

DEVELOPING GROUPWORK THROUGH OUTDOOR ADVENTURE
EDUCATION:
A SYSTEMATIC EVALUATION OF LEARNING AND TRANSFER IN HIGHER
EDUCATION

by
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For the majority of students, the ability to work effectively with others is an important part of higher education and future employment. Outdoor adventure education (OAE) courses are therefore used in higher education to provide students with a unique and challenging environment for developing transferrable groupwork skills. Working in an action research setting and informed by the Kirkpatrick model of training evaluation, the aim of this thesis was to investigate students' experiences of OAE and the processes that underpin learning and transfer. Following a review of existing literature (Study 1), four empirical studies were employed using mixed methods. Qualitative methods were used to explore students' experiences whilst immersed in OAE (Study 2) and when returning to education and entering employment, from a student, alumni, academic staff, and instructor perspective (Study 3). Questionnaires were also implemented to measure changes before and after OAE (Study 4) and again at follow-up (Study 5). OAE was found to improve groupwork skills, attitudes, and self-efficacy, resulting in improved academic groupwork, greater confidence, satisfaction, integration, and employability. Transfer was not achieved in all students however, and the thesis introduces a model for optimising learning and transfer (MOLT), which outlines the personal and environmental processes through which learning and transfer was achieved. Support is provided for existing theories within the literature and practical recommendations are made to further develop OAE. Novel research methods are also introduced such as a semi-structured video diary room.

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PUBLICATIONS AND CONFERENCE PRESENTATIONS

During the period of postgraduate study within the School of Sport, Exercise and Rehabilitation Sciences at the University of Birmingham, the following articles and conference abstracts were accepted for publication and/or presentation at scientific meetings.

Publications that are part of this PhD thesis

1. **Cooley, S. J.**, Burns, V. E., & Cumming, J. (2015). The Role of Outdoor Education in Facilitating Groupwork in Higher Education. *Higher Education*, 69, 567-582. doi:10.1007/s10734-014-9791-4
2. **Cooley, S. J.**, Holland, M. J. G., Cumming, J., Novakovic, E. G., & Burns, V. E. (2014). Introducing the use of a semi-structured video diary room to investigate students' learning experiences during an outdoor adventure education groupwork skills course. *Higher Education*, 67, 105-121. doi:10.1007/s10734-013-9645-5
3. **Cooley, S. J.**, Cumming, J., Holland, M. J. G., & Burns, V. E. (2015). Developing the Model for Optimal Learning and Transfer (MOLT) following an evaluation of outdoor groupwork skills programmes. *The European Journal of Training and Development*, 39, 105-121. doi:10.1108/EJTD-06-2014-0046
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Additional publications

5. **Cooley, S. J.**, Williams, S. E., Burns, V. E., & Cumming, J. (2013). Methodological variations in sport based, guided imagery interventions using movement imagery scripts: A systematic review. *Journal of Imagery Research in Sport and Physical Activity*, 8, 1-22. doi:10.1515/jirspa-2012-0005
6. Cumming, J., Woodcock, C., **Cooley, S. J.**, Holland, M. J. G., & Burns, V. E. (2015). Development and validation of the groupwork skills questionnaire (GSQ) for higher education. *Assessment & Evaluation in Higher Education*, 40, 988-1001. doi:10.1080/02602938.2014.957642
7. Hurley, R. V. C., Patterson, T. G., & **Cooley, S. J.** (2013). Meditation-based interventions for family caregivers of people with dementia: a review of the empirical literature. *Aging & Mental Health*, 18, 281-288. doi:10.1080/13607863.2013.837145
8. Weibull, F., Cumming, J., **Cooley, S. J.**, Williams, S. E., & Burns, V. E. (2014). Walk this way: A brief exercise imagery intervention increases barrier self-efficacy in women. *Current Psychology*. Advance online publication. doi:10.1007/s12144-014-9271-0
9. Williams, S. E., **Cooley, S. J.**, Newell, E., Weibull, F., & Cumming, J. (2013). Seeing the difference: Developing effective imagery scripts for athletes. *Journal of Sport Psychology in Action*, 4, 109-121. doi:10.1080/21520704.2013.781560
10. Williams, S. E., **Cooley, S. J.**, & Cumming, J. (2013). Layered Stimulus Response Training Improves Motor Imagery Ability and Movement Execution. *Journal of Sport & Exercise Psychology*, 35, 60-71.

Conference presentations

2015

1. Cumming, J., **Cooley, S. J.**, Holland, M. J. G., Quinton, M. L., & Burns, V. E. (2015, July). "It brought my confidence back": Exploring the feasibility of a mental skills training programme for homeless young people. Paper presented at the 14th European Congress of Sport Psychology, Bern, Switzerland.

2014

2. **Cooley, S. J.**, Cumming, J., & Burns, V. E. (2014, September). Using evaluations to evolve training programs. In J. Cumming (Chair), *From planning to evaluation: The application of qualitative methods for improving the impact of training programs*. Symposium conducted at the meeting of the 4th International Conference for Qualitative Research in Sport and Exercise, Loughborough University, UK.
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4. Cumming, J., Holland, M. J. G., **Cooley, S. J.**, Quinton, M., & Burns, V. E. (2014, September). From planning to follow-up: The application of qualitative methods for evaluating different phases of training programs. In J. Cumming (Chair), *From planning to evaluation: The application of qualitative methods for improving the impact of training programs*. Symposium conducted at the meeting of the 4th International Conference for Qualitative Research in Sport and Exercise, Loughborough University, UK.
5. Gunnell, D. O. A., Hirst, C. J., & **Cooley, S. J.** (2014, November). *I'm an international exchange trainee, 'Don't Get Me Out of Here'! Developing multicultural groupwork skills and attitudes aboard a tall ship*. Paper presented at the meeting of the International Sail Training and Tall Ships Conference 2014, A Coruña, Spain.

2013

6. Burns, V. E., & **Cooley, S. J.** (2013, March). *Developing skills for successful international groupwork*. Paper presented at the meeting of the Higher Education Academy, Internationalisation in HE: Making Connections, London.
7. **Cooley, S. J.**, Cumming, J., Holland, M. J. G., & Burns, V. E. (2013, November). *A novel methodological approach to course evaluation: Introducing the use of a semi-structured video diary room to capture students' experiences whilst immersed in outdoor education*. Paper presented at the meeting of the 6th International Outdoor Education Research Conference, University of Otago, New Zealand.

8. **Cooley, S. J.**, Burns, V. E., & Cumming, J. (2013, November). *A systematic evaluation of outdoor education courses used in higher education to develop groupwork skills*. Paper presented at the meeting of the 6th International Outdoor Education Research Conference, University of Otago, New Zealand.
9. **Cooley, S. J.**, Cumming, J., Holland, M. J. G., & Burns, V. E. (2013, November). *The internationalisation benefits of outdoor education: A mixed methods study*. Poster session presented at the meeting of the 6th International Outdoor Education Research Conference, University of Otago, New Zealand.
10. **Cooley, S. J.**, Cumming, J., Holland, M. J. G., & Burns, V. E. (2013, November). *Using outdoor education to develop teamwork skills in students: Evidence for a return on expectation*. Poster session presented at the meeting of the World Outdoor Summit, Rotorua, New Zealand.

2012

11. **Cooley, S. J.** (2012, August). *The semi-structured video diary room methodology* (invited presentation). Paper presented at the meeting of TeachMeet, Higher Education Academy Annual Conference, University of Manchester.
12. **Cooley, S. J.**, Cumming, J., & Burns, V. E. (2012, July). *The use of a video diary room for collecting students' self-reflections during outdoor education team skills courses*. Poster session presented at the meeting of the Teaching and Learning Conference, University of Birmingham.
13. **Cooley, S. J.**, Cumming, J., Deery, L., Horgan, T., Novakovic, E., & Burns, V. E. (2012, August). *The use of a video diary room for collecting students' self-reflections during outdoor education team skills courses*. Poster session presented at the meeting of the Higher Education Academy Annual Conference, University of Manchester.
14. **Cooley, S. J.**, Williams, S. E. Burns, V. E., & Cumming, J. (2012, April). Variations in imagery training interventions: A systematic review. In S. E. Williams (Chair), *Imagine that! Developing imagery ability in sport, exercise, and dance*. Symposium conducted at the meeting of the British Psychological Society Annual Conference, London.
15. Cumming, J., Williams, S. E., Weibull, F., & **Cooley, S. J.** (2012, April). Moving forwards: Imagery ability research in sport, exercise and dance. In S. E. Williams (Chair), *Imagine that! Developing imagery ability in sport, exercise, and dance*. Symposium conducted at the meeting of the British Psychological Society Annual Conference, London.

16. Weibull, F., Cumming, J., Williams, S. E., **Cooley, S. J.**, & Burns, V. E. (2012, April). Improving exercise imagery ability in insufficiently active women: A brief imagery intervention. In S. E. Williams (Chair), *Imagine that! Developing imagery ability in sport, exercise, and dance*. Symposium conducted at the meeting of the British Psychological Society Annual Conference, London.
17. Williams, S. E., **Cooley, S. J.**, & Cumming, J. (2012, April). Developing sport imagery ability. In S. E. Williams (Chair), *Imagine that! Developing imagery ability in sport, exercise, and dance*. Symposium conducted at the meeting of the British Psychological Society Annual Conference, London.
18. Williams, S. E., **Cooley, S. J.**, & Cumming, J. (2012, October). *Layering images improves imagery ability and subsequent golf putting performance*. Paper presented at the meeting of the Association of Applied Sport Psychology 27th Annual Conference, Atlanta, GA.

2011

19. **Cooley, S. J.** & Cumming, J. (2011, July). *Variations in imagery training interventions: A systematic review*. Paper presented at the meeting of the Research in Imagery and Observation Group, Manchester Metropolitan University.

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GENERAL INTRODUCTION

Groupwork in Higher Education

As modern day society is made up of countless interdependent groups, the ability to function effectively when working with others is a key ingredient for a successful and fulfilling life (Goleman, 2007). Education, therefore, is not only a time for developing intellect, but also for building transferrable groupwork skills as part of what has historically been termed 'whole student development' (Brown, 1972). Higher education leaders today still emphasise the importance of whole student development, as discussed by the former Chief Executive of the Higher Education Academy,

As leaders in institutions and as educators, we must ensure that knowledge acquisition, together with personal growth and development, remain a central part of students' education - to create lifelong learners not only possessing higher level academic skills and discerning information literacy skills, but also excellent transferable skills and appropriate graduate attributes (Professor Craig Mahoney, in Quinlan, 2011, P.1).

To aid the development of groupwork skills, holistic learning environments are encouraged in which students work together and learn experientially through 'doing' as opposed to relying solely on didactic teaching methods with minimal interpersonal interaction (Dewey, 1997; Middleman & Goldberg, 1972; Quinlan, 2011). Experiential learning is a pedagogical approach that has been used for many years to improve learning within higher education, based on the work of influential scholars such as John Dewey, Kurt Lewin, Jean Piaget and others (for a review see Kolb & Kolb, 1995). The philosophy of experiential education considers learning as a process not an outcome, and that all new learning involves relearning through self-discovery and adaptation (Dewey, 1997). Incorporated within a range of different learning approaches (e.g., active learning, collaborative

learning, cooperative learning, and problem-based learning; see Prince, 2004), a large body of literature has assessed and debated the use of experiential learning within the context of higher education (e.g., Chavan, 2011; Clark, Threeton, & Ewing, 2010; Devasagayam, Johns-Masten, & McCollum, 2012; Kolb & Kolb, 1995; Peters, Jones, & Peters, 2008; Shreeve, 2008).

A student of today can expect to encounter a wealth of social learning situations alongside lectures, such as group assignments, seminar debates, practical classes, field trips, service learning, and placements abroad (Kahn, 2009). When added to the broader experiences outside of class, such as shared living, study groups, involvement in societies, clubs, sport, and socialising, it is clear that the university experience as a whole provides an environment rich with diverse and frequent group interactions.

It is perhaps unsurprising that students who are more able to navigate these social situations often fair better at university in terms of experiencing more enjoyment, self-esteem, high quality peer interactions, social support, and academic success (Cumming, Woodcock, Cooley, Holland, & Burns, 2014; Johnson, Johnson, & Smith, 1998; Prichard & Ashleigh, 2007; Prichard, Bizo, & Stratford, 2006; Prichard, Bizo, & Stratford, 2011; Prichard, Stratford, & Bizo, 2006; Scott-Ladd & Chan, 2008). In addition to benefiting the university experience, students who demonstrate competence in groupwork are also likely to find themselves more attractive to employers when entering the job market (Bennett, 2002; Branine, 2008; Confederation of British Industry, 2009; Stewart & Knowles, 2001).

Groupwork and the Workplace

Students graduating from university are now entering a job market that is more competitive than ever before (Association of Graduate Recruitment, 2011). With nearly 70 applicants for every graduate position advertised and the number of graduates increasing each year, employers are able to be increasingly selective in the preferred attributes of successful candidates (Association of Graduate Recruitment, 2011; UCAS, 2011). Studies show that graduate selection processes have become more people-orientated, with employers placing greater emphasis on attitudes, personality, and transferable skills than academic qualifications alone (Branine, 2008).

For example, Bennett (2002) analysed 1000 graduate job adverts to find out which attributes were most requested by employers. The four most requested were having skills in communication, IT, organisation, and groupwork. In another larger scale study, 581 senior executives were asked to list the most important attributes required in graduates (Confederation of British Industry, 2009). Employability skills, described as skills in groupwork and problem solving, were the most frequently desired attribute (Table 1.1).

Table 1.1
Important attributes considered when recruiting graduates

Attribute	Percentage of employers who identified the attribute as important
Employability skills (i.e., groupwork and problem solving)	78%
Positive attitude	72%
Relevant work experience	54%
Degree subject	41%
Degree result	28%
University attended	8%

This demand for groupwork skills is driven by a need for graduates to make a smooth transition into the workplace, be able to 'fit in' quickly, and function well in established team working environments (Stewart & Knowles, 2001). The importance of groupwork skills in the workplace is also supported by empirical evidence; better groupwork skills, communication between staff members, and group cohesion have been found to positively predict productivity (Daily & Bishop, 2003; Earley & Mosakowski, 2000), reduced staff turnover, and absenteeism (Denton, 1988; Mullen & Copper, 1995; Xie & Johns, 2000).

Perhaps as a result of these job market demands, and compounded by recent increases in tuition fees, students are now entering higher education with the end much more in mind, carrying high expectations of developing the extracurricular skills required for successful employment (Confederation of British Industry, 2009). Fortunately, there are many similarities between the groupwork experienced in higher education and that of work groups in employment settings, making higher education an ideal environment for practicing and developing groupwork skills (Kahn, 2009).

Developing Groupwork in Higher Education

Developing groupwork skills in higher education can be problematic for students and educators alike (Pauli, Mohiyeddini, Bray, Michie, & Street, 2008). In many disciplines, educators are responsible for covering vast amounts of specialist course content, and often are not trained, or do not have time, to help students to manage their groups (Kahn, 2009). As a result, students are regularly set group assignments and then left to their own devices with an expectation that they are

capable of handling the complexities of group working, as described by Kahn (2009):

Students are asked to create reasonably well-functioning teams. They are expected to think together and create together. They are expected to discuss ideas and perspectives that might differ quite radically from one another, and in working out those difficulties, arrive at sophisticated understandings of different types of problems and discover creative solutions to those problems. They are expected to produce, even while they hardly know one another's skills and abilities, interests and motives, or temperaments and styles (p. xi).

Some students will thrive in this environment, either due to their natural ability, previous experience, or simply having the fortune of finding themselves in a group of well-suited individuals (Johnson, Johnson, & Smith, 1998; Prichard, Bizo, & Stratford, 2006; Cumming et al., 2014; Kahn, 2009). However, other students may lack the necessary groupwork skills or struggle with group commitment, conflict, understanding group members' competencies, social loafing, and disorganisation (Pauli et al., 2008, McCorkle et al., 1999). It has also been suggested that groupwork skills form part of a person's overall 'emotional intelligence' (Gardner, 1999), with studies in higher education finding emotional intelligence to be positively related to academic performance (Austin, 2005; Jaeger, 2002; Parker, Summerfeldt, Hogan, & Majeski, 2004) and a reduction in perceived stress (Pau et al., 2007).

Studies have also shown that negative group experiences often occur during higher education and can lead to underachievement, dissatisfaction, dropout, and unfair grade distributions (Burdett, 2003; Pfaff & Huddleston, 2003). Such experiences may lead to negative attitudes towards groupwork, avoidance of future groupwork, and substandard groupwork skills to those required by

employers (Hillyard, Gillespi, & Littig, 2010; Krug, 1997; Mutch, 1998; Pfaff & Huddleston, 2003; Porter, 1993).

As a result, developing the 'whole student' is likely to require more support than just assigning students to groupwork tasks and expecting them to develop the necessary skills through experience alone (Johnson et al., 1998). It also comes with a responsibility to support and guide students in how to develop the skills to manage their groups, overcome barriers, and ensure that groupwork is a fulfilling and positive learning experience (Cumming, 2010; Hillyard et al., 2010). As a result, researchers and educators have called for more studies and initiatives in how to develop groupwork skills in students (Cumming, 2010; Wilson, 2012; Maiden & Perry, 2011). However, for these initiatives to be successful, more understanding is needed into which groupwork skills are important and how these can be developed and assessed in the context of higher education (Cumming et al., 2014).

Following a programme of research into groupwork development, Prichard, Stratford, and Hardy (2004) suggested 18 key areas required for successful groupwork at university (Table 1.2). After providing students with training in these areas, Prichard and colleagues found improvements in group performance and personal development (Prichard, Bizo, & Stratford, 2006). These findings demonstrate that groupwork training can lead to tangible benefits for students in higher education.

Table 1.2
Eighteen key areas of groupwork development in higher education (Prichard et al., 2004)

Agreeing roles	Reflection	Decision making
Creating a group environment	Awareness	Time management
Leadership	Management of change	Negotiation
Listening	Setting objectives	Conflict resolution
Co-operation	Problem solving	Feedback
Taking responsibility	Planning	Adaptability

There are also conceptual models within the literature that suggest this range of groupwork skills fall into two broad categories of ‘task management’ and ‘interpersonal’ skills (Cumming et al., 2014; Hobson, Strupeck, Griffin, Szostek, & Rominger, 2014; Stevens & Campion, 1994). Task groupwork skills are those that directly impact the completion of the task and include planning, goal setting, monitoring progress, providing feedback, and managing group roles. In contrast, interpersonal groupwork skills are those that focus on creating a positive and supportive group environment, such as conflict resolution, understanding others, clear communication, and providing encouragement and social support. It is argued that students require knowledge, skills, and abilities in both these areas of groupwork for successful group functioning (Steven & Campion, 1994).

Further, Cumming and colleagues (2014) found that students who report using more task and interpersonal groupwork skills at university are likely to have more belief in their ability to work in groups and a more positive attitude towards groupwork. This finding highlights the importance of developing attitudes and self-efficacy towards groupwork, alongside the groupwork skills themselves. That is,

positive attitudes and self-efficacy towards groupwork may be an important prerequisite to improving groupwork behaviour in students (Ajzen, 1991).

Developing Groupwork through Outdoor Adventure Education (OAE)

Due to the demands of managing groups and developing the different aspects of groupwork alongside academic work (Pauli et al., 2008; Wosnitza & Volet, 2014), a popular intervention used to facilitate groupwork development is outdoor adventure education (OAE).

Broadly speaking, OAE is defined as,

A variety of teaching and learning activities and experiences usually involving a close interaction with an outdoor natural setting and containing elements of real or perceived danger or risk in which the outcome, although uncertain, can be influenced by the actions of the participants and circumstances (Ewert & Sibthorp, 2014, p.5).

