centre that will tempt you to focus on outcome, or winning; for example, reporters, TV, well wishers telling you that you can win, and they have got their money on you, as well as your own dreams, and the whole competition environment surrounding you. You have to continually block this out and return to the focus that will best allow you to do you personal best. You will find you will keep having to shift back and forth to gain control.

Most athletes who think about winning, or focused on the goal of winning before the event, creates additional unwanted stress. They usually find that they are already psyched enough, or prefer to be more relaxed, or are
unsure of their capacity to win. Focusing on winning increases stress or worry, and takes their attention off the specific task, and is therefore not likely to be helpful.

When Kayaker Alwyn Morris and Hugh Fraser came up with their all time best performance to win the 1984 Olympic gold medal and shatter the world record by 2 seconds in the K2 1000 metre race, their only goal was to race their perfect race, to follow their own race plan, and to race as well as they possibly could. They never directly focused on winning or on other competitors during that race. They focused on getting from point A to point B in the most efficient, fastest way possible for them. Hugh never even saw his competitors in that race even though seven other boats were racing along side him.

_The key message for your preparation is to train hard enough to be good enough to win, then focus solely on your own and team performance and the things that will produce your best._
Set your own goals Using the blank paper following this page begin to formulate your ideas for goal setting. Please consult with your coach on this task to identify key areas.

1. Dream goal (long term) What is your long term dream goal? What is potentially possible in the long term if you stretch all your limits?

2. Dream Goal (this year). What is your dream goal for this year? What is potentially possible if all your limits are stretched this year?

3. Realistic Performance Goal (this year) What do you feel is a realistic performance goal that you can achieve this year (based on your present skill level, your potential to improve and your current motivation)?

4a. A goal of self acceptance. Can you make a commitment to accept yourself and to learn from the experience regardless of whether you achieve your ultimate performance goal this year?

4b. If you do not meet your desired performance goal, to what extent will you still be able to accept yourself as a worthy human being?

Complete self 0 1 2 3 4 5 6 7 8 9 10 Complete and full Self acceptance.

5. Can you make a commitment to give your best effort (giving everything you have that day) and being satisfied with achieving that single goal?

6. Focused Psychological goal (this year) What do you feel is an important goal for you to focus on this year in terms of your psychological preparation or mental control? For example, a specific goal related to psychological readiness for the event, focus control within the event, distraction control, confidence, coping with hassles or setbacks, improving interpersonal harmony within the team.

7. Daily Goal. (a) Set a personal goal for tomorrow's training session. Write down one thing you would like to do, or accomplish, or approach with a special focus or intensity. (b) Can you set a personal goal before going to each training session this year?

8. What do you think, you or others could do to increase the harmony among team members in the lead up to the national championships?
Every training day of your build up has to be geared towards having you totally prepared mentally and physically for the nationals. The setting of daily goals will help keep your focus on the things that will optimise your training and in the long run your performance.

Each evening before the next days training session, set aside a short period of time to sit down on your own or with your coach (if they are available), to identify an area that you need to focus on. This goal could be for working on and refining either mental or physical aspects of your performance and preparation.

Examples might be: Concentrating on maintaining technique in the final 5 minutes of a game. Concentrating on your role within the team. Having the right intensity for training and game time even when conditions are not favourable. Putting time aside for visualisation, centring, relaxation training. The list is infinite but choosing an area that will strengthen you and your performance is the key.

1). Identify with your coaches help, one goal that you must focus on during your training session tomorrow. (Write this in the space below).


Once this goal is set, find a quiet space and visualise yourself successfully completing it.

Evaluating Your Goal

2). Step two in this daily goal setting process is to sit down on your own, or with your coach some time after the training session, and evaluate your performance.

a). Did you achieve your goal? What were some positive steps that you took that helped you achieve success?


b). If you did not quite get to your goal, what further efforts can you employ to reach it?
Visualisation

Centring
Focusing, Anxiety control, Centring, Visualisation

Upon arriving at the competition venue there are going to be many distractions that have the potential to distract you from attending to the issues that are going to have you playing at your best.

Once you arrive at the competition venue there will be the potential for many distractions. There are new courts, the accompanying new environmental conditions, other competitors training and strutting their stuff, media, crowds, and all the hype that goes with a major championship. You need to begin to plan for these distractions by developing a pre and competition focus plan. What will you do if you get distracted, and begin to feel overwhelmed by “everything”?

| The key to overcoming these potentially debilitating distractions is to refocus on “you”. |

By having an action plan to get your mind off these distractions and back on task (ie. the things that really matter), is a crucial part of your preparation. An example for the kayaking world championships in the 1980's may help illustrate some of the things you may face.