When used in higher education, OAE typically involves students leaving campus and spending a period of days in a remote outdoor environment where they take part in challenging outdoor pursuit activities. Here, students are able to experiment with different group behaviours away from the pressures of academia, in an environment that is safe, yet unpredictable (Cooley, Burns, & Cumming, 2015; Vlamis, Bell, & Gass, 2011). Instead of placing the responsibility of groupwork development with academic staff, students are in the hands of specialist outdoor instructors, who are trained in group development. An intense period of time is spent practicing and reflecting on how groups function, overcome barriers, and succeed (Allison & Von Wald, 2010; Sibthorp, Furman, Paisley, & Gookin, 2008). On their return to university, it is expected that the OAE experience will have accelerated students' development of groupwork skills,

leaving them better equipped to meet the demands of university and prepared for continued development (Cooley, Burns, & Cumming, 2015; Prince & Dunne, 1998).

The focus of the present thesis is on the use of OAE and its ability to develop transferrable groupwork skills in higher education. This general introduction chapter has therefore been organised into three main sections: groupwork in higher education, the foundations of outdoor adventure education, and methodology. The following section on the foundations of outdoor adventure education includes an introduction to the historical foundations of OAE, the theoretical perspectives commonly used to support OAE, and the transfer of outcomes from OAE. The methodology section provides an overview of the research stance taken in this thesis, methodology used, the aims and objectives of the empirical chapters, and the OAE programme investigated.

Foundations of Outdoor Adventure Education

The roots of OAE are often considered to date back to ancient philosophy (Bisson, 2009). In the 4th and 5th Centuries BC, Socrates, Plato, and Aristotle were all supporters of 'whole person development' and argued for education to incorporate intellect with emotional, physical, and spiritual development that is 'hands-on' and experiential (Wurdinger, 1997). These early teachings remained influential right through to 17th, 18th, and 19th century philosophers Comenius, Rousseau, and Pestalozzi, who believed in developing the whole person through an interaction with the natural world (Bisson, 2009; Wurdinger, 1997). It was the basis of their vision that went on to inform the 'camping movement' in the 19th century, where

outdoor adventure became a popular recreational pursuit for the masses (Raiola & O'Keefe, 2009). Following the camping movement, youth movements were founded in the late 19th and early 20th century, such as the YMCA, Boy Scouts, Girl Guides, and public school programmes, which is when outdoor adventure activities became a popular educational tool for developing core moral values in young people (Everard, 1993; Richards, 1991).

However, this early use of OAE was relatively unstructured compared to that of today because there was less understanding of how the outdoors could be best utilised (Mortlock, 1984). Learning had been believed to occur solely from spending time in the outdoors, and that outcomes occurred incidentally, rather than through the facilitation of trained instructors (Gass & Stevens, 2007; Mortlock, 1984). This traditional model of learning was termed the 'mountains speak for themselves'. However, OAE later became more structured, with pre-determined objectives and activities designed to accelerate and frame certain outcomes during periods of reflective discussion (Gass & Stevens, 2007).

Modern day OAE is in part credited to Kurt Hahn, an educator from Germany whose philosophy of developing the whole person through outdoor education was influenced by that of Plato, the youth movements, Sir Robert Baden-Powell (Scout movement), Dr Cecil Reddie (education reformist), and Thomas Arnold (public school headmaster and historian) (James, 2000). In 1933, Hahn moved to the UK and opened a public school based on self-discovery and social development. One of Hahn's early pupils was Prince Philip who later became the Duke of Edinburgh and endorsed Hahn's 'County Badge' outdoor

education programme, which is now known today as the Duke of Edinburgh Award Scheme (Richards, 1991; Bisson, 2009).

One of the most historical turning points for OAE came in 1941, when Hahn founded the first Outward Bound School in Aberdovey, Wales. This school was established with the backing of Lawrence Holt, a shipping magnate in the Second World War (Richards, 1991; James, 2000). Holt wanted to use challenging outdoor education courses to prepare young sailors for the stress and adversity of war; however, once established, courses at Outward Bound catered for all manner of professionals, youth on leave from school, and those joining the army (Richards, 1991; Miner, 1999). A few years later, Francis Scott founded Brathay Hall Trust in 1946, which used a similar philosophy to Outward Bound to facilitate young peoples' transition from school to the workplace (Everard, 1993).

Another key figure in the expansion of OAE was Paul Petzoldt. Following the spread of Outward Bound to America, Petzoldt was inspired to found the first National Outdoor Leadership School (NOLS) in 1965, which had an added focus on environmental awareness, risk management, and safety in the outdoors (Bachart, 1999). Using the models set out by Outward Bound and NOLS, OAE spread globally and, from the 1970s, it began to not only focus on developing youth, but also used in industry to develop employees, and in higher education to develop students (Hopkins & Putnam, 1993; Ibbetson, 1997). In the United States of America, the Association for Experiential Education was founded, and in 1974, held its first North American conference on outdoor pursuits in higher education (Bisson, 2009). In the late 1977, Petzoldt and a group of academic professors founded the Wilderness Education Association (WEA), which encouraged higher

education institutions to embed outdoor education courses within their degree programmes (Bisson, 2009; Teeters & Lupton, 1999). Due to these historical developments, OAE courses are now found incorporated into university degree courses across the world (Cooley, Burns, & Cumming, 2015).

It is important to note that the spread of OAE has resulted in numerous variations of outdoor learning experiences along with different terms used to emphasise nuances within the phenomena (e.g., outdoor learning, challenge education, wilderness education, environmental education, outdoor orientation programmes, outdoor management education, and many more). Although the term OAE was chosen in the present thesis, alternative terms such as outdoor learning could be equally appropriate. Therefore, a detailed description of the outdoor programme under investigation is provided towards the end of this chapter to enable the reader to make their own judgment as to the nature of the programme and the subsequent transferability of findings to other types of programmes.

To keep within the scope of this thesis, the focus has been specifically on short, group-based, residential OAE courses used in higher education. However, considerable work has been done in researching the educational outcomes of other types of outdoor programmes. For example, in the UK alone, other research studies have included experiences of outdoor management development (Donnison, 2000; Greenaway, 1995; Ibbetson, 1997), Outward Bound used within Scottish secondary schools (Christie, 2004), and the supporting of marginalised youth in becoming agents of social change (Loynes, 2008), among others. For broader reviews on the outcomes and historical use of outdoor education and

outdoor learning in the UK, see Ogilvie (2013), Dillon and colleagues (2006), Nicol (2002), and Allison and Telford (2005).

Theoretical Foundations of OAE

The popularity and spread of OAE is in part credited to the various conceptual theories and models that have been used to explain why OAE is an effective and unique vehicle for learning (Prouty, Panicucci, & Collinson, 2007). This theoretical support can be classified into four broad areas: experiential theories based on learning ‘by doing’; theories based on learning through optimal arousal; theories surrounding the outdoor environment; and theories related to learning in groups (Figure 1.1). Each will be discussed in turn.

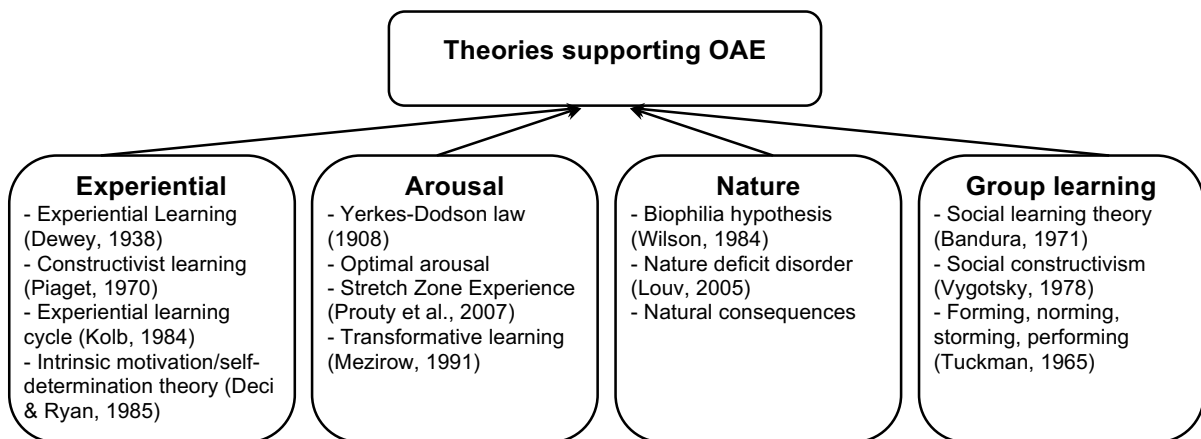


Figure 1.1. Theories commonly used in support of Outdoor Adventure Education (OAE)

Experiential

Due to the hands-on, experience-based activities that form the bases of OAE, one of the theories most commonly used in support of OAE is experiential learning theory. This theory is accredited to John Dewey following his publication of *Education and Experience* in 1938. At a time when formal education predominantly comprised traditional, didactic approaches, Dewey supported the idea that all genuine education comes through experience. Instead of traditional ‘teach and tell’ methods, Dewey argued that educators should create an environment where learning has the potential to occur through interacting with the environment and self-discovery. Experiential learning is said to result in learning that is more relevant and personally meaningful, increasing the chances of learning being retained and built upon in future experiences (Dewey, 1938). Experiential learning theory is also closely related to Piaget’s constructivist view of learning, which describes how learning occurs through direct interactions with the world, where people formulate personal concepts that are continually contradicted and adapted as new experiences are accommodated (Piaget, 1970).

Dewey also warned that a reliance on didactic methods of learning could result in experiences that are mis-educative, whereby students lose interest, focus, and the desire to learn (Dewey, 1938). In contrast, experiential learning is believed to create an optimal mindset that facilitates learning and avoids states of boredom. A deep engagement in learning is achieved through an intrinsically interesting learning experience that has relevant goals (Dewey, 1938). When intrinsic interest is high, the experience does not require extensive cognitive energy to maintain attention, and goals are reached often subconsciously (Dewey,

1938; Sibthorp et al., 2015). This experience could, for example, be likened to working in a team to complete an obstacle course, where the task itself is fun and engaging and the learning of effective groupwork behaviours comes almost as a by-product. In comparison, a state known as 'drudgery' occurs when a goal-relevant activity is uninteresting. In this case, effortful attention is required to maintain focus and the activity becomes cognitively fatiguing (Sibthorp et al., 2015).

The importance of being intrinsically motivated to engage in an activity is also reflected in self-determination theory (Deci & Ryan, 1985). Self-determination theory proposes that a learning environment that satisfies three fundamental human needs will foster intrinsic motivation and the tendency for personal growth. These three basic needs are competence (e.g., a feeling that the activities during OAE are within your capability), relatedness (e.g., a feeling of closeness and belonging to your group), and autonomy (e.g., having some control over your behaviour and the challenges faced during OAE). Research has shown that if these needs are thwarted, intrinsic motivation will decrease to the point where engagement may only remain if extrinsic motivators are present (e.g., rewards and punishments) and the quality of functioning and personal growth will decay (Deci & Ryan, 1985).

In support of self-determination theory, a positive association has been found between intrinsic motivation and increased effort, curiosity, enjoyment, positive coping styles, optimal functioning, social development, higher quality learning, and personal well-being (for a review see Ryan & Deci, 2000). In fact, many of these areas have been identified as outcomes of OAE (Ewert & Sibthorp,

2014; Hattie, Marsh, Neill, & Richards, 1997), perhaps due to the fun, engaging, experiential, cohesive, and supportive environment often found within OAE, which in most cases is likely to satisfy the three basic needs and foster intrinsic motivation.

However, to ensure OAE goes beyond simply being an enjoyable time away, and instead becomes a learning experience that is enjoyable, learning needs to be recognised and internalised by participants. To help ensure learning is realised during an experiential activity, Kolb (1984) introduced the experiential learning cycle. The cycle (Figure 1.2) depicts how periods of 'reflective observation' should be encouraged following an activity, or 'concrete experience', such as building a raft whilst following rules and a time limit. This reflection then leads to 'abstract conceptualisation', a process where the lessons learnt from the activity are generalised to form new rules and concepts that apply to similar situations. For example, the reflection following a poorly designed raft build may identify poor communication as a possible cause resulting from dominant group members taking charge and forgetting to include the ideas of a quieter member of the group, who may have a wealth of relevant sailing experience to contribute. During abstract conceptualisation, group members may decide that in all future group-based activities it is important to hear everyone's ideas before diving into a task. This new way of thinking then leads on to 'active experimentation' where these ideas are put into practice and the cycle continues.

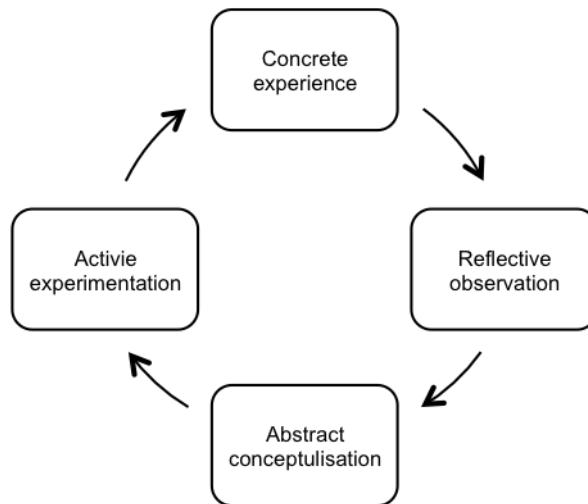


Figure 1.2
The experiential learning cycle (Kolb, 1984)

Arousal

The OAE environment provides challenge, adventure, and usually some degree of perceived or actual risk. This risk could be physical (e.g., a fear of injury), social (e.g., a fear of showing yourself up in front of peers), and/or emotional (e.g., a fear of discovering something you are not good at) (Ewert & Sibthorp, 2014). However, when managed correctly, this cocktail of adventure, challenge, and danger can lead to powerful and memorable learning experiences. As a result, another selection of theories surrounds the tendency for learning to occur through experiencing high levels of arousal.

According to the Yerkes-Dodson law (1908), performance improves in response to physical or mental arousal. Following an inverted U-shaped curve, performance peaks when an optimal level of arousal is reached, at which point performance becomes inhibited as arousal increases further (Yerkes & Dodson, 1908). Based on this premise, OAE is often associated with the theory of stretch

zone experiences (Prouty et al., 2007). It is believed that individuals commonly have three zones or states of mind. At the centre is the comfort zone, which is where an individual is in a situation or environment where they feel at ease and at equilibrium. Around the edge of the comfort zone is the stretch zone, which represents an environment that contains a manageable amount of uneasiness and disequilibrium. Surrounding the stretch zone is the panic zone, which represents the situations or environments that cause an unmanageable amount of anxiety and disequilibrium. In general, experiences in the stretch zone are believed to result in optimal arousal, increased focus and effort, and memorable learning (Prouty et al., 2007). Although the stretch zone is widely accepted, and grounded in popular theories such as the Yerkes-Dodson law (1908) and Festinger's (1957) theory of cognitive dissonance, it has received little empirical testing within the educational literature and has been recommended as a metaphor rather than an empirical model (Brown, 2008).

Similar to the stretch zone, the idea of learning through high arousal experiences is also supported by the theory of transformational learning (Mezirow, 1991). Transformative learning is believed to occur when faced with a novel situation, which puts previously held assumptions (i.e., perceptions and habits) into question, and encourages new ways of thinking (Mezirow, 1991; O'Sullivan, 2002). Mezirow (2000) suggests that this novel situation could result in a 'disorienting dilemma', prompting an individual to engage in critical self-reflection and social interaction, in order to build competence and self-confidence as new learning occurs. In this view, an arousal provoking experience such as OAE, may result in a catalyst for growth, or a 'turning point' in one's general life trajectory

(Gotlib & Wheaton, 1997; Furman & Sibthorp, 2012). Previous studies have supported OAE in its ability to lead to transformative learning (e.g., D'Amato & Krasny, 2011). However, it has been argued that OAE does not always need to involve an element of perceived risk for the experience to be transformative (Brown, 2008). Instead, it is suggested that the greatest amount of change occurs when environments promote safety, acceptance, and security (Davis-Berman & Berman, 2002; Brown, 2008). Therefore, high arousal learning might not necessarily require actual or perceived risk.

Nature

Along with the experiential and high arousal elements of OAE, another fundamental element is the outdoor environment. The biophilia hypothesis (Wilson, 1984) suggests that human beings have an instinctive need to bond with the natural world. This innate bond is considered to be a result of humans' evolutionary history being embedded within natural environments, whereby survival once depended on an attraction to landscapes that had more potential for survival, such as lakes, high ground, and trees that can be climbed (Wilson, 1984; Kahn, 1997). As a result, time spent in the outdoors is considered to be 'good for the soul' and responsible for numerous psychological and physical benefits surrounding mood, anxiety, relaxation, attention, physical recovery, mental health, and self-concept (Neill, 2008, Kahn, 1997).

In relation to the biophilia hypothesis, Louv (2005) more recently introduced the term 'nature deficit disorder', which is believed to occur as a result of humans spending increasingly less time in the outdoors. Based on the psychoevolutionary

argument, it is proposed that urbanisation has increased at a faster rate than genetic evolution, resulting in human beings that are not optimally designed for domestic lifestyles (Maller, Townsend, Pryor, Brown, & St Leger, 2006). This alienation from nature is considered debilitating for social, emotional, and physical development, which can result in attention difficulties, diminished use of the senses, frustration, and increased physical, psychological, and social disorder (Louv, 2005; 2010; Maller et al., 2006). However, reengagement with the outdoors, such as through OAE, is considered to provide an important 'reconnection', which may improve or even 'cure' these deficits (Neill, 2008; Louv, 2005; 2010). Studies in adventure therapy do indeed suggest that OAE can result in improvements to anxiety, disruptive behaviour, substance use, health behaviour, locus of control, self-control, and self-efficacy (Bowen & Neill, 2013; Richards & Peel, 2005).

Another possible explanation for the beneficial effects of the outdoors is the natural consequences it provides. Learning through mistakes or 'trial and error' is common practice in experiential learning (Dewey, 1938). However, when combined with the unpredictability of the great outdoors, this learning process is enriched by the naturally occurring consequences to errors (Tozer, Collins, & Hathaway, 2011). It is believed that natural consequences, such as falling into mud if a task is failed, or having to swim in cold water when a raft falls apart, are more powerful than rules created artificially (e.g., a poor grade in an assignment). It is also believed that natural rules are more likely to be accepted and considered a fair consequence, compared to artificial rules, which are more likely to be met with greater resistance (Kimball & Bacon, 1993).

Group learning

A final selection of theories used to support OAE are those that surround the benefits of learning in groups. From a social learning theory (Bandura, 1971) and social constructivism perspective (Vygotsky, 1978), learning is considered to be a product of a reciprocal relationship between a person and their social and cultural environment. Bandura (1997) demonstrated how learning could occur not just through one's own experiences, but also through the observation of others (i.e., modelling and vicarious reinforcement). Within social constructivism, Vygotsky (1978) introduced the zone of proximal development, which is the difference between what an individual can achieve on their own and what they could achieve through collaboration with others. Indeed, the learning and understanding achieved by a well functioning group is likely greater than what each single group member could achieve on their own (Quay, 2003).

However, before a newly formed group reaches this state of synergy, the group must first go through a process of development. Following a meta-analysis of studies on group development, Tuckman (1965) developed a four-stage process model explaining group formation. The first stage is called 'forming', which is when a group first comes together and the initial bonds and a sense of belonging are developed. This stage is followed by 'norming', during which time group roles emerge and group rules and values are installed as members get to know each other better. Next is a stage called 'storming', where conflict occurs due to challenges faced, limits and boundaries are tested, and roles are often changed. Finally, 'performing' is the final stage whereby the group becomes established, conflicts are resolved resulting in a more mature group, and

performance becomes more optimal. OAE has been shown to provide an ideal environment where, due to the intense group interaction and challenges faced, a groups' progress through the four stages is accelerated (Priest & Gass, 2005; Rushmer, 1997).