The East German team were the reigning world champions, and they arrived at the competition venue as this totally professional team. Firstly their kayaks and paddles were this bright shiny blue colour, which set them apart from all the other boats and made them their athletes highly visible on the water. A rumour was circulated that the boats were made of some high speed material that made them faster than all other boats. The boats were always closely guarded and no one was allowed close to them.

Away from the water the German athletes did not talk to people from other countries. They always moved in groups, separating themselves and giving an image larger than life. When you saw their athletes striding 6 abreast they looked very powerful. In the training sessions before the event they all were in a distinct uniform that looked fast. They always trained so that they were just finished as other teams arrived. Their coaches had stop watches and were yelling out with enthusiasm making it look like they were paddling great times. Minders were at the waters edge to carry their boats at the end of the session, and the media was keen to photograph and talk to them. The image that many athletes were left with was that they were machines, powerful performing machines, not people. How can one possibly beat machines like that?

This entire demonstration was part of the German Psych out plan. It was designed to get athletes from other countries distracted by these goings on, and begin to spend too much time focusing on the German athletes, imagining that they were invincible, which had the potential to be disastrous. However, if athletes are prepared for these, or similar conditions like crowds, expectations of others, etc, and have a plan in place to cope with them, there should be no real problem, because you will not notice this hype, you will be focusing only on you.

All athletes are made of flesh and blood and emotion. All athletes can be beaten. But victory is only possible if attention is focused on appropriate and meaningful task cues rather than external, irrelevant matters.

Visualisation

Visualisation is the term used to describe the activity of visualising past or future performances. This means creating a clear mental picture, together with the body feelings that go with a good performance or training session. While you have probably used visualisation already, the key is to use it regularly and systematically. The objective is to make the visualisation as similar to the real situation as possible. It is a well recognised technique which is practised by virtually all top competitors.

Visualisation is better than just thinking about your event because it actually trains your muscles to act in a particular way. You might notice for example, when you imagine yourself performing, that your muscles actually move. These are the same movements as when physically executing the skills. When you visualise you get perfect practice and this can add enormously to your performances. The following example illustrates the power of visualising.

A research study split a basketball team into 2 training teams during free throw practice. One group just sat
quietly and visualised throwing free throws for 30 minutes per day, the other group went out and actually practiced shooting free throws. When tested a month later, both groups showed significant improvement in their shooting ability.

| Research has shown that the combination of quality training and visualisation leads to better performances than quality training by itself. |

**How can you visualise to help your netball?**

- You can rehearse your technique or form before and during training to ensure quality.
- You can practice new skills in your mind, speeding up the learning process.
- Many athletes use visualisation of good performances to help them build confidence, while others think about competitive situations and imagine how they can handle them successfully. This reduces feelings of uncertainty which means greater self confidence.
- Rehearse your game plan. Many athletes have played their match hundreds of times in their head before they even get to their competition.
- You can imagine yourself on game day and rehearse your pre-competition routine. ie) relaxing, staying cool, focusing only on you, going through your warm up, stretching, final psych up, having the right arousal level for you, having only one vision that is putting everything together for your ultimate best performance.

| Important Points to Remember about Visualisation |

- Do some relaxation and breathing before visualisation training as this helps clear the mind. It will also result in less distractions.
- You must practice visualisation regularly 3 -4 times per week. It is important that you do this realistically and vividly by imagining real situations with detail, colours, sounds, people and conditions.
- Visualisation must involve all the senses.

*This will mean focusing on what you can:*

- See, Hear, Touch and Feel, Smell, Taste
Visualisation Training

Below is a form for you to use to guide your visualisation training. When you begin your visualisation it is believed best if you attempt to call up images of performance skills from the inside, as if you were inside your own bodies actually doing it. But it is also OK to have an occasional view from the side, top, back etc from the outside. The more you use visualisation the better you become at it. You have to program it into your routine and it can become part of your daily training goal.

If you want to perfect and use mental imagery to your fullest advantage, you can start by doing two things. In every training session, before you begin your work out do it in imagery as perfectly and precisely as possible. Do it in your mind as you would like it to unfold. In competitions, before the event starts, mentally recall the event focus plan, game strategies, psychological readiness feelings that you want to take into the event.

In the spaces below jot down some of the sensations which you would actually do or want to, experience during training or competition. This can be used as a guide to things you should be focusing on in your visualisation training.

**Sight**
- eg. you outplaying the opposition, seeing the ball go in the net through good technique.

**Sound**
- eg. Hearing your team mates, the sound of your runners on the floor, your breathing.

**Body**
- eg. Body feel, muscle sequencing, feel of the ball in your hands, feel of the ball as you pass or receive it, efficiency, smoothness, rhythm, the feel of when you are doing your best.

**Smell**
- eg. equipment, sweat, Sam’s farts.

**Taste**
- eg. Sweat, saliva, drink, of success!

Use these notes to guide your visualisation routine
Centring

You probably have seen many athletes centring themselves before a competition event. The tell-tale signs of someone centring is the closing of eyes, and a couple of deep breaths just prior to the start, in order to attain the correct intensity levels, to focus or refocus briefly on the key points of a competition plan, or perhaps a small snippet of visualisation, imagining that ultimate performance.

Centring is a valuable tool in our armory that can assist in many ways, and is a skill worth practicing. Just take a minute or two where ever you might be, stand with your legs slightly bent, close your eyes. Then breathe in deep feeling as if the air is coming in through your belly button and filling and energising every cell in your body. Hold it for a second or two then breath out feeling the air go out through your belly button. While you are doing this breathing you are concentrating on being “anchored” to the ground nothing can move you, you are centred.

Following is some suggested uses for it in netball.

♦ Prior to getting on the court before training just centre and revisit your goals for the session.
♦ Prior to competition go over your game plan so that you are totally focused on that and nothing else.
♦ When you feel nervous, try centring, and a few key “self talk” words to get you back on track.
♦ When things are not going the way you had planned, try centring and telling yourself, “it is OKAY, it is out of my control, just focus on the important things”.
♦ When you feel out of control, your heart is racing, the start is getting closer, you might have some negative thoughts or doubts about your ability, try centring and telling yourself to “stop”. Then refocus on your plan.
Game Focus Plan
Pre Competition Plan

Many successful athletes have a routine that they have trialed and found effective in the lead up to their competition. You need to make sure that you think about and plan out a routine that you want to follow the night before, and the hours before the competition.

Night Before
In point form document the things that are important for you to follow the night before competition. Consider, meals, fluid intake, relaxation, massage, music, visualisation, packing for race day, talking to the coach, departure time on race day.

Morning of the game
In point form develop a routine for the hours leading up to the race. Consider clothing and equipment checks, final mental pep talk telling yourself that you are ready, you have done the work. Visualisation, Centering, active warm up and stretch, let nothing distract you from your game plan. It is best if this is documented with some kind of time frame for each part of your pre race routine so that you can ensure you are not rushing around.
**Competition Reflections**

The following questions are designed to help you reflect upon your personal competitive history with the aim of helping you identify your optimum readiness for competition. This information will then be used to aid in the development of your pre-competition plan and a competition focus plan.

1. Think of your all time **best** performance(s) and respond to the following questions keeping that event(s) in mind.

   **How did you feel just before that event?**

<table>
<thead>
<tr>
<th>No activation (mentally and physically flat)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not worried or scared at all</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

   **What were you saying to yourself or thinking shortly before the start of the events(s)?**

   **How were you focused during the event (ie. what were you aware of or paying attention to while actively engaged in the performance)?**

2. Now think of your **worst** competitive performance(s) and respond to the following questions keeping that event in mind.

   **How did you feel just before that event?**

<table>
<thead>
<tr>
<th>No activation (mentally and physically flat)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not worried or scared at all</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

   **What were you saying to yourself or thinking shortly before the start of the events(s)?**

   **How were you focused during the event (ie. what were you aware of or paying attention to while actively engaged in the performance)?**

3. What were the major differences between your thinking (or feelings) prior to these two performances. (ie. Best & worst).
8). What were the major differences in your focus of attention during these performances, i.e. best and not so good.

9). How would you prefer to feel just before an important competition?

<table>
<thead>
<tr>
<th>No activation (mentally and physically flat)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly activated (mentally and physically strong)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10). How would you prefer to focus your attention during an important competition?

11). Is there anything you would like to change about the way you approach a competition or training?

12). Is there anything further that the Coach could be doing to help you during training or preparing for competitions? Is there anything that you would like the coach to change in his approach to you, that would help your preparation?
APPENDIX 8

Copy of GEQ questionnaire
Thankyou for participating in this study. The questionnaire that you are filling out is designed to assess your perceptions of your team. Your answers will help evaluate the impact of how the team is developing towards its yearly goals. You will be required to fill this same questionnaire out several times over the upcoming months. Each time you do, please take the time to complete the questions honestly.