Theories developed within OAE

In the words of Ewert and Sibthorp (2014), "Most of our theories [theories within OAE] are borrowed from other fields, such as psychology, sociology, and education" (P.61). There are however, a select few theories that have been constructed specifically within the context of OAE. One of the most popular of these is the Outward Bound process model (OBPM; Walsh & Golins, 1976). The model highlights the seven key elements of OAE, which include having a motivated learner, a novel outdoor environment, a social group context, challenging and engaging problem-solving, adaptive dissonance, feelings of mastery when overcoming this dissonance, and the realisation of new learning (Table 1.3). As shown in Table 1.3, each of these key elements of the OBPM can be seen to map onto aforementioned theories.

Table 1.3

The Outward Bound process model (OBPM; Walsh & Golins, 1976) and associated theories

Element of the OBPM	Description	Associated theories
The learner	A learner who brings with them past experiences and a willingness to learn	Internal motivation and self-determination theory (Deci & Ryan, 1985)
Physical environment	An environment that is novel and stimulating	Theories regarding the outdoors and natural consequences (e.g., Biophilia hypothesis, Wilson, 1984; Nature deficit disorder, Louv, 2005)
Social environment	A small group context with shared goals and tasks that require teamwork	Social learning theory (Bandura, 1971), Social constructivism (Vygotsky, 1978)
Problem solving tasks	A set of activities that are holistic, progressive, and achievable	Experiential learning (Dewey, 1938), Constructivist learning (Piaget, 1970)
Adaptive dissonance	A manageable amount of uncertainty and discomfort that requires adaption and coping skills	Optimal arousal (Yerkes & Dodson, 1908), stretch zone experiences (Prouty et al., 2007)
Mastery	A feeling of accomplishment and competence when overcoming the dissonance	Transformative learning (Meizerow, 1991)
Realisation and transformation of new learning	Recognising the meaning and generalisability of the achievement and new learning	The experiential learning cycle (Kolb, 1984), Transformative learning (Meizerow, 1991)

The importance of all seven elements has been supported in both quantitative (e.g., Sibthorp, 2003) and qualitative (e.g., Mckenzie, 2003) explorations of the model. Particular attention has been paid to the final element of the OBPM- 'realisation and transformation of new learning', which highlights the importance of learning transfer from OAE to other settings. This is a crucial step as for OAE to be considered effective it is important to measure what goes on after the OAE experience has finished (Sibthorp, Furman, Paisley, Gookin, & Schumann, 2011). A main aim of this thesis was therefore, to not only investigate what development occurs during OAE, but also to assess learning transfer after

students have returned to university. To inform the approach taken to achieve this aim, the following section explores the concept of learning transfer.

The Transfer Concept

Transfer is a complex and multifaceted concept. Since Gass published a review on transfer following OAE 30 years ago (Gass, 1985), the transfer debate has grown along with different opinions on how transfer should be conceptualised. Before researchers attempt to measure transfer, Ford (2011) recommended having a clear definition of transfer to inform what exactly is expected to be transferred and therefore measured.

There are two contrasting theoretical perspectives commonly used to view transfer: the cognitive perspective and the situative perspective (Brown, 2010; Gass & Seaman, 2012). Historically, transfer has been viewed from a cognitive perspective, which explains that a participant of OAE stores new knowledge and skills in memory and recognises opportunities to apply them in new situations (Brown, 2010). From a cognitive perspective, learning transfer would typically be defined as, for example,

The extent to which the knowledge and skill acquired in a learning setting are applied to different settings, people, and/or situations from those trained ... and the extent to which changes that result from a learning experience persist over time (Blume, Ford, Baldwin & Huang, 2010, pp. 1067-68).

Followers of the cognitive view seek evidence that skills or knowledge have been acquired, retained, and applied (Singley & Anderson, 1989). However, Furman and Sibthorp (2012) suggest that more research is needed within OAE to quantify

the frequency of skill application following a course, and length of time participants are able to continue to apply skills.

The cognitive perspective has also received opposition. First, researchers point out that the skills and behaviours expected to change through OAE may have been developed over a lifetime of prior experiences, and measurable skill acquisition may not be visible immediately following a relatively short intervention such as OAE (Brookes, 2003; Furman & Sibthorp, 2012). Second, the cognitive view of transfer is criticised for separating learning from context (Gass & Seaman, 2012), whereby transfer is viewed as a “passive carryover and deployment of learning” (Carragher & Schliemann, 2002, p. 19), which fails to account for the complex interactions that occur between a person and the dynamic environment they are in (Brown, 2010).

As a result, some researchers suggest moving away from a cognitive view of transfer to considering the outcomes of OAE from a situative perspective (Brown, 2010). Situative theorists believe that learning during OAE is bound within the context and learning community it is developed in, and that when a person is taken out of that situation and placed in a new environment and learning community, their behaviour will be determined by external contextual factors such as the setting, goals, resources, and people, rather than what was learnt during OAE (Brown, 2010; Gass & Seaman, 2012). Therefore, rather than investigating whether a ‘product’ is transferred from one context to another, it is instead argued that we should investigate how OAE changes the way a person interacts with their environment and their approach to new situations (Brown, 2010; Furman & Sibthorp, 2012). A typical definition of transfer from a situative perspective would

be, for example, “when prior knowledge and skills affect the way in which new knowledge and skills are learned and performed” (Leberman, McDonald, & Doyle, 2006, p.2). This definition suggests that transfer is a continual process where previous learning influences further learning in a cyclical manner, much like in the experiential learning cycle (Kolb, 1984).

Gass and Furman (2012) attempt to bring the cognitive and situative perspectives together by suggesting encompassing both perspectives in the concept of transfer, when seeking to understand and evaluate outcomes of OAE. This more inclusive approach to measuring transfer was used in the present thesis by taking a mixed methods approach to assess skill acquisition during OAE, and the subsequent retention and application back at university (i.e., cognitive transfer) whilst simultaneously measuring students’ attitudes, self-efficacy, and behaviour towards groupwork, to understand any changes in their views and approaches (i.e., situative transfer).

In addition to defining what constitutes transfer, it is also important to consider the type of transfer process under evaluation. First, transfer can either be ‘simple’ or ‘complex’ (Leberman et al., 2006). Simple transfer is where the learning and transfer environments are very similar and there is minimal passing of time between learning and transfer (Brown, 2010; Gass & Seaman, 2012). An example of simple transfer is when the groupwork skills developed during one OAE activity are transferred to the next activity (i.e., the group and environment remain the same and the activity/objectives are also similar). In comparison, complex transfer is where the learning and transfer environments are very different, where there is a longer duration between learning and transfer, and

where transfer opportunities may be less obvious and require more effort and awareness (Leberman et al., 2006; Yelon & Ford, 1999). An example of complex transfer is transferring groupwork skills developed during OAE to an academic groupwork project several weeks later (i.e., a different environment, group members, and activity).

Second, transfer can also be 'specific' or 'non-specific' (Leberman et al., 2006). Specific transfer is where the skills learnt have a clear beginning, middle, and end, and are replicated almost identically in an environment that is stable and predictable (e.g., a closed skill such as tying a knot). In contrast, non-specific transfer involves transferring more general skills that need to be continually modified to suit the dynamic environment they are to be used in (e.g., an open skill such as groupwork).

The transfer of groupwork skills from OAE to university is therefore classified as a complex and non-specific transfer. This type of transfer is believed to be the most beneficial for future learning because the ability to generalise and adapt learning means it can go on to influence a variety of situations (Detterman, 1993). However, it is also considered the most difficult type of transfer to achieve, as it is more difficult to train, has a more rapid decay over time, and requires greater support in the transfer environment (Barnett & Ceci, 2002; Salas, Milham, & Bowers, 2003; Sibthorp et al. 2008). Further, in a meta-analysis, Blume and colleagues (2010) found that non-specific transfer is more affected by factors such as experience, motivation, self-efficacy, knowledge, and the transfer environment. This finding reinforces the need for the present thesis to not only measure whether

transfer occurs following OAE, but also the factors that might influence the transfer process.

It is also important to acknowledge that transfer cannot always be considered as a product or outcome, which has either occurred or not occurred. Instead, Foxon (1994) offers a model of the transfer process, which conceptualises transfer as being a dynamic process of change. In her model, Foxon describes 5 steps of the transfer process that begins with having an intention to transfer, followed by transfer initiation (i.e., an attempt to apply what is learnt). These initial stages may then lead to partial transfer (i.e., some learning is transferred in a sporadic manner), transfer maintenance (i.e., consciously maintaining the transfer of learning over a period of time sufficient for permanent behaviour change), and finally, unconscious transfer (i.e., the optimal form of transfer that does not require effortful thought). It is recommended that individual effort, as well as external support and prompting, is required for a learner to progress through these stages of transfer, and transfer failure can occur at any point. It is not clear as to the extent to which this model is empirically grounded or tested, or whether it is instead devised based on observations of the training and development literature (e.g., Foxon, 1989). Nevertheless, the model highlights the need to include measures of transfer intentions, conscious effort, and the opportunity and support provided, when evaluating transfer, rather than measuring the outcomes of transfer alone.

Methodology

Evaluating OAE

Whether for economic, practical, or educational reasons, there are increasing calls for training and interventions of all kinds to demonstrate impact through evaluation. In sport psychology, this need for evaluation has been termed 'the age of accountability' (Smith, 1989). Although the field of OAE has a long history, it is not considered to be a densely populated area of research and there are only a small number of scholars actively conducting research in the field (Ewert & Sibthorp, 2014). Nevertheless, evidence has steadily grown and there are now a number of reviews and meta-analyses that synthesise the available research (e.g., Hattie et al., 1997; Ewert & McAvoy, 2000; Gillis & Speelman, 2008). In the most comprehensive meta-analysis of 96 studies by Hattie and colleagues (1997), 40 different outcomes of OAE were identified, which formed six categories: academic; leadership; self-concept; personality; interpersonal; and adventuresome. The interpersonal category alone comprised a variety of improvements in cooperation, communication, social competence, and different interpersonal skills and behaviours.

Although such evidence exists, there are important gaps remaining within the OAE literature. First, the majority of research has focused on the outcomes of OAE and less so on the processes behind these outcomes, commonly described as the 'black box' (i.e., what goes on during OAE that influences the extent of the positive outcomes achieved) (Allison & Pomeroy, 2000). As a result, empirical support for many of the theories used to explain practices within OAE is lacking, with only a selection of studies providing this type of evidence (e.g., Sibthorp,

2003; McKenzie, 2003). Ewert and Sibthorp (2014) tabulate this available evidence, and whilst the extent of theoretical support (i.e., prevalence of theories, concepts, and models) is classed as 'medium' or 'high' for each of the different practices used within OAE, the corresponding empirical evidence for these theories is deemed as 'low' or 'medium' (p.148).

A second point to highlight is the variation between OAE programmes and participants. OAE courses are described as having "extremely diverse; settings, populations, missions, designs, staffs, and funding streams ... This diversity leads to many different curricular designs, program models, and philosophies." (Ewert & Sibthorp, 2014, p.154). The duration of OAE alone can range from a few days up to several months, and recipients vary from students and adults to children and disaffected youth (Hattie et al., 1997; Gillis & Speelman, 2008). There are also considered to be at least five different objectives of OAE: recreational (i.e., leisure, enjoyment, outdoor skills, and physical fitness); educational (i.e., learning subject knowledge outside the classroom); developmental (i.e., developing personal, social, and life-skills); therapeutic (i.e., improving dysfunctional behaviour); and environmental (i.e., developing awareness, attitudes, and knowledge of the outdoor environment and sustainability), all of which have different course designs and approaches (Neill, 2008).

Meta-analyses have shown these variations between OAE (e.g., course length, population, programme objectives) to have significantly different sized effects on the outcomes observed (Hattie et al., 1997; Gillis & Speelman, 2008). As a result, it is difficult to generalise outcomes across different forms of OAE (Cooley, Burns et al., 2015). Therefore, rather than conducting a broad literature

review of all types of OAE (such as that of existing reviews, e.g., Hattie et al., 1997; Ewert & McAvoy, 2000; Gillis & Speelman, 2008), Chapter 2 of this thesis instead comprises a literature review that is the first of its kind to focus specifically on OAE when used to develop groupwork in higher education.

The following section outlines the research stance that was taken when undertaking this thesis, including the epistemology, methodological approach, methods used, and author reflections.

Research Stance

Epistemology is the theory of knowledge, whereby different researchers typically have different views and criteria for distinguishing between what they consider as knowledge and what they consider a belief (Koshy, Koshy, & Waterman, 2011; Creswell, 2009). As the goal of research is to generate knowledge, a researcher's view of epistemology influences their methodological approach (e.g., experimental, quantitative, qualitative, mixed method, etc) and the methods they use (e.g., sampling, questionnaires, focus groups, statistical analysis, etc) to generate knowledge (Gray, 2014). Epistemology may also influence whether knowledge is developed 'inductively' or 'deductively'. Gray (2014) explains that "deduction begins with a universal view of a situation and works back to the particulars" and in contrast, "induction moves from fragmentary details to a connected view of a situation" (p.16).

Examples of different epistemological perspectives include the 'positivist' approach, which denotes that an objective reality exists that is external to the researcher. Knowledge of this reality must be gained through rigorous and scientific enquiry that does not include the feelings and values of the researcher

(Creswell, 2009). Researchers from a positivist perspective will typically formulate and test hypotheses using a deductive approach, look for causality, and apply quantitative methods that can be generalised to a wider population (Koshy et al., 2011). In contrast, researchers from a 'constructivist' epistemological perspective believe that knowledge is socially constructed and typically obtained through an interactive and qualitative enquiry, often with the aim of constructing theories and models from the data via an inductive approach (Koshy et al., 2011; Gray, 2014).

A more modern epistemological approach is taken in the present thesis, known as the pragmatic view or 'pragmatism' (Patton, 2003; Creswell, 2009).

Creswell (2009) describes pragmatism in this way,

Pragmatism is not committed to any one system of philosophy and reality. This applies to mixed method research in that inquirers draw liberally from both quantitative and qualitative assumptions when they engage in research... In this way, researchers are free to choose the methods, techniques, and procedures of research that best meet their needs and purposes (pp. 10-11).

Pragmatists are therefore driven by the intended consequences of the research and use the best available methods for their research question and where they intend to go with it (Creswell, 2009). As described by Gray (2014), a pragmatic approach will often include a combination of inductive and deductive methods. It may begin by exploring a phenomenon inductively, which leads to hypothesis testing and working theories that are further tested and applied deductively. It is important to note, however, that taking an initial inductive approach does not mean that pre-existing ideas and theories are not taken into account. Instead these theories are used to guide the purpose of the research, rather than setting out to empirically test, corroborate, or falsify a theory (Gray, 2014).

Based within the pragmatic epistemology, the methodological approach taken in the present thesis was a mixed method approach, guided by action research. The primary purpose of action research is to produce practical knowledge, solutions, and understanding that can be used to inform and influence practice (Koshy et al., 2011). This holistic approach to research involves a cycle of observing, reflecting, planning, and acting (Reason & Bradbury, 2008). However it should be noted that a full action research cycle is not presented within the scope of this thesis, as practical changes have been implemented and reassessed in subsequent studies that followed this thesis. Koshy and colleagues (2011) describe the approach as “context-bound and participative. It is a continuous learning process in which the researcher learns and also shares newly generated knowledge with those who may benefit from it.” (p. 9). The research findings are therefore meaningful to practitioners though being rooted in the reality of the applied setting.

Compared to experimental research, a researcher within an applied setting typically has less control over their chosen methods (Thomas, Nelson, & Silverman, 2005). That is, it is often the research setting that drives the selection of methods that can be accommodated within it (Patton, 1998). Although experimental research designs may be deemed the gold standard due to high internal validity and an ability to infer causation, they are often impractical in applied settings (Anderson, Miles, Mahoney, & Robinson, 2002; Thomas et al., 2005). For example, when evaluating OAE in the present thesis, it was not possible to offer OAE to one randomised group of students and withhold it from

another, and there were also confounding variables in the natural environment that could not always be measured or controlled.

Unfortunately, in some psychological disciplines, little research exists because experimental designs are wrongly assumed to be the only research approach of value (Anderson et al., 2002). However, non-experimental methods and single-sample case study designs using questionnaires and/or qualitative interviewing are common practice within education, clinical, and sport psychology research and are considered highly valuable (Anderson et al., 2002; Dowling & Leibowitz, 1994). A case study is described as “an empirical investigation of a particular phenomenon within its real life context using multiple sources of evidence” (Robson, 1993, p. 146). The design does not require a control group and can instead be strengthened by using multiple dependent measures, triangulation, replication across samples, and measuring potentially confounding factors that may help to explain outcomes (Anderson et al., 2002; Smith, 1988). Although a case study approach cannot prove outcomes are caused by an intervention, it can demonstrate an association between the intervention and the outcomes measured, offering some confidence in the intervention outcomes, and can also be used to improve the intervention (Anderson et al., 2002; Smith, 1988,).

In the present thesis, a pragmatic, single sample, non-experimental approach was taken. This approach was strengthened through triangulation, mixed methods, multi-perspectives, and measuring of both outcomes and their underpinning processes. Some consider the use of mixed methods to stem from ‘post positivists’, who switch between quantitative and qualitative methods ill informed of their contrasting epistemological foundations, and with a tendency to

treat the quantitative findings as the 'greater truth' (see Culver, Gilbert, & Sparks, 2012; Denzin, 2010; Lincoln, 2010). However, in sport psychology, the use of mixed methods is widely accepted as being grounded within the pragmatist epistemology (Culver et al., 2012; Giacobbi, Poczwardowski, & Hager, 2005). Indeed, Giacobbi and colleagues (2005) discuss how both methods can be used harmoniously within an 'equivalent status' design, whereby both contribute equally to the final results and neither is more valued than the other. Along with being treated with an equal status, the mixed methods used in this thesis were also structured using an evaluation framework called the Kirkpatrick model of training evaluation (Kirkpatrick, 1994; referred to herein as the Kirkpatrick model).

The Kirkpatrick Model

Kirkpatrick (1976, 1994) offers a framework comprising four levels of criteria for the evaluation of training. Due to its simplicity, systematic nature, and use of multiple indicators of training effectiveness, the Kirkpatrick model is the most popular approach used in organisations to evaluate training (Bates, 2004).

Although designed for the evaluation of occupational training, the model has been effective when used in education research (Praslova, 2010). The four levels of assessment are Reaction, Learning, Behaviour, and Results (Table 1.4). Levels 1 and 2 focus on outcomes that occur from pre- to post-training, where as Levels 3 and 4, focus on transfer, involving what goes on after training has finished (Bates, 2004).