There are no right or wrong answers, only the answer that sounds best for you, so please give your immediate reaction. Some of the questions seem repetitive but please answer ALL questions.

Your responses will be kept in strictest confidence, and only seen by those involved in the research project. You have been asked to indicate your name only so we can match up information from each player.

Name (print)  

Team Name_________________________ Date_________________________
The following questions are designed to assess your feelings about your personal involvement with this team. Please circle a number from 1-9 to indicate your level of agreement with each of the statements.

1. I do not enjoy being a part of the social activities of this team.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree

2. I am not happy with the amount of say I get.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree

3. I am not going to miss the members of my team at the end of the season.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree

4. I am unhappy with my team’s level of desire to win.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree

5. Some of my best friends are on this team.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree

6. This team does not give me enough opportunities to improve my personal performance.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree

7. I enjoy other parties more than team parties.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree

8. I do not like the style of play on this team.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree

9. To me this team is one of the most important social groups to which I belong.

   1  2  3  4  5  6  7  8  9
   Strongly Disagree
The following questions are designed to assess your perceptions about your team as a whole. Please circle a number from 1 to 9 to indicate your level of agreement with each of these statements.

10. Our team is united in trying to reach its goals for performance.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Members of our team would rather go out on their own, than together as a team.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. We will all take responsibility for any loss or poor performance by our team.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Our team members rarely party together.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. Our team members have had conflicting aspirations for the team’s performance.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. Our team would like to spend time together once the season is over.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. If members of our team have problems in practice, everyone wants to help them so we can get back together again.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. Members of our team do not stick together outside of practices and games.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. Our team members do not communicate freely about each other’s responsibilities during competition or practice.

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 9

Strategies and questions used to begin focus group interviews.
Netball Interview Schedule

- **Ice Breaker.** Paper clip on shirt. Ask the other person questions about the Kangaroo Valley Camp and what they think, they, and the team got out of the training that went on. As well as to find these things out, the underlying motive is you have to get them to say NO. If you get them to say NO, you get their paper clip. You have to try and get round and talk to as many people as you can in 5 minutes, with the goal of collecting as many paper clips as you can.

- **Card Debrief** While thinking back about the Kangaroo Valley Weekend, I want you to wander along and have a read of the cards that are on the table. As you read them, does any one of the cards strike a cord with you, as symbolising one of the things that you or the team really learnt. If it does, take a copy of the card and sit down in the circle, where I will ask you to share your thoughts with the group.

- **Finger Shoot** To get started I would like to evaluate your impressions of how you felt you went at the Nationals. Scale of 1-5. Who thinks the Adventure Experiences you had at Kangaroo Valley contributed to the success of the team. Scale of 1-5. Further questions based on their responses.

- **Teamwork Card** To win the Nationals you had to be like these snow flakes, you had to stick together. What I am really interested in this afternoon is to find out whether or not the outdoor camp had any impact on your success at the Nationals, and if you think it did, what are some of the things that you can directly pinpoint that was learnt at Kangaroo Valley, and taken into Netball?

- **Relationships within the team**

  1. I recall especially with the u/19 team in our discussion on top of Mt Carialoo some expressions of disunity or being left out of the team. What occurred after Kangaroo Valley with regards to everyone getting on, and everyone feeling a part of the team?

  2. Did anyone notice any changes in Team-unity on or off the court, with regard to A) focusing on the task of winning at Netball. B) Getting on with one another in a social setting.

  3. On top of Mt Carialoo we had a Team meeting which was a forum for communicating problems, and attempting to come up with solutions. Did the team continue to use these team meetings once back at Netball. How do you think they helped, if at all?

  4. Did the way the team handle problems that arose at Netball change in anyway?

  5. Did your experiences together provide opportunities to get to know each other in ways that never would have happened in Netball? Did this help your Netball in any way?

- **Personal Development**

  1. Could any of you describe any skills or lessons that you gained from your adventure experiences that have resulted in personal changes in the way you approach things in your life?
2. What impact did the adventure experience have on your netball game? Can you identify things you have used from the adventure training that you have used to help you directly in a Netball game?

**Team Changes**

1. What changes have you observed in the team that you can attribute directly to things you learnt on camp?

2. What aspects of the program had an impact on you that challenged your existing ways of thinking and approaching things in Netball?

3. We learnt many mental skills while on the adventure weekend. Can anyone identify where you, or the team may have been using them during practice or game situations?

4. Did the team’s ability to Concentrate and Focus at training, or in game situations change as a result of anything you learnt at the camp?