Table 1.4
The four-level Kirkpatrick model (Kirkpatrick, 1994)

Kirkpatrick Level	Definition	Example measures
Level 1 - Reaction	Participants' initial reaction to a training programme	Affective response (e.g., enjoyment, satisfaction with the instructor) and instrumental response (e.g., perceived relevance to future work)
Level 2 - Learning	Learning that has occurred during the course of the training programme	Changes in skills, attitudes, and/or knowledge from pre- to post-course
Level 3 - Behaviour	The extent to which training results in behavioural changes when participants return to their day-to-day working/living environment	Application of skills, maintaining esteem, attitudes and/or knowledge, and improved working styles and/or approach to situations
Level 4 - Results	Overall impact of the training on goals and objectives, at an individual or organisational level	Improved productivity, performance, and/or achievement

There have been criticisms of the Kirkpatrick model, which are addressed in this thesis. These typically revolve around three main arguments. The first is that the Kirkpatrick model oversimplifies training effectiveness by only focusing on outcomes and not processes (Bates, 2004). As mentioned earlier, process measures should be included to uncover what it is that makes training effective, potential areas for improvement, and to inform theoretical concepts (Chelimsky, 1997; Bates, 2004). In response to this criticism, this thesis utilises the Kirkpatrick model as a framework to explore outcomes *and* processes, at each of the four levels. Using the Kirkpatrick model in this way makes it more aligned with alternative training evaluation models, such as the input, process, output model (IPO; Bushnell, 1990) and the context, input, process, product model (CIPP; Worthen & Sanders, 1987), which also advocate the measurement of outcomes and processes, but are less commonly used within the training evaluation literature. The term 'processes' has been adopted in this thesis from

organisational literature surrounding training evaluation and the Kirkpatrick model, where it is used to describe a broad range of factors that influence training outcomes (e.g., factors surrounding the training process itself, as well as individual learner characteristics). These processes could, however, also be thought of as 'contributing factors'.

A second argument surrounds causality, whereby an assumption is often made that the levels represent a causal chain, with a positive reaction needed for learning to occur, and learning being a prerequisite for transfer (Holton, 1996). Research however, has found little evidence to suggest correlations between each of the levels (Gessler, 2009; Alliger, Tannenbaum, Benett, Traver, & Shotland, 1997). Third, it is often assumed that the relative importance of outcomes increases as you move up the levels. Whereby behaviour change is more important than positive reactions, and results, at Level 4, is the ultimate goal of any training intervention (Giangreco, Carugati, & Sebastiano, 2010). However, this assumption is considered incorrect, as training interventions have different aims and designs that may place greater importance at different levels of the Kirkpatrick model (Giangreco et al., 2010). For example, in higher education, using OAE to provide students with an enjoyable learning experience and enhance 'student satisfaction' (Level 1), may be equally as valuable as improving their groupwork behaviour within a group assignment (Level 3).

In response to these arguments, although relationships between the levels of the Kirkpatrick model are tested within this thesis, the model is primarily used to guide a systematic evaluation into four distinct areas. All of which may be equally

important objectives for the use of OAE in higher education, whether they are causally related or not.

Thesis Overview

The main aims of this thesis were fourfold:

- a) to review existing research that is specific to OAE and its use in higher education to develop groupwork;
- b) to investigate the short and long-term outcomes for students, at each level of the Kirkpatrick model;
- c) to investigate the processes behind these outcomes in order to improve understanding of how learning and transfer is achieved, identify potential improvements, and inform existing and new theoretical models;
- d) to further develop existing methods of training evaluation to aid in applied research.

To achieve these aims, five empirical chapters are presented, each with their own specific aims and objectives (Figure 1.3).

Chapter 2 aimed to synthesise the existing OAE literature and inform the subsequent studies in this thesis. The objective was to implement a clear search strategy to identify studies that matched the type of OAE referred to within this thesis, and to critique study designs and outcomes measured.

The aim of Chapter 3 was to explore students' learning experiences and reactions to OAE (Levels 1 & 2 of the Kirkpatrick model). This was achieved by using a novel video diary room method and purposive sampling, to understand the outcomes and processes students experience whilst they are immersed in OAE.

In Chapter 4, the aim was to replicate and extend the findings from Chapter 3, by seeking to understand students' experiences of learning and transfer following OAE (i.e., all four levels of the Kirkpatrick model). The objectives here

were to implement pre, post, and follow-up methods of qualitative data collection (i.e., another video diary room, 1-to-1 interviews, and focus groups) and collect data from multiple perspectives (i.e., students, alumni, academic staff, and instructors). A model is also presented in this chapter, which provides key recommendations for optimising learning and transfer following a training experience.

To triangulate findings from Chapters 3 and 4, the thesis takes a quantitative approach in Chapters 5 and 6. In Chapter 5, the aim was to quantify reactions to OAE and the changes in groupwork from pre- to post-course, as well as to assess predicting/mediating variables (Levels 1 and 2 of the Kirkpatrick model). To do this, questionnaires were implemented pre- and post-course to measure students' enjoyment and course evaluation and changes in groupwork skills, attitudes, and self-efficacy. Regression and mediation analyses are also used to explore some of the processes behind reaction and learning.

The aim of Chapter 6 was to continue on from Chapter 5 by quantifying the transfer of groupwork outcomes after students return to university, again assessing the strength of predicting/mediating variables (Levels 3 and 4 of the Kirkpatrick model). The objective here was to implement a follow-up questionnaire 3-months after students have returned, to assess groupwork skills, attitudes, self-efficacy, behaviour change, and academic benefits. Similar to Chapter 5, regression and mediation analyses are also used to explore the processes behind learning transfer.

Finally, Chapter 7 offers a general discussion relating to the present findings, how they advance the theoretical and empirical literature, practical

implications, limitations, and future directions. A schematic overview of this thesis is displayed in Figure 1.3. Further, as the studies were conducted concurrently over a 3-year period, Table 1.5 provides an overview of the dates at which data collection and analysis took place for each study during this period.

As versions of these chapters are either published (Chapters 2-4) or under review (Chapters 5) as independent publications, there is a degree of repetition between chapters, particularly in terms of the studies' background and preceding literature. Due to the different peer review processes and journal word limitations, there will also be minor differences between the chapters presented in this thesis and their corresponding journal article publications.

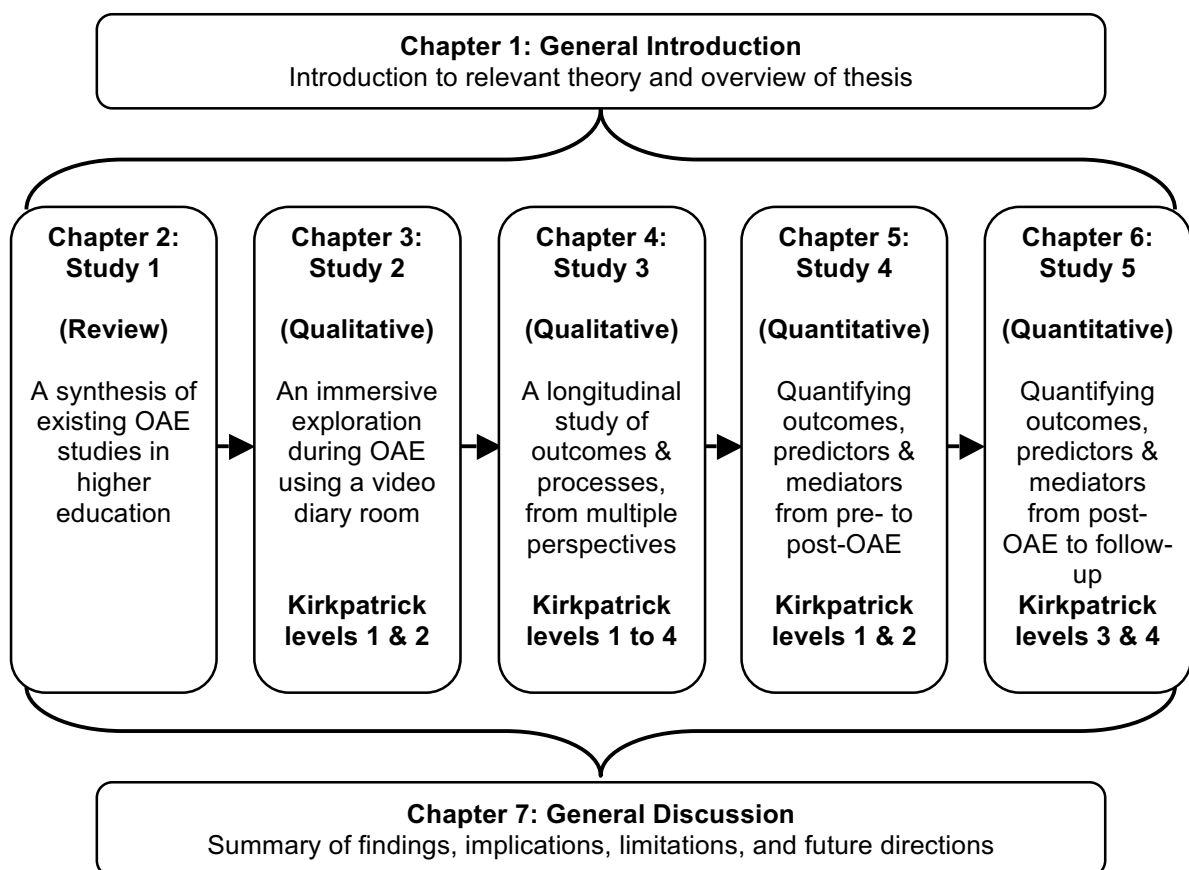


Figure 1.3
Thesis overview

Table 1.5
A timeline of data collection and analysis during the course of the PhD

		Sept 2011	→	Sept 2012	→	Sept 2013	→	Sept 2014
Study 1 (Review)	Data collection	[Hatched area]						
	Analysis	[Hatched area]						
Study 2 (Diary room)	Data collection	[Hatched area]						
	Analysis	[Hatched area]						
Study 3 (Multi-method)	Data collection	[Hatched area]						
	Analysis	[Hatched area]						
Study 4 (Part 1, pre/post)	Data collection	[Hatched area]						
	Analysis	[Hatched area]						
Study 4 (Part 2, follow-up)	Data collection	[Hatched area]						
	Analysis	[Hatched area]						

My Background and Reflections

To promote greater transparency and understanding of the research process, it feels necessary to provide a brief background to me, the researcher, which will be the only part of this thesis to be written in the first person. I began my PhD after having completed an undergraduate degree in sport and exercise sciences, with a particular focus in sport and exercise psychology. Aside from my involvement in organised sport, I have always been a keen consumer of the ‘great outdoors’. This experience has been at a recreational, rather than professional level. I therefore embarked on this PhD with an appreciation and interest for how outdoor activities can be used for personal development, but not with having had prior experience as an outdoor educator. Funding for my studentship was provided internally within the University of Birmingham, by University Birmingham Sport, who manages the Raymond Priestley Centre, and by the College of Life and Environmental Sciences.

When reflecting back on my PhD journey, it is clear that I didn’t set out with a fixed understanding of my epistemological standpoint. I believe that I was

initially influenced by a positivist background and dependence on quantitative methods, gained from my BSc years. This thinking was evident at the beginning of my PhD in my desire to conduct randomised control trials to assess efficacy, before I soon realised such approaches were to be impossible within the constraints of my research setting. My early focus on measuring outcomes was also evident when selecting studies to include in my review in Chapter 2. Whereas my first qualitative study in Chapter 3, resulted in two separate thematic maps, revealing both outcomes, and the experiences leading to those outcomes. The latter, in many ways, was of more interest, and therefore played a key role throughout the rest of my thesis.

I also began this thesis with the intention of being as objective as I could within my research, being careful to keep my own opinions and biases separate from my data. This resulted in me observing courses discreetly as to reduce my 'interference' with what I was observing. I also chose not to keep a formal record of my own reflections during these field observations to include in my analysis. These decisions are something I later felt would have added another valuable dimension to the research. For example, I would often observe group reflective discussions during activities, and then afterwards, be privy to the candid, individual reflections within the video diary room, which occasionally revealed more open and self-critical accounts than what individuals shared with their group. Contrasting these two viewpoints within my analysis could have been very interesting.

In considering different ways of understanding a phenomena, whilst balancing the affordances of an applied research setting, my outlook during the

PhD, I feel, became more aligned with that of a pragmatist. My appreciation for the more constructivist way of thinking has also grown alongside my experience with qualitative methods.

To aid the interpretation and generalisation of findings from the empirical chapters that follow, the final section of this general introduction chapter describes the OAE course used by the University of Birmingham, which was the focus of the studies within this thesis. This particular OAE programme was established in Coniston, Cumbria following a rich history of outdoor education within the University of Birmingham.

The OAE Course

During the 1940s, small groups of students at the University of Birmingham began taking part in camping, cycling, and canoeing expeditions led by the Assistant Director of Physical Education, Max Madders, and with the support of arctic explorer and then Vice-Chancellor, Sir Raymond Priestley. For a number of years these expeditions took place across the UK and lasted several weeks at a time. However, to conserve the outdoor programme and staff time, and to expand the outdoor activities on offer, a base camp was founded at Hoathwaite Farm in Coniston, Cumbria. The first camp at Hoathwaite took place in 1947, where students camped for up to 6-weeks in a field with no facilities, overlooking Coniston Water. Activities included sailing, canoeing, fell walking, and climbing, with the senior students leading the activities. After using the site for many years, the University of Birmingham purchased the land and began constructing an outdoor pursuit centre in 1976. By 1981, a 40-bed centre was completed and

named the Raymond Priestley Centre. The centre comprises staff and student quarters, lounge area, games room, kitchen, bathrooms, drying room, workshop, and meeting rooms, and allows courses to be run almost all year round. The University employs a small team to run the centre, which includes a Centre Manager, an administrator, four full-time instructors, one full time trainee, nine casual instructors who are contracted when required, and three part time housekeeping staff. There are typically four or five instructors required at any one time to deliver programmes. The instructors hold numerous qualifications from different recognised professional bodies, such as Mountain Leader and Winter Mountain Leader, the Single Pitch Award and International Industrial Rope Access for climbing and ropes courses, British Canoeing Open Canoe, Kayak, Sea Kayak (both senior and advanced instructor level), White Water Safety Rescue, Royal Yachting Association Sailing, Windsurfing, Powerboat, Mountain Bike, and Outdoor First Aid. Instructors also engage in continued professional development courses in groupwork development and reflection such as those provided by the Institute of Outdoor Learning. In addition, the instructors use peer mentoring and training, feedback forms, and reflective meetings to ensure they follow a standardised approach across courses.

The Raymond Priestley Centre currently caters for over 1200 students each year (Raymond Priestley Centre, 2014), who come from a wide range of disciplines across the university. Courses typically last between two and five nights and aim to:

- Provide students with an experience of working together in a small community and the common challenges of groupwork;

- Increase awareness of what is required for effective groupwork (e.g., group roles, effective communication, taking other views into account, and resolving problems);
- Improve relationships among academic staff and their students;
- Prepare students for future academic groupwork;
- Facilitate integration and familiarity between students of different nationalities and backgrounds (N. Beech, Centre Manager, personal communication, March 13, 2012).

A typical course begins with students leaving the university campus by coach at 8am and arriving at the centre at midday. On arrival, lunch is provided along with a briefing and a frontloading, reflective discussion surrounding effective groupwork. The rest of the day is spent doing a series of 30 min group icebreaker activities, such as the 'Spiders web', which involves passing group members through a web of rope and tyres, without using the same passage more than once or touching the sides. Another icebreaker example is 'GPS', which involves the group having to plan for, and then navigate across rough terrain towards a target, whilst blindfolded and tied together. Free time is given in the evenings for socialising, housekeeping duties, and any preparation required for the following day. On Day 2, students progress onto slightly longer activities such as building a bridge across a trench, reaching the top of a tree by stacking crates, ropes courses, and mountaineering. The final day may include, for example, an orienteering exercise, canoeing, or raft building, before groups debrief, have lunch, and leave early afternoon. The activities used in a course vary depending on the weather and the particular group taking part, with the centre authorised to provide anyone of the following pursuits:

Abseiling;
Artificial wall climbing;
Canoeing;
Ghyll scrambling;
Gorge walking;
High and low ropes courses,
Hill walking,
Improvised rafting;
Kayaking;
Mountain biking;
Mountaineering;
Orienteering;
Rock climbing;
Sailing;
Wild camping;
Windsurfing;
and Zip wires.

All of the activities are designed to require groups to work together and, at the end of the programme, a 'treasure key' activity is often included, which involves each group having to solve a puzzle using the points they have collected throughout the course. Following the experiential learning cycle (Kolb, 1984), the instructors lead regular reflective discussions before, during, and after activities.

Although for many years students and staff have believed in the benefits resulting from courses at the Raymond Priestley Centre, very little research into the courses had previously been carried out. In 2012, the Birmingham Evaluating Skills Transfer (BEST) project at the School of Sport, Exercise and Rehabilitation Sciences, was founded by Dr Jennifer Cumming and Dr Vikki Burns, and set out to conduct an independent evaluation of OAE in higher education. The Raymond Priestley Centre was used as a case study for this research. In support of the proposed research project, manager of the Raymond Priestley Centre, Norman Beech commented:

The BEST project is chartering water seldom navigated. Considerable anecdotal evidence suggests outdoor learning programmes have a huge role to play in learning and development; however, research into this has historically been very thin. The BEST project will provide a robust set of data and crucially assist to develop [the Raymond Priestley Centre] further (N. Beech, personal communication, August 10, 2012).

Undertaking this research project was the objective of the present thesis.

Study 1:

THE ROLE OF OUTDOOR ADVENTURE EDUCATION IN
FACILITATING GROUPWORK IN HIGHER EDUCATION

A version of this chapter has been published under the following reference:

Cooley, S. J., Burns, V. E., & Cumming, J. (2015). The Role of Outdoor Education in Facilitating Groupwork in Higher Education. *Higher Education*, 69, 567-582. doi:10.1007/s10734-014-9791-4

Introduction

Groupwork is inherent to a variety of educational practices such as active, collaborative, cooperative, and problem-based learning (Prince, 2004). In higher education, students experience groupwork within research, written and oral assignments, projects, seminars, laboratory work, study groups, extracurricular activities, and in their wider social context. Success in these arenas requires skills in cooperation, communication, problem solving, leadership, time management, and role allocation (Prichard, Bizo, & Stratford, 2006). When applied to groupwork, these types of skills are referred to interchangeably as teamwork, collaborative, or interpersonal skills. For clarity, this review adopts the term groupwork skills. Improving groupwork skills is likely to increase students' enjoyment, positive attitudes, satisfaction, and academic achievement during higher education (Cumming, 2010; Prichard, Bizo, et al., 2006; Springer, Stanne, & Donovan, 1999).

There is also evidence that groupwork skills are in high demand when entering employment. Analysis of job advertisements and employer and student surveys have shown groupwork skills to be one of the most sort after attributes in graduates (Bennett, 2002; Branine, 2008; Confederation of British Industry, 2009). This demand is driven by workplace studies showing effective groupwork skills to be associated with higher performance, more positive attitudes, error reduction, decreased staff-turnover, and absenteeism, and even reduced mortality rates in hospitals (Earley & Mosakowski, 2000; Morey et al., 2002; Mullen & Copper, 1995; Neily et al., 2010; Xie & Johns, 2000).

Although groupwork is widely embedded within higher education curriculum, an assumption is made that students are able to function well in groups, and that simply assigning students to conduct work in groups will further develop their groupwork skills (Homan & Poel, 1999; Prichard, Stratford, & Bizo, 2006). As a result, institutions provide limited support to students on how successful groupwork can be achieved (Homan & Poel, 1999; Johnson, Johnson, & Smith, 1998). As groupwork can be intellectually and emotionally demanding, explicit training is advocated to actively facilitate the development of groupwork skills and prevent negative outcomes (Burdett, 2003; Mutch, 1998). Poorly functioning groups may result in negative attitudes towards groupwork and a preference for working alone (Krug, 1997; Pfaff & Huddleston, 2003; Porter, 1993). Furthermore, studies show that graduates' groupwork skills are not always developed to the level required within the work place (Athiyaman, 2001; Confederation of British Industry, 2011; Ghulam & Bagley, 1999). Such findings reinforce the need to provide more effective groupwork skills training during higher education. In response to criticism for failing to develop students' ability to work in groups, some universities provide students with structured outdoor pursuit courses as a way of developing these skills (Buller & McEvoy, 1990; Porter & McKibbin, 1988; Steiner, Arthur, & Beech, 2008).

Outdoor Adventure Education

For the present review, we have conceptualised outdoor adventure education (OAE) as structured activities in the outdoors, which have the explicit intention of offering opportunities to practice, and reflect on, groupwork behaviours in a safe

yet unpredictable environment (Hattie, Marsh, Neill, & Richards, 1997). These are distinct from more recreational holidays or courses whereby the nature of the activities may be similar (e.g., raft building), but lack the elements of challenge, experimentation, and structured and/or facilitated reflection (Steiner et al., 2008).

Several theories have been used to explain the benefits resulting from OAE. One of the earliest is Dewey's experiential learning theory (1938), which emphasises the importance of learning through direct experiences. As opposed to traditional classroom settings, OAE instructors typically do not dictate what is learnt to students, but instead create an environment where learning has the potential to occur through exploration and reflection (DeLay, 1996). Experiential learning promotes a deeper approach to learning and, as a result, students are more likely to remember and apply what was learnt in the future (Dewey, 1938; Dart et al., 2000). Kolb's (1984) learning cycle is commonly used to explain how a concrete experience, such as working in a group to build a raft, leads to reflection, the development of new concepts and experimentation of these concepts when faced with new experiences, as the cycle continues (Figure 2.1). By following this cycle, students will be able to adapt their learning to different situations (Kolb, 1984).

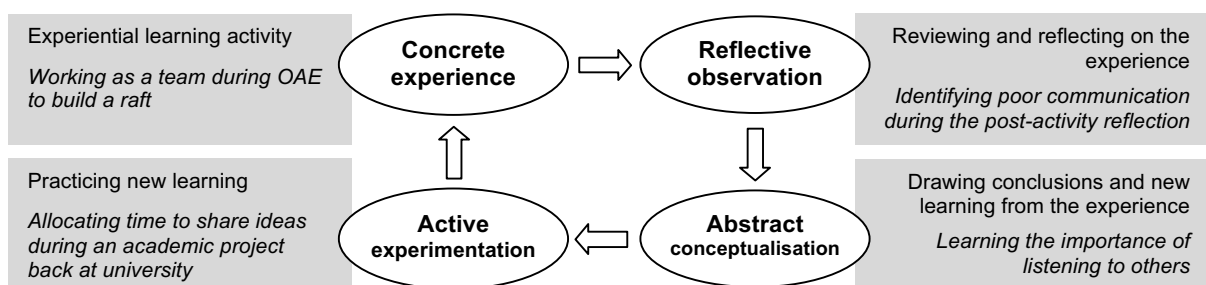


Figure 2.1
Kolb's (1984) experiential learning cycle with examples from groupwork development during OAE in higher education

Other theories supporting OAE surround the fundamental importance of the outdoor environment. In the model of the outward bound process, Walsh and Golins (1976) describe how the unfamiliar and unpredictable environment challenges previous beliefs, values and emotions, resulting in a state of cognitive dissonance, or heightened arousal, which leads to adaptive behaviour, an increased sense of accomplishment, and new learning. This idea is supported by the theory of transformative learning (Cranton, 1994; Mezirow, 1995) and stretch zone experiences (Prouty, Panicucci, & Collinson, 2007), which describe how an individual who is outside of their comfort zone forms new cognitions or learning patterns as they cope with the experience. A challenging and novel environment can also encourage social interaction and self-reflection, promoting the development of groupwork skills and increases in self-confidence (Mezirow, 2000). Tozer, Collins, and Hathaway (2011) discuss how an element of perceived risk found in the outdoor environment allows students to experience physical consequences when making mistakes. For example, a team failing to build a suitable raft could result in swimming in a cold lake. These naturally occurring consequences or 'rules' are considered to be more powerful and more likely to be accepted as 'fair game' (Kimball & Bacon, 1993), compared to group development activities that take place inside the classroom, where challenges are based on contrived scenarios with rules that are artificially imposed.

Early support for OAE came in the 1950s and 1960s, mainly from testimonials as providers were reluctant to formally evaluate programmes due to the risk of finding non-significant outcomes (Arvey, Cole, Hazucha, & Hartanto, 1985; Fletcher, 1971). Later, during the 1970s, 1980s, and 1990s, outcomes

began to be more systematically measured, but these studies were criticised for not using dependable measures, adequate sample sizes, control groups, measures of interaction effects, and not specifying the type of OAE programme used (Hattie et al., 1997). During the past two decades, studies in OAE have continued to increase along with reviews of the literature.

Previous Reviews

Hattie and colleagues (1997) conducted a meta-analysis of 96 studies that measured a variety of outcomes of OAE. A total of 40 benefits were found, clustered around six main themes: interpersonal, academic, self-concept, personality, leadership, and adventuresome. The interpersonal theme revealed developments in groupwork skills, cooperation, trust, communication, friendliness, sensitivity to others, and social competence. Further, a small to moderate effect size (.34) in measures taken immediately after OAE, increased by a further .17 (total effect size = .51) in studies that included follow-up measures, suggesting that the benefits accrued during OAE continue to impact individuals after they return home. In a narrative review by Ewert and McAvoy (2000), the range of outcomes following OAE were categorised into three themes: (a) self systems, which involved the development of an individual's knowledge and beliefs (e.g., attitudes, self-esteem, self-concept, and self-efficacy); (b) therapeutic outcomes, including benefits for troubled youth, mental health patients, and family development; and (c) group dynamics and development, including increases in group cohesion, cooperation, organisation, and problem-solving. Another meta-analysis of 44 studies by Gillis and Speelman (2008) supported the findings from

Hattie and colleagues. There was an even larger pre- to post-course effect size of .45; however, in contrast to Hattie and colleagues, this effect size decreased to .23 in follow-up measures taken by 12 of the studies. The most frequently measured outcomes were self-concept (29% of studies) and group dynamics, which included groupwork skills, cohesion, and group effectiveness (21% of studies).

Previous reviews clearly support OAE in developing groupwork skills. However, a number of issues prevent the generalisation of these findings to OAE commonly found in higher education. First, previous reviews include a variety of course types and lengths. Two common types of OAE are outdoor-centred courses, which involve living in an indoor centre and taking part in structured outdoor activities that are designed to accelerate the development of specific outcomes over a relatively short period of time (e.g., high ropes courses); and wilderness programmes, also known as survival courses or expeditions, which are usually longer, more expensive, and involve living outdoors and taking part in more strenuous activities (e.g., sailing) (Jostad, Paisley, & Gookin, 2012; Mazany, Francis, & Sumich, 1997). Although wilderness programmes do feature in higher education for a select few, outdoor-centred courses are typically used when OAE is embedded within degree courses to develop groupwork across large numbers of students (Steiner et al., 2008). Due to the different learning experiences found between these types of OAE, the learning outcomes cannot be generalised across course types. For example, Hattie and colleagues (1997) found that outdoor-centred courses have similar effect sizes immediately after the experience but wilderness programmes have greater effect sizes in follow-up measures. Further,

longer OAE experiences have been associated with more positive outcomes (Gillis & Speelman, 2008; Hattie et al., 1997).

Second, previous reviews include a range of populations, such as patients, employees, students, school children, troubled youth, and adults, which have also been associated with different sized outcomes following OAE. For example, Gillis and Speelman (2008) found effect sizes to be greater in school-aged children and older adults, compared to university students. Finally, the success of OAE varies between different outcomes that are measured. Hattie and colleagues (1997) found follow-up measures of increased groupwork skills to be smaller than increases in self-concept, whereas Gillis and Speelman found the opposite to be true.

The heterogeneous samples included in previous reviews have provided valuable insight into the variety of outcomes and differences between course types, durations, populations, and foci. Yet, in the concluding words of Hattie and colleagues (1997), “Only some adventure programs are effective, and then on only some outcomes” (p. 29). When focusing on a specific type of OAE, used within a specific population to obtain a specific outcome, one cannot rely on these generalised effect sizes and conclusions alone. Furthermore, whilst some researchers believe that learning transfer from OAE to participants’ day-to-day lives is well supported in the literature (Gass & Seaman, 2012), others believe that evidence of transfer is insufficient (Furman & Sibthorp, 2012). Establishing whether transfer of learning occurs is considered fundamental with regards to all forms of education (Desse, 1958). However, OAE research is often criticised for assuming, rather than systematically evaluating, transfer (Tozer et al., 2011). The

present review is the first to focus specifically on outdoor-centred courses in higher education, with the aim of addressing whether transferable groupwork outcomes are effectively obtained.

Method

The method of study selection was in part aligned to that of a systematic review, in that a comprehensive search strategy was used to reduce bias. An inclusive approach was also taken, whereby both quantitative and qualitative studies were included, and no studies were excluded based on perceived weaknesses in study quality (Suri & Clarke, 2009). However, as study quality issues have previously been highlighted in the wider OAE literature, the methods used by studies were critically appraised in the present review.

Search Strategy

A literature search was conducted with studies required to meet the following inclusion criteria:

- undergraduate or postgraduate student samples;
- structured outdoor-centred courses designed to develop groupwork; and
- groupwork related outcomes measured, including skills, attitudes and/or performance, using either quantitative or qualitative assessments.

Electronic searches were carried out through bibliographic databases: Applied Social Sciences Index and Abstracts, PsycINFO, Web of Knowledge, and Google Scholar, using key search terms: outdoor, adventure or experiential in conjunction with education, pursuits, program, training or learning; along with teamwork, team skills, groupwork, interpersonal skills, personal and social

development or higher education. Manual searches were also conducted using reference lists, previous reviews, citation indexes, and online journal archives. The search was completed by July 2013 and resulted in seven peer reviewed journal articles, two published conference extended abstracts and one book chapter, all published between 1991 and 2014. One article was made up of two separate studies; therefore, a total of 11 studies were included in the review.

Results and Discussion

A summary of the studies included in this review are displayed in Table 2.1.

Course Characteristics

The studies were conducted in the UK, USA, New Zealand, and Malaysia. The number of OAE students within each study ranged from 22 to 590 ($M = 133$, $SD = 172$) and samples were mixed gender and included a range of cultures. Most of the samples were from Master of Business Administration (MBA) programmes ($n = 4$), whilst others comprised of undergraduate students in Law, Engineering, Sport Sciences and Physical Education, Computer Systems, and Medicine, with two using a mixed sample of undergraduate students. For the majority of studies ($n = 9$), OAE was embedded within the degree course and all students were encouraged to take part; in two studies, OAE was optional. Authors described a range of reasons for why OAE was incorporated into higher education; the groupwork-related objectives revolved around four themes:

Table 2.1
A summary of studies included for review

Author(s)	Publication	Participants	Type of control group (n)	Location	OAE length (days)	Data type	Measurement time point(s)	Data collection method	Analytical technique used	Outcome theme
Elkin (1990)	Book chapter	28 MBA students	Previous year group	New Zealand	3	Qualitative	Post (10 days)	Open ended questionnaire, observation and student records	None specified	Groupwork skills, improved student work groups, integration, and degree success
Rushmer (1997)	Journal article	22 MBA students	None	UK	3	Qualitative	During	Open-ended questionnaire	None specified	Improved student work groups, positive attitude towards groupwork, and integration
Mazany et al. (1997) (Study 1)	Journal article	75 MBA students	Different degree course (11)	New Zealand	3	Quantitative	Pre and post (2 weeks)	Performance in group exercise and questionnaire	Statistical	Improved student work groups
Mazany et al. (1997) (Study 2)	Journal article	Not reported	None	New Zealand	4	Quantitative	Pre and post	Questionnaire	Statistical	Improved student work groups
Prince & Dunne (1998)	Journal article	152 1 st year Law undergraduate students	None	UK	1	Qualitative	Post	Open ended questionnaire, observation and student records	None specified	Groupwork skills, positive attitude towards groupwork
Ferguson et al. (2001)	Conference abstract	88 CIS students	None	USA	2 x 1	Quantitative	Post (2-7 months)	Questionnaire	Manual inspection of means	Integration
Odello et al. (2008)	Journal article	43 mixed undergraduate students	None	USA	0.5	Quantitative	Pre, post and follow-up (6 weeks)	Questionnaire (Paxton, 1998)*	Statistical	Positive attitude towards groupwork

Table 2.1 - Continued

Author(s)	Publication	Participants	Type of control group (n)	Location	OAE length (days)	Data type	Measurement time point(s)	Data collection method	Analytical technique used	Outcome theme
Harun et al. (2010)	Conference abstract	590 sport science and PE undergraduate students	Different degree course (89)	Malaysia	-	Quantitative	Pre, post and follow-up	Questionnaire (LEQ)*	Statistical	Groupwork skills
Juriza et al. (2011)	Conference abstract	222 undergraduate medical students	None	Malaysia	3 x 4	Quantitative	Pre and post (6 months)	Questionnaire	Manual inspection of means	Groupwork skills
Vlamiš et al. (2011)	Journal article	72 mixed undergraduate students	Selected not to attend (101)	USA	6	Quantitative	Pre, post (3 months) and follow-up (6 months)	Questionnaire (CSDTI-2)*	Statistical	Integration
Cooley et al. (2014)	Journal article	40 Engineering undergraduate students	None	UK	3	Qualitative	During	Video diary room	Thematic analysis (Braun & Clarke, 2006)	Groupwork skills, improved student work groups, positive attitude towards groupwork, and integration

Note. MBA, Master of Business Administration; CIS, Computer Information Systems; LEQ, Life Effectiveness Questionnaire (Neill, 2000); CSDTI-2,

Condensed Student Development Task Inventory-2 (Gass, 1986); *, psychometrically validated questionnaire.

- Developing transferable groupwork skills for students to apply in different group situations that they may experience during higher education and when entering employment (e.g., communication, leadership, supportiveness, assertiveness, reviewing, conflict resolution, and self-awareness)
- Building existing student work groups in preparation for formal academic group projects within those groups (e.g., trust and cohesion within the group, and the groups' ability to make decisions, plan, review, and perform)
- Developing a more positive attitude towards groupwork (e.g., confidence, perceived benefits, and team spirit)
- Increasing social integration within degree courses (e.g., support networks and friendships, frequency of informal groupwork behaviour, and interaction between staff and students)

The length of a single OAE course ranged from half a day to 6 days ($M = 3.06$, $SD = 1.07$), with the majority of students taking part in one OAE experience ($n = 9$). In one study, students were given the opportunity to attend two single day courses (Ferguson, Little, & McClelland, 2001) and in another, students took part in three 4-day courses throughout a 5-year medical degree (Juriza et al., 2011). Prince and Dunne (1998) were the only authors who described there being a structured follow-up back at university to assist in learning transfer.

Some authors provided detailed itineraries regarding the particular activities students partook in, while others were less explicit. Providing such information is important for the replication of findings, making comparisons between studies, and identifying key components of OAE. From the information available, courses tended to begin with short 'ice-breaker' style problem-solving activities such as passing members through a 'spider's web', crossing an imaginary minefield, or building a bridge over a stream, which involved frequent reflective discussion.

These icebreakers progressed to longer and more challenging activities such as high and low ropes courses, raft building, rock climbing, caving, trekking, and orienteering.

Study Design

As the studies in this review involved field or action research in natural settings, the researchers adopted a variety of research methods, including both quantitative ($n = 7$) and qualitative ($n = 4$) methods. As a research team, we value both techniques and believe that a mixed method approach yields a rich understanding of how students develop groupwork skills. All critiques within this review are therefore offered from this perspective, and are focused on drawing conclusions based on existing data and improving the quality of future research by applying appropriate procedures within different methodological approaches.

All studies explored the perceptions of the participants who attended the OAE courses, although only four studies compared these experiences to those of a control group of either participants from a different degree course/year group who were not offered OAE ($n = 3$; Elkin, 1991; Mazany et al., 1997; Harun & Salamuddin, 2010) or students who had chosen not to attend ($n = 1$; Vlamis, Bell, & Gass, 2011). These 'control groups' provide a useful comparison to explore the student experiences, although they are not true experimental designs due to a lack of random allocation. It is therefore likely that there may be other differences between these groups than simply their attendance at OAE. Control groups are notoriously difficult to adopt in educational research, as it is often unethical to withhold a potential learning experience from certain subsets (Cook, 2002).

Future research may do well to consider using wait list controls, in which the control group is offered the intervention after conclusion of the study. However, when control groups are not possible, single sample studies could be strengthened by including measures of additional variables (e.g., student characteristics, attitudes, environmental factors), which may help to explain why certain outcomes are occurring (or not occurring), rather than simply showing that outcomes do occur. This exploration could take either a qualitative approach or, if quantitative, could use mediation or path analysis, which have not been utilised in this field so far.

The quantitative studies used a combination of questionnaire scales and single item measures. There was, however, little exploration of the psychometric properties of these scales, with only three studies using questionnaires with acceptable psychometric validation; the other four developed their own questionnaire items and did not conduct adequate tests of validity. Without this validation we cannot be sure whether questions accurately measure what they purpose to measure (validity) or whether they are consistent and free from error (reliability), and we must therefore treat these findings with caution. Further, two out of the seven quantitative studies did not subject data to statistical analysis, instead opting for a manual inspection of mean scores. In these studies, we cannot confirm the statistical strength or probability of outcomes found.

The qualitative studies collected data through written responses to open-ended questions, two of which supplemented data with anecdotal evidence obtained through informal discussions with students and observations of student behaviour by staff members. Another study used a novel video diary room as a

method of data collection (Cooley, Holland, Cumming, Novakovic, & Burns, 2014 - Chapter 3). Although there were good descriptions of the data collection methods in some cases, there was less clear information about the approach to qualitative data analyses. A transparent and systematic approach to the identification of themes within the data was only described in one study, whereas in the other three, authors summarised the main themes but did not describe their approach to theme generation. Braun and Clarke (2006) explained that a transparent approach should include reporting how data is transcribed, interpreted, coded, and checked, as well as indicating whether themes are inductively generated or based on previous theories, how themes are named, prevalence of themes, and whether data reached saturation. Without such information, researchers cannot determine the extent to which themes are adequately supported by the data itself and are trustworthy and reliable. Future research would benefit from being aligned to a qualitative approach or step-by-step guideline to ensure the analysis is systematic and transparent (see Howitt, 2010).

The time points at which evaluation measures were implemented varied between studies. This variation comprised of measures taken only during OAE ($n = 2$), only at a single time point after OAE ($n = 3$), before and after OAE ($n = 3$), and repeated measures at pre, post, and several weeks follow-up ($n = 3$). The following sections critique the outcomes found by studies using each of these time point designs in turn.

During Course Outcomes

Rushmer (1997) focused on the developmental process teams go through during OAE and administered an open-ended questionnaire each day during a 3-day course. Themes within responses showed groups to follow a process of increased communication and awareness of group members, the emergence of leaders that changed between tasks, and increased team cohesion. This cohesion encouraged all team members to engage and try new things, leading to increased confidence, motivation, team spirit, and enjoyment. Students began to determine success by how well their group had worked together, not just by whether or not the outcome had been achieved in a given activity. By the end of the course, students identified areas for continued improvement when they next worked in groups. This study suggests teambuilding in student groups occurs through OAE. However, no information was given regarding how the data was analysed; therefore, the magnitude and reliability of the suggested outcomes is unclear.

To investigate student development during OAE, our research group used a video diary room for students to answer semi-structured questions about their experience (Cooley, Holland, et al., 2014 - Chapter 3). This study built on Rushmer (1997) in that a transparent thematic analysis approach was described. Further, whilst Rushmer focused on how students perceived their group to be developing during OAE, Cooley and colleagues focused on how students perceived themselves to be developing as individuals. Students discussed developing a range of groupwork-related outcomes they felt would benefit them when next working in a group. Themes included the development of groupwork skills in communication, leadership, fostering team spirit, reflection, role allocation,

and cooperation. In support of Rushmer, there was also evidence of teambuilding, as well as improved relationships between peers and staff and increased cultural integration and understanding.