5. I know many of you participated in an adventure camp last year, what were the differences between the two? What do you think was done well by the Glengarry team? What could be improved? On a scale of 1 – 10, what would you rate the camp as being an important contributor to the teams success at the Nationals?

6. What was your perceptions of the team’s confidence levels after the weekend, was their an improved cohesion and focus on the Team Goal to win the nationals. Do you think this would have been achieved if you did not come to Glengarry?

7. Did your relationships with each other change in any way?

**Transferability**

1. Remember the strategies that the team implemented in the caves to address problems on the court. Were they put into practice at training or in matches? How did this effect performance?

2. Imagine someone from another sports team asked you whether you would recommend an adventure-based training camp for helping their team prepare for competition. What would your reply be, based on whether the camp helped you or the team perform better.

**Coaches**

Coaches you have known the girls both before and after the camp. I am interested in your observations of changes in the girls both during and after the camp and how this helped them both personally and as a team on the netball court.

1. What were your initial expectations of the program? Were they met?
2. Can you identify components of the program that were particularly effective in helping the girls develop their mental skills further?

3. Did you notice any significant changes in the team that could be directly related to what happened on the camp. What went on to make this possible?

4. Did any of the team members seem to benefit personally from the camp?

5. What were you seeing in practice or game situations that you could directly attributed as skills the girls had learnt on camp?

6. Did you the coaches gain anything from the program that helped you become a better netball coach?

7. I know you participated in an adventure camp last year, what were the differences between the two? What do you think was done well by the Glengarry team? What could be improved? On a scale of 1 – 10, what would you rate the camp as being an important contributor to the teams success at the Nationals?

8. Imagine someone from another sports team asked you whether you would recommend an adventure-based training camp for helping their team prepare for competition. What would your reply be, based on whether the camp helped you or the team perform better?
APPENDIX 10

Follow up process, after the intervention
Dear Antonia,

How are you? I hope you were not too worn out after the weekend. I was pretty tired and sore after the day of caving.

I just wanted to write to you and thank you again for the opportunity of working with you and the Netball girls last weekend. I thought it might help if I put some of my thoughts for following up the weekends successes down on paper, so as to keep the energy from the weekend going.

1. It would be good if you could make the time to meet with each of the players one on one, and discuss with them one or two goals to focus on between now and Nationals based on what they learnt from the weekend, and what you see as areas they could improve on by Nationals. There is a form in their folders (Daily Goal Setting) to guide this process. I find this is best done collaboratively with you, as it gives the players ownership of their goals, and they don’t feel that they have been imposed on them. That is where having a knowledge of one’s areas of weakness can help. Goals can then be set to strengthen these weaker areas.

2. Set time aside (where possible) after each training and continue the group discussion process we began on top of Mt Carialoo. Questions that often help the focus of the discussion include: What things seem to have improved since the camp at Glengarry? What things can we continue to work on to help us become a better team? Are there any other issues that anyone wants to bring up that they feel needs to be aired, and could help the team continue to improve? Continue with the circle we used during the debrief on Mt Carialoo.

3. When scrimmaging during training, players need to be practicing their new focus when either mistakes are made, or things are not going how they are supposed to go. Their new “KEY WORDS” have to be practiced, and the associated roles of each of the players to this word needs to be really hammered home, and drilled into the team. Ie: Its OK to make mistakes, but everyone has to encourage the player and the team to “TREE IT” and focus on basics. A pat on the back to the player who makes a mistake, and a work of encouragement like. “forget it, lets get back into it”.

4. Sit down with the team in the coming weeks and look at the teams best and worst performances, and what was the difference between both. The idea being to find what was working for both the individual players and the team when things were going well. Then to try and repeat these feelings and intensity levels in future games. (There is a sheet
in your folder to guide this process). Then, coming up with a pre-game routine to help the players reach this level of feeling and intensity has proven valuable for some teams.

5. Many of the metaphors from the weekend should evoke strong emotions with the players. It would be valuable to try and use these somehow in training and game situations. For example: Having to relax, breath out, and move through the tightest part of the cave, can be a great way to remind goal shooters to relax, when under pressure shooting. When the team is down and they need a reminder of what sticking together and working as a team can do, a call or trigger word that reminds them of the enormous effort they put in to get out of the cave without lights, could be a real lift “Out of the hole”.

Well I hope this might help, please don’t hesitate to contact me if I can be of any further assistance to the team.

I look forward to hearing from you soon about how things have progressed since the Glengarry weekend. Also, when you get a chance, could you send me details of the Nationals. Ie when, where etc.

Yours sincerely,

Ian Boyle