Measures taken during OAE are valuable in that they allow rich data to be collected whilst students are immersed in the experience (Cooley et al., 2014). Rushmer (1997) and Cooley and colleagues suggest that both individual and group development occurs during OAE. However, without follow-up measures, these studies only highlight outcomes that have the potential to transfer back to higher education and do not present evidence that this transfer actually occurs.

Post-course Outcomes

In an early study measuring the effect on students when returning to academia, Elkin (1991) administered evaluation forms with open-ended questions 10-days post-OAE. Students commented on how enjoyable and useful the experience had been and reported getting to know each other better and increasing their understanding into how well they work with others. Informal comments made by staff and students suggested that groupwork behaviours on the degree course had improved and students were more committed to their degree course. Compared to previous years before OAE was introduced, there was also an improved degree pass rate and a reduction in the amount of assistance student groups required from staff. Unfortunately, no measures were taken to ensure previous year groups were equivalent to the present year group in other areas that may have influenced academic performance, making it difficult to attribute these changes to OAE alone. Further, similar to Rushmer (1997), no procedures were described for how data

was analysed and also what type of questions participants were asked. Details regarding the interview methods are important as student responses are inevitably subject to social desirability bias, particularly straight after OAE when they may have an exaggerated sense of euphoria. Steps can be taken to reduce the likelihood of this bias, such as ensuring questions are non-leading, and administering evaluation forms using a researcher who is independent from OAE and who gives clear and unbiased instructions (Cumming, 2013). Due to these issues and lack of clarity, this study offers compelling anecdotal, rather than empirical, evidence in support of OAE.

Similar to Elkin (1991), Prince and Dunne (1998) used a combination of post-course evaluation forms, informal comments, and observations, although again no analytical procedures were described. In the evaluation forms, the majority wrote that the course was enjoyable and worthwhile, and commented on experiencing benefits to groupwork. These benefits included improved relationships with group members, understanding the benefits of working together, confidence towards working in groups, trust between peers, and the development of skills in problem-solving, groupwork, leadership, reflection, communication, and identifying strengths in others. Some students recognised how the programme would benefit their studies back on their degree course, for example one participant said, "It allowed members of groups to learn and work within an informal setting, before tackling more complicated problems [on the degree course]" (p. 70). Back at university, staff observed improved planning, role allocation, and reviewing during group assignments and students spoke of facing

similar challenges to those during OAE and implementing the skills they had learnt to overcome them.

In a quantitative study, Ferguson and colleagues (2001) administered an evaluation form between 2 and 7 months following OAE. This non-validated survey contained a range of group-related outcomes and students were asked to rate the extent to which OAE had helped to achieve them (1 = no extent, 4 = high extent). A manual inspection found mean scores to be between 3 (medium extent) and 4 for increased trust (between peers and towards staff), confidence, teamwork, and cooperation among peers. Interestingly, when questioned about working with students and staff who had not attended OAE, similar scores were reported, suggesting some of the effects transferred when students worked with different groups of people.

These cross-sectional studies suggest that groupwork skills developed during OAE may transfer back to academia and that peer groups may become more trusting, confident, and cooperative following OAE. However, the evidence had weaknesses in the methods used and was also limited by not having a baseline measure taken before OAE against which to compare changes.

Pre and Post-course Outcomes

In the first of a two-study paper, Mazany and colleagues (1997) presented students with a 1 h group case-study assignment before, and 2-weeks after, attending OAE. Interestingly, neither the OAE group nor control group showed improvements in the assignment, suggesting that OAE had no effect on group performance in an academic task. However, in a 5-item questionnaire completed

after each assignment, the OAE group reported significant improvements in their approach to decision-making and inclusion of team members, but not in their communication and leadership decisions. In Study 2, the case-study assignment was replaced with a computer-based exercise and the 5-item questionnaire was replaced with a 20-item questionnaire comprising five subscales. This time, in a single sample design without control, significant improvements were found across all five subscales measuring the groups' ability to make decisions, involve each other, communicate, create a cohesive and enjoyable environment, and perform well as a group (e.g., time management, quality of output, effective planning and problem-solving). This study concurs with the teambuilding outcomes reported in the aforementioned qualitative studies. However, the authors suggest that a longer time period may be required before these improved group processes translate into improved group performance in academic tasks. Mazany and colleagues also suggest that the questionnaires could have been better designed and that some questions may not have been clear to some participants, particularly in Study 1.

Similar to the evaluation form used previously (Ferguson et al., 2001), Juriza and colleagues (2011) developed single item measures to assess the extent to which students felt OAE had contributed to the development of groupwork and leadership skills during their degree (1 = strongly disagree to 5 = strongly agree). Students were surveyed before attending their third and final OAE course, which took place in the final year of their medical degree, and again 6-months later. Before the final OAE course, 72% of students either agreed or strongly agreed that the previous two OAE experiences had contributed to their

development of groupwork skills, which increased to 83% after the third course. Scores were lower for leadership skills, where 54% either agreed or strongly agreed before the final course, which increased to 65% afterwards. Although it is important to note that data was not subject to statistical analysis and responses were based upon retrospective accounts with no baseline measures taken before students attended their initial OAE course. This study also provides some support for OAE in its contribution towards the development of groupwork skills and also suggests that outcomes may be improved through multiple OAE experiences. However, it does not indicate whether the improvements in these skills had any transferrable benefits on students' groupwork behaviour and success during higher education. Further, at time point two, between 17% and 35% of students still reported being unsure of the extent to which OAE had contributed to their development; this finding supports the need for studies to include measures of personal and environmental factors that may explain why some students gain more from OAE than others.

Although using data from pre- and post-course time points is a stronger design than studies with no baseline measure, measurements at only two time points still do not offer an entire picture of the on-going behavioural changes in students. Unfortunately, no qualitative studies have, to date, explored student perceptions across multiple time points, so the final section will focus on studies with quantitative approaches.

Pre, Post and Follow-up Outcomes

Odello and colleagues (2008) used a validated instrument (Paxon, 1998) to assess self-efficacy beliefs about leadership (e.g., leading a small group in a professional or educational setting) and groupwork (e.g., working as a group member to solve a problem). It was administered immediately before and after OAE and at 6-months follow-up. There were significant increases in both leadership and groupwork self-efficacy from pre- to post-OAE. Small, non-significant, increases from post-OAE to follow-up showed that students maintained a higher level of self-efficacy after returning to campus. This increased self-efficacy towards groupwork may explain Elkin's (1991) earlier observation that students require less assistance during academic groupwork when returning to higher education. However, it is not known whether this increased self-efficacy resulted in more effective groupwork behaviour and group performance.

In another study, Harun and Salamuddin (2010) administered a translated version of the Life Effectiveness Questionnaire. The original questionnaire was developed and psychometrically validated by Neill (2000) to measure eight different psychological and behavioural life-skills. Harun and Salamuddin selected four skills that were specific to personality development, namely cooperation skills, leadership ability, self-confidence, and coping with change. T-tests revealed that the OAE group, but not the controls, significantly improved across all four areas, from pre- to post-course and these increases were maintained at follow-up. As this was a published extended abstract rather than a full article, authors did not report important information such as the length of OAE exposure and the time frame before follow-up measures were administered. Further, it would have been

useful to have used mixed model analyses of variance, rather than t-tests, to explore whether there were interactions over time between the OAE and control groups in terms of the relevant outcome variables.

In the final study, Vlamis and colleagues (2011) used the Condensed Student Development Task Inventory-2 (CSDTI-2; Gass, 1986; Winston, Miller, & Price, 1979). This questionnaire, which has adequate internal and test-retest reliability (Gass, 1986; Winston et al., 1979), consists of three main scales, each containing three subscales: (a) autonomy (emotional, instrumental, and interdependence), (b) purpose (appropriate educational, career, and lifestyle plans), and (c) mature interpersonal relationships (appropriate relationships towards the opposite sex, mature relationships with peers, and tolerance of others). The questionnaire was administered on day one of OAE and at 3 and 8 months follow-up. A control group, who had chosen not to attend, were given the questionnaire at the same time points. For the interpersonal subscales, significant time-by-group interaction effects were found for mature relationships with peers and tolerance of others. Post-hoc analysis revealed that mature relationships with peers had improved across time points for OAE students but not the control. However, tolerance had decreased over time in OAE students and increased in the control group, a finding that differs from the Gass (1986) study it intended to replicate. No reasons were discussed for why tolerance may have decreased for OAE students, although one possibility could be that OAE brought about the 'storming' phase of Tuckman's (1965) stages of group development, which may have reduced tolerance in the short term before students moved into the 'norming' and 'performing' phases. Whilst there may be selection bias in the choice of a

control group, this study demonstrates an effective analytical strategy for quantitative studies.

Outcome Themes

Collectively, the studies provide some support for each of the four main course objectives aforementioned (Figure 2.2). First, there was evidence that transferable groupwork skills are developed during OAE and retained when students return to higher education. Robust evidence was lacking, however, to show the extent to which students are able to apply these skills in different contexts. Second, studies demonstrated that teambuilding occurs during OAE. However, although there was some evidence that groups returned to higher education displaying a more positive group environment and more effective group processes, there was mixed findings on whether this led to improved group performance. Third, students developed more positive attitudes towards groupwork in terms of seeing the benefits and feeling more confident in engaging in groupwork; although it not clear how this change in attitude may have influenced students' approach to new groupwork situations. Lastly, there were claims of increased integration and feelings of social support within peer groups. Future studies should be encouraged to systematically explore each of these four outcomes themes.

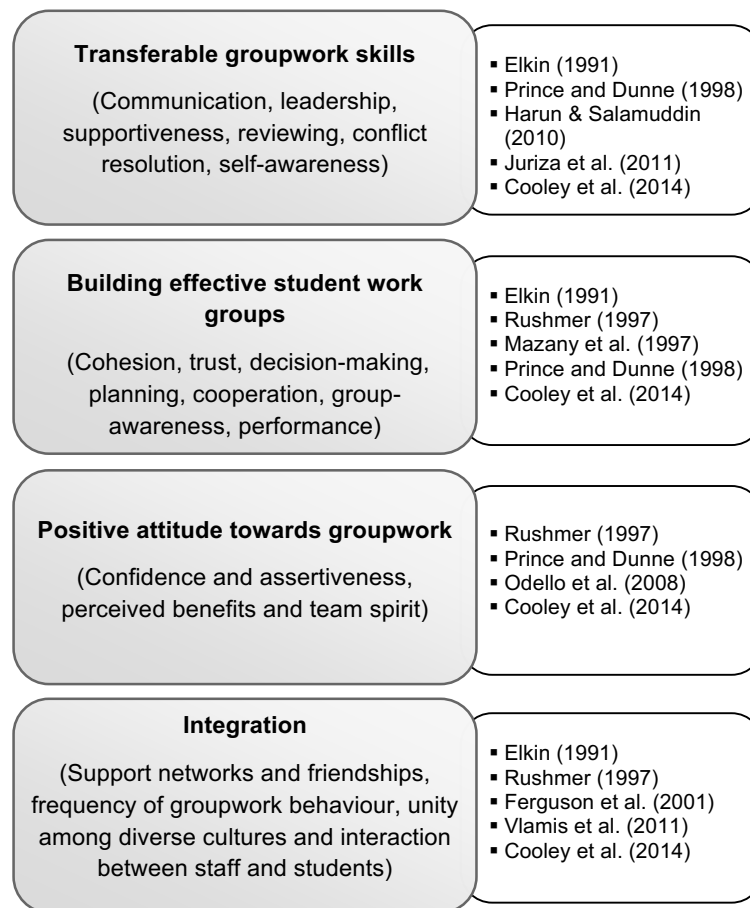


Figure 2.2
Studies that provide support for each expected outcome area of OAE

General Discussion

The aim of Chapter 2 was to investigate the empirical support for the use of outdoor-centred OAE courses in providing transferrable groupwork outcomes in higher education. It is noteworthy that the inclusion criteria for this review, centring on student samples completing structured outdoor-centred courses designed to develop groupwork, resulted in only 11 studies; this is considerably less than the 96 and 44 studies included in previous reviews by Hattie and colleagues (1997) and Gillis and Speelman (2008) respectively, which were open to all types of OAE and populations. This finding suggests that the specific use of OAE in higher

education to develop groupwork skills has not received as much research attention as other areas.

There also remains a gap in the literature focusing on the long-term outcomes of OAE in higher education. Whilst there were reports that students' groupwork behaviour improved on return to higher education, this was primarily based on informal comments and observations rather than systematically collected and evaluated evidence. In addition, not all the evidence was in favour of transfer; for example, although Mazany and colleagues (1997) found a self-reported improvement in group processes when students took part in an academic group assignment before and after OAE, they did not find any improvement in the grades awarded for these assignments. This finding would suggest that the skills learnt during OAE do not transfer into an improved academic performance. Studies did report that perceived increases in groupwork skills and self-efficacy remained elevated over time (Harun & Salamuddin, 2010; Juriza et al., 2011; Odello et al., 2008); however, the degree to which students were able to transfer these perceived increases into tangible benefits to their groupwork are unknown. Despite the primary goal of OAE in higher education being to improve future groupwork behaviour, ultimately leading to end goals such as improved grades and employability; a study is yet to provide a rigorous examination of this long-term impact.

A framework that could be used to guide a systematic evaluation of OAE, including both the development of skills during OAE and subsequent behaviour change in the transfer environment, is Kirkpatrick's (1994) four-level model of training evaluation. Although the model was designed to guide the evaluation of

occupational training, it has previously been applied to the evaluation of education (Praslova, 2010). Level 1 of the model, known as 'reaction', recommends measures to be taken during or immediately after a course to establish participants' initial feelings towards the course. A positive reaction to OAE was highlighted by a number of studies in this review; for example, when asking students in an open-ended question how they found the course, Prince and Dunne (1998) found 68% of respondents to talk about OAE being enjoyable and valuable. Level 2, known as 'learning', targets the change in knowledge, skills, and attitudes from before to after a course. Juriza and colleagues (2011) provided an example of increased groupwork and leadership skills from pre- to post-OAE. Unfortunately, there were few systematic measures beyond Level 2 in the literature included in the present review. Level 3, 'behaviour' (also known as the transfer measure), involves follow-up measurements of whether the post-course improvement in knowledge, skills, and attitudes actually translates to changes in behaviour when students are back in their day-to-day environment (e.g., displaying more effective groupwork behaviours). Finally, Level 4, 'results', is the measurement of the outcomes resulting from changes in Levels 2 and 3, such as performance in group assignments and increased employability. Mazany and colleagues (1997) did not find any improvement in group assessment grades following OAE, whereas Elkin (1991) believed that students' grades had improved as a result of OAE being introduced into their curriculum.

The findings suggest that there has been little exploration of how to support students in transferring their learning from OAE back to higher education, and in the majority of studies, little was done to assist students in this transfer process.

Future research should be encouraged to include assessment of the personal and environmental factors that predict the extent of learning and transfer, and how these could be maximised. This understanding could inform follow-up interventions aimed at facilitating transfer and enhancing the benefits for all students.

Exploring the complex outcomes of an OAE experience, and what predicts their nature, will be best addressed by mixed methods studies. Advanced quantitative methods help identify relationships and patterns that are not necessarily considered or discussed explicitly in interviews and focus groups, whereas qualitative methods may help to increase understanding by providing rich data that can tap into nuances sometimes overlooked in quantitative methods (Howitt, 2010). Although practical constraints with OAE research may influence decisions regarding study design, future researchers should strive to increase study quality in areas that are within their control; for example, employing repeated measures when exploring pre-post changes, using validated questionnaires, such as the newly developed Groupwork Skills Questionnaire (GSQ; Cumming, Woodcock, Cooley, Holland, & Burns, 2014), and subjecting data to appropriate statistical tests. When qualitative data is collected, researchers should also describe how the data is collected (e.g., the participants, methods, and questions used) and demonstrate trustworthy and valid techniques when analysing the data.

Conclusion

The studies included in this review (Study 1) indicate that OAE may be effective in developing individuals' groupwork skills, improving existing student work groups, improving student attitudes towards groupwork, and providing a more integrated environment within higher education. However, studies contained a range of limitations including non-validated questionnaires, weak study designs and analytical procedures, and a lack of focus on long-term behaviour change. These studies should, however, be commended for laying the groundwork for future research; the evidence provided is sufficient to warrant further funding and research within this exciting and growing field.

The findings of this review informed the following chapters in a number of ways. These include identifying a need to include a focus on the personal and environment processes that lead to the outcomes of OAE, use a range of mixed methods, and by reinforcing a need to focus on learning transfer and provide transparency in the reporting of methods used. In addition, this review also highlighted the potential value in adding the studies within this thesis to the wider academic literature, rather than just being utilised at an institutional level at the University of Birmingham. This thought is, in part, based on the premise that similar courses to that of the Raymond Priestley Centre appear to be prevalent in higher education across the world, which adds value and potential generalisability of findings.

The following Chapters build on the studies identified within this review by providing a more thorough and systematic evaluation of OAE in higher education.

The next Chapter (Study 2) begins with an exploratory, qualitative study that investigates the student experience whilst they are immersed in OAE.

Study 2:

INTRODUCING THE USE OF A SEMI-STRUCTURED VIDEO DIARY ROOM TO INVESTIGATE STUDENTS' LEARNING EXPERIENCES DURING AN OUTDOOR ADVENTURE EDUCATION GROUPWORK SKILLS COURSE

A version of this chapter has been published under the following reference:

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And presented at the following conferences:

The 4th International Conference for Qualitative Research in Sport and Exercise (2014), Loughborough University, UK

The 6th International Outdoor Education Research Conference (2013), University of Otago, New Zealand.

TeachMeet (2012), The Higher Education Academy Annual Conference, University of Manchester, UK. (Invited presentation).

The Higher Education Academy Annual Conference (2012), University of Manchester, UK.

The Teaching and Learning Conference (2012), University of Birmingham, UK.

Introduction

Developing transferable skills in groupwork, problem solving, task management, and leadership can enhance student success during higher education (Prichard, Bizo, & Stratford, 2006). Graduate employers often value these skills over technical knowledge and degree classifications (Branine, 2008; Confederation of British Industry, 2009), although they are not always sufficiently developed in graduates (Athiyaman, 2001; Bennett, 2002; Confederation of British Industry, 2011). Universities have been criticised for focusing on academic ability and didactic teaching methods, leaving the development of emotional and behavioural skills to chance (Buller & McEvoy, 1990; Roberts, 2009). In response, some institutions provide outdoor adventure education (OAE) courses with the aim of developing these transferable skills (Buller, McEvoy, & Cragun, 1995; Elkin, 1990; Steiner, Arthur, & Beech, 2008). OAE involves small groups placed in a wilderness setting to complete group problem solving activities that require intense group interaction and facilitation (Hattie, Marsh, Neill, & Richards, 1997).

In higher education, OAE has been shown to improve decision-making, communication, group cohesion, self-awareness, social support, self-confidence, resilience, leadership, and interpersonal skills (Breunig, Connell, & Young, 2010; Ewert & Yoshino, 2011; Gass, Garvey, & Sugarman, 2003; Kass & Grandzol, 2011; Mazany, Francis, & Sumich, 1997; Sibthorp, 2003). Although these findings are promising, there are number of limitations within this literature.

First, research includes long wilderness programmes lasting several weeks. This type of OAE usually involves expeditions (e.g., sailing, backpacking, and mountain climbing) with unstructured learning processes and outcomes (Mazany

et al., 1997). However, due to financial and time constraints, institutions often provide more time efficient outdoor-centred courses lasting two to five days (Steiner et al., 2008; Wagner, Baldwin, & Roland, 1991). Students typically stay at an outdoor pursuits centre and take part in structured group problem-solving activities (e.g., ropes courses and raft building) aimed to develop specific interpersonal and task management skills (Steiner et al., 2008). Less research has focused on outdoor-centred courses in higher education and, as these courses tend to be shorter and more structured, findings from wilderness programmes may not generalise.

Second, research has focused on the effects of OAE on intact groups. For example, students reported an increase in their groups' communication and decision-making ability following a 4-day course (Mazany et al., 1997). Whilst valuable, evaluations should also address whether individuals develop more transferable skills benefitting them in the future, beyond their current group.

Finally, studies are limited by the use of questionnaires measuring a narrow range of course outcomes. Retrospective recall within questionnaires is also subject to recall bias, often leading to inaccurate accounts of an experience (Tanur, 1994). Consequently, these assessment methods may have restricted the scope of investigation to what the researcher expects to find, rather than exploring the experience more broadly, through the eyes of the participant. As a result, the full range of course outcomes, and the processes students go through to reach these outcomes, may not be revealed. Qualitative methodology should provide this richer, broader, and less restrained understanding of the experience (Howitt, 2010).

The Present Study

This study investigated undergraduate students' learning experiences during a 3-day outdoor-centred, groupwork skills course. Whilst this course was employed to develop undergraduate and postgraduate students' groupwork skills across a range of disciplines, including arts and law and the life, environmental, physical, and social sciences, this study focuses on a convenience sample of engineering students. The aim was to understand students' perceptions of the experience and the range of course outcomes, while students were immersed in the course. To achieve this aim, we developed an innovative qualitative measurement tool, namely a semi-structured video diary room.

Video Diary Room

Inspired by reality television programs, video diary rooms have been used within educational, health, and corporate sectors to evaluate learning experiences (Poole, 2007), conduct service evaluations (NHS North West, 2010), and evaluate staff training and gather customer feedback (Cliff Productions, 2012). A video diary room involves momentarily taking participants out of an experience, and into a private space, to reflect verbally on that experience in front of a video camera. This approach overcomes difficulties people face when expressing themselves through written diaries (Punch, 2002). However, video diary rooms have not been widely used as a qualitative method in scientific research. To the authors' knowledge, only two peer-reviewed publications have previously implemented a form of video diary room methodology.

Noyes (2004) used a video diary room alongside face-to-face interviews, to investigate children's learning dispositions. The diary room offered an increased depth and freedom of speech and less reliance on the rapport between researcher and participant. A video diary room was also used by Buchwald, Schantz, Larsen, and Delmar (2009), to investigate children's experiences during various life-changing situations. Participants were each given a video camera and asked to record their own entries over a period of time. Similar to the approach used by Noyes, participants were allowed the freedom to discuss anything within a broad theme that was given to them before entries commenced. Buchwald and colleagues considered the video entries to be a "useful supplement to more conventional methods ... capable of eliciting data that would not otherwise be obtained" (p. 12).

Despite these strengths, both studies highlighted limitations with their methods, ranging from practical issues such as ensuring entries were made at critical time points, to issues that may have compromised the credibility and trustworthiness of the results. For example, participants avoided entries during negative experiences and the pre-planned nature of the entries allowed participants time to consider what they felt would be an appropriate response, increasing the likelihood of social desirability bias. In addition, without having questions for participants to follow during entries or an interviewer present, discussion often went off track and resulted in large amounts of irrelevant responses (e.g., playing up to the camera) unrelated to the question addressed by the study.

In contrast, the present study used semi-structured questioning, similar to that employed in more conventional qualitative techniques. This approach allows a researcher to direct responses to an area of interest, whilst still giving the respondent flexibility to construct their personal view of an experience (Smith, 2009). Additionally, the present study invited different participants to give diary room entries at various time points and during different observed experiences, thus ensuring spontaneity and variety in responses. Both Noyes (2004) and Buchwald and colleagues (2009) followed the same participants over time and found entries to increase in depth as participants became more comfortable in front of the camera. It is therefore of interest as to whether a single participant entry approach will still lead to rich data. Finally, as Noyes and Buchwald used a diary room method with children, the present study explored whether students in higher education displayed the same openness when sharing their experiences in front of a video camera.

In summary, the aim of the present study was to explore the learning experiences of higher education students taking part in a 3-day groupwork skills course, using a semi-structured video diary room.

Method

Participants

Twenty-nine participants were recruited from a population of 100 mechanical engineering undergraduate students (BSc, year three), who were taking part in a short OAE course. An additional 11 participants were recruited from a population of 106 electronic, electrical and computer engineering (BSc, year two)

undergraduate students, who were also taking part in OAE, resulting in a total of 40 participants (M age = 20.55; SD = 1.09). The majority were male (n = 32), with eight females, and the sample contained a mixture of home/EU (n = 22) and international (n = 18) students; about half (n = 21) spoke English as their first language. All of the students were scheduled to take part in a group project module when returning to university following OAE. However, before OAE, students reported limited groupwork experience and had not received any formal groupwork skills training within their degree course. Approval for conducting the study was granted by the University's Ethics Committee.

The OAE Course

The 3-day residential course was held at the Raymond Priestley Centre, North West, UK. The course aims to develop transferable skills in groupwork, communication, and group problem solving. Iterations of the course were attended by 30–36 students, who were randomly organised into groups of 6–8. These groups participated in outdoor problem solving activities throughout each day. The activities were facilitated by trained instructors who observed the groups' progress and led regular reflective discussions. Activities progressed from 30 min 'ice breakers', such as reaching a marker across a rough terrain whilst blindfolded, to more complex activities involving canoeing and ropes courses. All activities required the group to work together to complete objectives. In addition, students were issued with a group housekeeping rota, and there was time off in the evenings to relax and socialise.

Semi-structured Video Diary Room

A semi-structured video diary room was set up in a private yurt situated in the grounds of the outdoor pursuit centre. The room contained a digital video camera (Sony DCR-SX33) positioned in front of a chair, with question cards laid out on a table (Figure 3.1). Decorative lighting and coloured screening was used to create a more enjoyable and relaxed atmosphere.

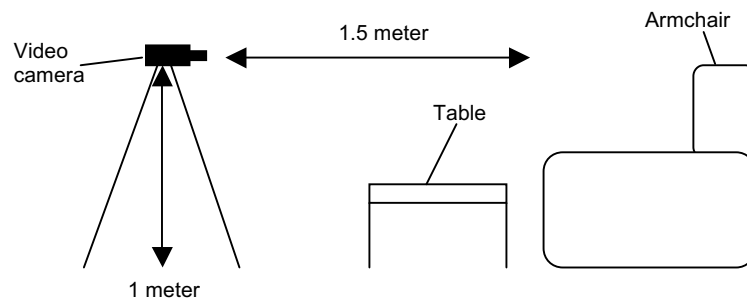


Figure 3.1. The layout of the semi-structured video diary room

Diary room questions were independently developed by four researchers, and were refined following group discussions. The final questions (Table 3.1) were independently reviewed for quality and clarity by an expert qualitative researcher. Questions were deliberately broad and open-ended to ensure participants were not led to a particular answer and required more than a “yes/no” response (Smith, 2009). Responses were guided towards students’ perceptions of the course experience, as well as their personal development and perceived benefits beyond their immediate group dynamics. There were three sets of questions, each corresponding to a specific time point during the course. A warm-up question was used to relax participants and encourage a greater depth in answers. Researchers viewed the initial entries at each time point to ensure the

questions were understood as intended; all entries were later included in the analysis as no such misunderstandings were observed.

Table 3.1
Semi-structured video diary room questions

Time point	Question
On arrival	<i>Tell us a bit about yourself (your name, where you're from, what you like doing, why you're here)</i>
	What do you hope to learn on the course?
	Do you have any concerns about the course?
During day 2	<i>Tell us a bit about your day (what you've been doing)</i>
	What have you learnt so far on the course?
	What has been your most meaningful experience here so far?
	What things have helped you to overcome any difficulties?
End of day 3	<i>Tell us a bit about your experience at [the outdoor pursuits centre]</i>
	What have you learnt about yourself?
	What have you learnt that you could use during your academic work or future employment?
	What was your greatest achievement?
	What do you feel you will take away from this experience?

Note. Warm-up questions indicated in italics

Procedure

Students were invited in person by researchers to give entries. Purposive sampling was used to ensure the deepest possible understanding of the experience (Hastie & Hay, 2012), whereby the researchers invited a range of participants to represent the diversity observed within the wider population; for example, those who displayed varied course experiences (e.g., enjoyment, success/failure), apparent personality types (e.g., extroversion and introversion), and demographics. Forty-six students were invited into the diary room, with 6 (13%) declining to take part due to an unwillingness to be video recorded. This refusal did not appear biased towards students with any particular characteristics.

Each participant was given an information sheet, consent form, and demographic questionnaire. Before being left alone in the room, participants were instructed to read each question card aloud, take their time, answer in as much depth as deemed necessary, and to leave out or revisit questions if needed. After making their entry, participants were asked to inform the researcher, who was waiting nearby, if they were unhappy with their comments or if they would like to make any additions; neither event occurred.

Analysis

Forty diary room entries were collected over four iterations of the course; 12 on arrival, 16 during, and 12 at the end of the course. The duration of entries ranged from 63 sec to 10 min 49 sec ($M = 4$ min 8 sec, $SD = 2$ min 21 sec), resulting in a total of 2 hr and 45 min of recording.

An inductive thematic analysis was used because of the exploratory nature of the study. This approach provides a rich and descriptive account of patterns within the data set, with identified themes being strongly linked to the data itself, rather than fitting to a pre-existing theory or framework (Braun & Clarke, 2006; Howitt, 2010). A semantic approach was taken, whereby participants' experiences and personal meanings were analysed using an explicit interpretation of what was said, rather than looking for underlying meanings and structures (Braun & Clarke, 2006).

To increase systemisation and transparency, guidelines provided by Braun and Clarke (2006) and Howitt (2010) were followed. Step 1 involved data familiarisation. Although professional transcription services were used, the lead

researcher watched, read, checked, and re-read all entries. In Step 2, initial coding was carried out using qualitative analysis software (Nvivo 9.0). Each sentence, or small section of text, was given a descriptive code one level of abstraction away from the data. No new codes were created in the final transcripts, suggesting saturation was approached. Themes were identified as the process naturally evolved into Step 3, involving the sorting of codes into themes. Tentative themes were further organised into higher and lower level themes. In Step 4, themes were reviewed to ensure there was enough supporting data and both internal homogeneity and external heterogeneity existed (Patton, 2003). This process resulted in themes being removed, merged, or divided. In Step 5, names and definitions were given to each theme. Theme names were selected based on words from research, theory, and terms used by participants (Hastie & Glotova, 2012).

To improve credibility and trustworthiness, a second researcher independently coded 15% of the data, before themes were discussed and refined until consensual validation was reached. Finally, the entire data set was presented to two expert researchers who were independent of the analytic process; more refinements were made at this stage before being agreed.

Results

The following results are organised into two distinct but related areas of interest—*the course experience* (i.e., a collection of themes describing the process students went through during OAE) and *the course outcomes* (i.e., a collection of themes

describing the perceived learning outcomes that resulted from the experience) (see appendix 1.4. for the full set of themes and definitions).

The Course Experience

Students described their feelings towards the course and their learning experiences in great depth. Five first level themes were discussed, including students' preconceptions about the course, their expected course outcomes, meaningful elements of the course, how they overcame challenges, and their affective and instrumental attitudes towards the course. These five themes together comprised 21 second level themes and 52 third level themes (Table 3.2). In the following sections, sub-headings are used to identify each of the first level themes and the associated second level themes (italicised) are described along with the third level themes and examples of supporting quotes.

Individual preconceptions. On arrival, students brought with them a number of different attitudes and feelings towards their participation in the course. These preconceptions included different types of *motivation for attending*. Some students attended simply because it was a compulsory part of their degree course, whereas other students expressed a desire to prepare themselves for future project work. Most students displayed *positive affect* by conveying excitement towards the course. However, students also had mixed *preferences for groupwork*, with some responding positively to the thought of groupwork and others stating a preference for independent working. Students had received prior *information from peers* that influenced their preconceptions, including what to

expect from the activities. Some also had previous experiences of OAE: “I’ve done something similar to this in school ... I’m pretty sure I know what’s going on and what sort of tasks we’ll be doing.”, whilst for others the experiences was novel. Students also expressed *concerns* relating to personal safety, the environment, physical exertion, being amongst others, and a lack of pre-course information. For example, “My main concern would be whether I get on with my team mates because if I didn’t, I’d find it quite a hard, hard couple of days.” Other students did not voice any concerns.

Outcome expectations. Students’ expectations ranged from high, “We have got a lot to learn on this course,” to low, “To be honest I don’t think I’ll learn much”. Many expected to develop *groupwork skills*, such as cooperation, leadership, and communication. Students also expected the course to provide *enjoyment*, and lead to *improved peer relationships*. Finally, the course was expected to *benefit future behaviour*, at university and in future employment.

Key elements of the experience. During the course, students repeatedly discussed elements of the experience that stood out to them as being particularly meaningful and/or contributing to the course outcomes. The activities themselves were often described as *interesting and enjoyable*. *Challenging* elements of the experience were reflected in five third level themes: (a) physically demanding, (b) intellectually demanding, (c) language barriers, (d) frustrating, and (e) sometimes unachievable, allowing teams to experience failure.

Table 3.2
A thematic analysis of the groupwork skills course experience

First level themes	Second level themes	Third level themes
Individual preconceptions	Motivation for attending	Compulsory Preparation for future academic work Improving groupwork skills
	Positive affect Preferences for groupwork	Enjoys groupwork Preference for independent learning
	Information from peers	What to expect Positive views
	Past experiences	Previous experience No previous experience
	Concerns	Personal safety Environment Physical exertion Being amongst others Lack of pre-course information No concerns
Outcome expectations	Groupwork skills	Cooperation Leadership Communication
	Enjoyment Improved peer relationships Benefit to future behaviour	University Employment
Key elements of the experience	Interesting and enjoyable activities Challenging	Physically demanding Intellectually demanding Language barriers Frustrating Sometimes unachievable
	Revealed weaknesses	Individual weaknesses Group weaknesses
	Environment	Novel Perceived risk Natural consequences
	Time outside of activities	Duty rotas Free-time
Overcoming the challenge	Interpersonal support	Groupwork Leadership Communication Role allocation Trust Humour
	Intrapersonal support	Instructor support Application of previous knowledge Emotional control Improvisation Reflection Planning
Reflection on the experience	Positive and memorable Exceeded expectations Sense of achievement Thoughts on transfer	

Note. See appendix 1.4 for a detailed thematic map including definitions and example quotes

Another key element of the experience described how activities *revealed weaknesses*, both individually (e.g., “...it was a bit slow, but that was due to two or three people not being particularly confident.”) and as a group (e.g., “...no one was really listening to each other”). A fourth key element was the *environment*; some found the novelty memorable and others described a sense of risk, which was exciting and helped to foster a supportive group environment as this student explains:

The prospect of falling with a harness on you... Individuals would have to be looked after by the rest of the team, which was good because you have to rely on your teammates to actually stop you from falling.

The environment also provided natural consequences, for example, “...we think and make a boat, but it doesn’t work, it didn’t work because we didn’t work well and we didn’t think well, so we fall in the sea [water]”.

The final element of the course experience was the contribution of *time outside of activities*. This student explains the importance of having duty rotas:

If we were not given a duty rota or anything, the place would rapidly descend into just rubbish and chaos... it is good to start thinking about what is necessary in a business or an environment like that in order to keep things running smoothly...

Whilst another student illustrates the importance of free-time outside of structured activities, “I think the most meaningful experience has been last night’s social... the whole of our team went along. We all had a really good laugh just sharing experiences...”

Overcoming the challenge. To overcome challenges posed by the course, students used interpersonal and intrapersonal coping methods. *Interpersonal support* was gained from interacting with others and comprised seven third level themes: (a) groupwork (e.g., “My teammates, they are quite skilled in these kinds of things [outdoor pursuit activities]... I learned a lot from them”), (b) leadership (e.g., “Because I have done [raft building] before I proposed an idea and we went with it and it worked really well”), (c) communication (e.g., “We did take it in turns to, to voice opinions and ideas in order to overcome each obstacle”), (d) role allocation (e.g., “We chose people who maybe had much better balance to carry the water and the other two to support.”), (e) trust (e.g., “You are blind folded and you have to trust the other team member to climb up the wall.”), (f) humour (e.g., “A bit of humour has certainly helped me to overcome a few things.”), and (g) instructor support (e.g., “The people that are taking us are really, really friendly, really helpful, quite insightful about stuff. They realise where certain weakness are and strengths are in the group”).

Intrapersonal support, was gained from within the self and comprised five third level themes: (a) application of previous knowledge (e.g., “Some of my sailing knowledge about knots came in handy.”), (b) emotional control (e.g., “...I have had to keep my head cool.”), (c) improvisation (e.g., “Improvisation happened quite often, especially because we were trying to do things quickly...”), (d) reflection (e.g., “Reflection upon how things have gone in the past have helped me to look to difficulties in the future...”), and (e) planning (e.g., “Trying to kind of foresee difficulties and overcoming them before they get to them”).

Reflection on the experience. On the final day, students reflected on the course as a whole. Many felt they had a *positive and memorable experience*, represented by quotes such as, “It was a good experience and memories will stay forever.” and, “Well, in a nut shell, the best experience of my life”. The experience also *exceeded expectations* (e.g., “Honestly I thought it was going to be an inconvenience but, I liked it... it was good”) and provided a *sense of achievement* (e.g., “...we got out there and it worked ... that was really great to see. I really, really enjoyed that”). Finally, the end of course feelings included *thoughts on transfer*, with students anticipating how the experience might be useful in the future, “...I’m in a group with these people and if nothing else, I have a project to do with them in March.” and, “It is good to start thinking about what is necessary in a business”.

The Course Outcomes

Students discussed a broad range of outcomes as a result of attending the course. The analysis revealed 23 third level themes, which were categorised into seven second level themes, and further categorised into two first level themes of interpersonal and intrapersonal outcomes (Table 3.3). The following sections describe the interpersonal and intrapersonal outcomes in turn, with their corresponding second level themes italicised.

Table 3.3
A thematic analysis of the groupwork skills course outcomes

First level themes	Second level themes	Third level themes
Interpersonal	Groupwork	Communication
		Leadership
		Team spirit
Improved relationships	Improved relationships	Group reflection
		Team roles
		Cooperation
Internationalisation	Internationalisation	Functioning of intact groups
		Peer group
		Student and staff
Intrapersonal	Mental toughness	Internationalising groupwork
		Overcoming multilingual challenges
		Reduced cultural divide
Task management skills	Task management skills	Persistence
		Self-confidence
		Bravery
Self-awareness	Self-awareness	Adaptability
		Planning
		Problem-solving
Physical activity	Physical activity	Time management
		Exercise
		Outdoor recreation skills
		Motivation

Note. See appendix 1.4 for a detailed thematic map including definitions and example quotes

Interpersonal. Interpersonal outcomes involve how an individual interacts with others. This first level theme included three second level themes: *groupwork*, *improved relationships*, and *internationalisation*. By the end of the course, students displayed an increased awareness of the value of *groupwork* and reported developing seven different *groupwork* skills: (a) communication, which involved an increase in communication skills (e.g., “Number one definitely, it improves my teamwork, my communication skills with other people”), listening skills (e.g., “I learnt to listen to others, not always listen to myself.”) and students’ understanding of the importance of effective communication, for example:

It has become very clear that some people do not like to voice their opinions... I think a team does need people like that so that they can come up with the ideas but they still need someone to put them across.

(b) Leadership skills, which included having a better understanding of the qualities associated with a successful leader (e.g., “You are more likely to work for somebody if you are enjoying their company...”), and developing one’s leadership style (e.g., “I feel that I can be a bit overbearing...”); (c) team spirit, with students expressing that they learnt how to foster a supportive team environment through trust, self-sacrifice, and motivating others; (d) group reflection, comprising an increased ability to reflect ‘in action’, where it was “useful to step back and look at a situation sometimes”, as well as reflecting ‘on action’, for example, “...being able to reflect on what we’ve done, brainstorm what would have been better”; (e) understanding of team roles, with one student learning that “...every organisation is a special structure, just like a successful group needs some leaders and thinkers and doers, as well as the carers”; (f) cooperation, involving the ability to compromise and work with others cohesively. One student stated “[the course] taught me to be a bit more accepting, understanding sort of like appreciating what other people’s views are”, whereas another learnt “not to undervalue anyone”; and (g) functioning of intact groups, which describes the perceived benefits to groups who were returning to university to continue working together.

Students described *improved relationships*, which included peer group relationships, where new friendships were developed between students; one student said, “Before coming here, I had about ten friends, twelve friends from the school. Now I almost know everyone by name”, whilst another described increased social support, “I meet some new friends. When I’m in school, I meet some difficulties or problems, I can ask them for help”. Improved relationships also included those between student and staff, where one student said, “They

really care for us and are here to help us... Our relationship was just entering the lecture, taking some information, getting out. Now I know them personally, they are very good guys”.

The final second level theme within the interpersonal outcomes was internationalisation, defined as promoting, valuing, and learning to work effectively in multicultural environments. This theme benefitted home and international students alike and included internationalising groupwork, involving a change in cultural beliefs and norms regarding groupwork. An overseas student explained, “In China I usually have fewer time, or fewer chance to cooperate with others. We usually study by ourselves... I have found that teamwork is very important”. Other third level themes included overcoming multilingual challenges and increased cross-cultural integration; this student spoke of both:

There is some people on this course that have been in every lecture I have sat in for two years that I have never heard them utter a single syllable and I don't really know if they speak English. And in the last two days I have had to get them to communicate with me somehow and some of their English is really poor but, I've had to make it work... I think there is segregation in our year and it's wrong and it would be nice to break it down a bit more.

Intrapersonal. Students reported a range of intrapersonal outcomes, which were defined as outcomes to do with the self. This first level theme included four second level themes: *mental toughness*, *task management skills*, *self-awareness*, and *physical activity*. Within the theme *mental toughness*, students spoke of an increased capacity to deal with challenges, including (a) persistence in the face of difficulty (e.g., “I learnt to never give up. I know no matter what happens in academic work also in life and maybe work in future, we will meet a lot

of difficulties but to make sure we never give up”); (b) increased self-confidence (e.g., “I become more confident about myself. I usually speak to myself that you can do it... because you have the ability”); (c) learning to be brave despite low self-confidence (e.g., “There is just one girl in our team... if I can’t do it our team will fail... So I think being brave is the most important thing I learnt”); and (d) adaptability, (e.g., “We should be adaptable to any situation”).

Increased *task management skills* included improved planning skills and understanding of the importance of planning. One student said, “We just dived into challenges... we did not use planning time efficiently, so, don’t be afraid to use all the time and all the resources you have got”. Students also developed problem solving (e.g., “I learnt how to think by myself and use my knowledge in practice to solve my problem.”), and time management skills (e.g., “...time management... really struck through... It taught us to keep an eye on the time”).

The next intrapersonal outcome was increased *self-awareness*, where students became more aware of their own strengths and weaknesses and highlighted areas requiring continued improvement. For example, “I find it very difficult not to snap at people... I wasn’t aware of that... Probably rein that in a bit” and, “I don’t listen to anyone, I just do what I am thinking”.

Finally, intrapersonal outcomes included benefits to *physical activity*. The course provided an immediate bout of exercise, with some students having gone “a long time without exercise”, as well as teaching outdoor recreation skills such as personal survival, knots, and map reading. Students also reported an increased motivation to take part in new sports, for example, “I really liked it, maybe I will continue the rowing in the future” and to increase future physical

activity; for example, “I think after I go back from [the course] I will not be lazy anymore”.

Discussion

The aim of the study was to investigate students’ learning experiences during a 3-day outdoor-centred groupwork skills course. The depth of student response to the semi-structured video diary room revealed a complex range of themes.

Divided into two separate thematic maps, students discussed the learning process they experienced during OAE (*the course experience*) as well as the range of outcomes resulting from their experience (*the course outcomes*). The following discussion is organised around each of the resulting themes in turn.

To begin with, students arrived at the centre with varied motivations for attending; some valued groupwork and hoped to develop their interpersonal skills, whilst others were unsure why they were attending and displayed negative attitudes towards groupwork. This variation may be because the course is embedded into the degree course, rather than an optional addition. Whilst some students expected to develop groupwork skills, many saw the course as a social event. Overall, the range of expected course outcomes on arrival, were far narrower than the subsequent outcomes described in later entries. This disparity could represent an ‘unconscious incompetence’ state in many students, which is described in the conscious competence learning model as being unaware of a lack of knowledge or expertise within a given area (Adams, 2012; Flower, 1999). Despite the engineering discipline placing a particularly high demand on the development of groupwork skills in graduates, many students began OAE

unaware of the different areas of interpersonal and emotional development considered important in higher education and employment (Athiyaman, 2001; Bennett, 2002; Branine, 2008; Prichard et al., 2006). By the end of the course however, students appeared to have progressed to the 'conscious incompetence' and 'conscious competence' stages of the learning model, displaying greater awareness of areas in need of improvement as well as increased competence in these areas. This finding supports the argument that students' ability to work well in groups is not effectively developed without direct intervention (Prichard et al., 2006), as students appeared to begin OAE with only a superficial knowledge of the different interpersonal skills that could be improved. In addition, this finding suggests that the outcomes of OAE discovered in engineering students, may generalise to other disciplines. In a discipline that places less emphasis on the importance of groupwork skills, students would still be likely to begin OAE with similar beliefs and understanding to those in the present study. However, further research should include other disciplines to confirm this expectation.

This pre-course lack of awareness and negative attitude towards groupwork is also an important area for course improvement. Students' pre-course attitudes towards groupwork have previously been found to significantly relate to post-course measures of perceived group effectiveness, supportiveness, and continuation of groupwork when returning to university (Shivers-Blackwell, 2004). Further, according to behavioural change theories such as the theory of planned behaviour (Ajzen, 1991), the likelihood of an individual changing a behaviour (e.g., groupwork) is predicted by the individuals' intention to change this behaviour. Intention is in turn predicted by attitude, perceived social norms, and perceived

behavioural control over the behaviour. Therefore, the development of behavioural skills could be enhanced by targeting these areas prior to students attending a course.

Other key areas of the experience were the activities, which students found interesting and enjoyable, yet challenging, revealing individual and group weaknesses. Students were motivated by perceived risk and natural consequences to failure, resulting from the outdoor environment. These findings support previous studies where participants have recalled the unfamiliar and challenging outdoor environment as a vital part of the learning experience (D'Amato & Krasny, 2011; McKenzie, 2003). It is believed that this type of environment provides optimal levels of arousal for learning to occur, as students are alert and engaged (Priest & Gass, 2005). The environment also promotes transformative learning, encouraging students to think about things in a different way and seek support from those around them (Mezirow, 2000; O'Sullivan, 2002). In the present study, the challenges faced required students to work together and utilise a range of coping methods, many of which were reflected in the subsequent learning outcomes.

In addition to the activities, time outside of activities was also found to be important. Some students found the house keeping rotas and living arrangements just as effective in developing groupwork skills as the activities themselves. The free time was also important for socialising and bonding, allowing students to practice their interpersonal skills and explore new social networks. This finding is particularly interesting as some researchers have suggested that to save travel costs, group problem-solving courses could be conducted indoors on campus and

achieve similar outcomes (Broderick & Pearce, 2001). However, this study highlights the importance of a novel and unpredictable outdoor environment and the time spent living and socialising together outside of the structured activities. To maximise the social benefits, organisers should be encouraged to randomly assign students both to their small groups and to different iterations of a course, rather than allowing students to sign up in friendship groups.

Students reported developing key skills, such as adaptability, communication, groupwork, leadership, self-confidence, persistence, time management, problem solving, and planning, all of which appear repeatedly in the literature as crucial for both success in higher education and subsequent employment (Bennett, 2002; Prichard et al., 2006; Roberts, 2009; Stevens & Campion, 1994). Not only did students report developing their ability across these areas, many demonstrated increased awareness of what effective groupwork involves and the value in working with others. Although some of these outcomes have been found in previous literature (for reviews, see Ewert & McAvoy, 2000; Gillis & Speelman, 2008; Hattie et al., 1997; Williams, Graham, & Baker, 2003), this study is the first to demonstrate such a range of outcomes following a short, outdoor-centred course used in higher education.

Another interesting outcome was internationalisation, where students learnt to work in multicultural groups and overcome the associated language barriers. This development is vital in an increasingly globalised economy, with workplaces requiring graduates who can navigate language and cultural differences and work effectively in multicultural groups (Roberts, 2009). This study is the first to demonstrate the potential for a short OAE course to provide this type of

development within higher education. Future research should further explore these multicultural benefits, including whether outcomes persist on return to university, and whether different nationalities or cultural groups experience and benefit from OAE in different ways.

In summary, this study provides support for OAE in higher education, demonstrating a wide range of positive outcomes, achieved during a short outdoor-centred course. In addition, the groupwork skills developed were not specific to the intact groups taking part and instead demonstrate individual development that may benefit students when entering various group environments. However, while this study outlines a range of outcomes that may potentially transfer to future experiences, further research is required to explore the long-term impact on student development and employment.

As a secondary objective, a novel qualitative method of data collection was developed in the present study, which successfully captured students' learning experiences whilst immersed in a course. The majority of students were willing to participate and appeared comfortable when providing open and in-depth responses. The varied responses indicated that the questions enabled students to discuss their experience openly, whilst ensuring data remained rich and focused on the research question. This semi-structured method extends previous unstructured diary room methodologies (e.g., Buchwald et al., 2009; Noyes, 2004), as a more efficient method of data collection, as well as demonstrating its effectiveness when used in higher education.

The semi-structured video diary room also adheres to recommendations commonly suggested for improving the quality of traditional interview techniques.

For example, Hastie and Hay (2012) recommend that interviewers would benefit from listening more and talking less, being more tolerant of silences (allowing the participant time to think), making fewer unnecessary interruptions, and avoiding judgemental reactions. The space and time students were given to consider the questions may have also acted as an additional learning aid, encouraging reflective learning. However, a limitation of the interviewee being alone was an inability to follow-up answers that required clarification or further probing. To overcome this limitation, diary room questions must be carefully worded to avoid any possible misinterpretations and entries could be followed up using face-to-face interviewing.

Further research should validate the semi-structured video diary room in different settings. Follow-up interviews could also be used to discover how participants found using a diary room and the impact this method may have on their learning experience. Further, a semi-structured video diary room could be implemented in a case study design to assess skill transfer, where an individual's learning experience is followed before, during, and after a training course.

Conclusion

Overall, Study 2 has demonstrated that OAE courses offer a unique environment for students to develop interpersonal and intrapersonal skills. The range of course outcomes displayed provides a valuable base for future research into the quantification of these outcomes, the influence of individual differences, and the issue of long-term transfer. In doing so, this study has also developed a novel qualitative method. Whilst requiring further validation, the semi-structured video

diary room has been shown to be highly effective in collecting rich and informative data. In the following Chapter, Study 3 replicates and extends Study 2 by including data from multiple stakeholders in OAE and incorporating follow-up measures to assess all four levels of the Kirkpatrick (1994) model.

Study 3:

DEVELOPING THE MODEL FOR OPTIMAL LEARNING AND TRANSFER
(MOLT) FOLLOWING AN EVALUATION OF OUTDOOR GROUPWORK
SKILLS PROGRAMMES

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Introduction

Groupwork in higher education provides an opportunity to develop key skills that are highly valued by students and employers (Wilson, 2012). Groupwork also provides a more efficient way of teaching and assessing students, especially when faced with large cohorts and squeezed budgets (Cumming, 2010). However, groupwork can be challenging and frustrating for educators and students alike (Wosnitza & Volet, 2014). If groups are not managed effectively, negative outcomes can occur such as social loafing, time wasting, unfair grade distributions, dissatisfaction, and negative attitudes towards groupwork (Pfaff & Huddleston, 2003; Maiden & Perry, 2011). Despite these risks, there is limited empirical evidence in how to best support and train students to work well in groups, ensuring that groupwork is a positive experience that develops both the task and interpersonal dimensions of groupwork required for success at university and the workplace (Cumming, Woodcock, Cooley, Holland, & Burns, 2014).

One initiative that is used in higher education to train and develop groupwork skills is outdoor adventure education (OAE; for a recent review see Chapter 2 - Cooley, Burns, & Cumming, 2015). During OAE, students typically leave campus for a few days to take part in outdoor pursuit activities that are designed to develop different aspects of groupwork. Students can experiment with new behaviours and receive immediate feedback in an environment that is safe, challenging, and unpredictable. When combined with reflective learning practices, this 'real life' learning context results in meaningful and memorable group interactions that shape the development of groupwork skills (Cooley, Holland, Cumming, Novakovic, & Burns, 2014). In higher education, OAE often has to

cater for large numbers of students. As a result, courses tend to be short and intense (1-5 days), with activities engineered to accelerate specific learning outcomes (e.g., blindfolding a team member during an obstacle course to develop communication skills, trust, and social support). This type of OAE course is referred to as an outdoor-centred programme, which is distinct from other forms of OAE such as wilderness programmes, where participants go on expeditions such as sailing or trekking for several weeks or months, and learning is typically less structured and more individual (Mazany, Francis, & Sumich, 1997). For simplicity, the term OAE is used in this thesis to refer to the shorter, intense, outdoor-centred courses that were observed.

In using OAE in higher education to develop groupwork, one assumes that learning is not refined to the context it is developed in (e.g., a raft building activity), and can instead affect behaviour in other situations (e.g., academic group projects). The effect that an experience such as OAE has on future learning experiences is known simply as transfer (Gass, 1999). The occurrence of transfer is a widely debated within the OAE literature and several well-respected theories are commonly used in support of its existence, including experiential learning (Dewey, 1938; Kolb, 1984), social learning theory (Bandura, 1977), and transformative learning (Cranton, 1994). Within a conceptual review paper, Gass (1999) argues that transfer can, and does, occur following OAE, providing it is carefully planned for in the course design. An 8-step model is presented along with ten recommended techniques for facilitating transfer, which includes establishing learning objectives and tailoring activities to help learners identify the potential for transfer to occur. However, despite the wealth of conceptual theories

and models underpinning transfer from OAE, empirical evidence for the transfer of learning from OAE to higher education is less established (Cooley, Burns et al., 2015).

Review of Existing Literature

To establish existing evidence of transfer from OAE to higher education, a systematic search of the literature was conducted in Chapter 2 (Cooley, Burns, & Cumming, 2015). In this review, 11 empirical studies were identified that focused specifically on the transfer of groupwork related outcomes following short, residential OAE courses. Within these studies, OAE had been implemented to develop transferable skills, build existing student work groups, foster a more positive attitude and confidence towards groupwork, and promote integration among students. Evidence was found in support of these different outcome areas, although this evidence was limited by weaknesses in methods used. For example, anecdotal quotes from staff and students described OAE resulting in improved groupwork behaviour back at university. However, this data was often obtained informally through post course evaluation sheets and discussions, and analysed without adhering to recognised approaches for ensuring trustworthy results (e.g., Elkin, 1991; Prince & Dunne, 1998). In the quantitative studies reviewed, survey data revealed perceived improvements in groupwork skills and self-efficacy following OAE (e.g., Odello, Hill, & Gomez, 2008; Ferguson, Little, & McClelland, 2001; Juriza et al., 2011). However, it remained unclear whether this perceived development actually translated into more effective groupwork behaviour, and the impact this may have had on students' experience of university and entering the

job market. In fact, in one study that did include a measure of academic groupwork performance, no significant improvements were found following OAE (Mazany et al., 1997). Building on Chapters 2 and 3, it is both timely and important for the present Study (Study 3) to undertake a more extensive, longitudinal evaluation of OAE as a method of facilitating groupwork behaviour in higher education.

Present Study

To ensure a systematic evaluation of both learning and transfer following OAE, the present study included four different levels of training evaluation: 1) reaction, 2) learning, 3) behaviour, and 4) results, as recommended by the Kirkpatrick (1994) model. Reaction reflects how the learner felt towards the training experience (e.g., was the content appropriate and enjoyable?); in higher education this is often referred to as 'student satisfaction'. Learning is the extent to which students acquired the intended skills, knowledge, and attitudes, from pre- to post-training. Behaviour, also known as the 'transfer measure', involves measuring the behavioural changes that occur when attendees return to their normal work environment (e.g., improved groupwork behaviour at university). Finally, results, involves measuring the impact from changes in learning and behaviour (e.g., academic performance and employability).

Kirkpatrick (1994) also recommends including the perspectives of multiple stakeholders when evaluating training. In the present study, data was collected from students, alumni, instructors, and academic staff, who were all key stakeholders in OAE. In addition, it is recommended that evaluations do not focus

solely on the outcomes that occur at each of the 4 levels (e.g., was the reaction positive? what did attendees learn?), and instead include measures of the processes behind these outcomes (e.g., what personal and environmental factors influence these outcomes?) (Kirkpatrick & Kirkpatrick, 2014; Bates, 2004).

Identifying the processes helps to clarify how outcomes come about and ways training can be improved. Although the Kirkpatrick model is typically implemented using quantitative tools, a qualitative evaluation was used in the present study to enable a rich, exploratory, evaluation of both the outcomes and processes.

To summarise, the aim of the present study was to evaluate the perceived impact of OAE in higher education, and the factors that influence its success. To achieve this aim, a novel approach to training evaluation was used, which combines the Kirkpatrick (1994) model with qualitative measures of outcomes and processes taken from multi-perspectives.

Method

A total of 95 participants were recruited from four different perspectives. The student sample ($n = 72$; M age = 22.02, $SD = 2.4$; 51% female, 49% male) contained a mixture of domestic and international students, who were undergraduate (34%) or postgraduate (66%) students in engineering (10%), business (38%), accounting and finance (42%), or biomedical science (10%), and had attended OAE in their respective degree cohort.

The alumni ($n = 12$; M age = 30.84, $SD = 5.22$; 50% male, 50% female; 75% British) were previously undergraduate (33 %) or postgraduate (67%) students in engineering (42%), business (42%), accounting and finance (8%), or

physics (8%). They had attended OAE as students, between 2 and 20 years prior to the study ($M = 6.17$, $SD = 4.95$) and were currently employed as managers, event organisers, engineers, or consultants.

The academic staff ($n = 5$; M age = 52.60, $SD = 10.11$; all male; 80% British) accompanied students during OAE and taught on the aforementioned degree courses, with an average of 18.4 years ($SD = 11.8$) teaching experience. Finally, the instructors ($n = 6$; M age = 37, $SD = 9.27$; all male; 83% British) were qualified in different aspects of outdoor provision and specialised in developing groupwork skills in higher education students. All held full-time positions ranging from a trainee instructor to centre manager, with an average of 14 years ($SD = 7.27$) instructing experience.

Approval for conducting the study was granted by the University's Ethics Committee and informed consent was obtained from all participants. An incentive to participate was only given to the alumni participants (£20 pp) and a subsample of students ($n = 24$) who took part in additional focus group discussions (£10 pp).

The OAE Course

All participants had completed a 2 to 5 day residential course at the Raymond Priestley Centre in the North West, UK. The courses were either compulsory parts of degree programmes or extra-curricular options and had been designed by the outdoor pursuit staff in collaboration with the respective academic staff from the school taking part. Although specific aims varied between cohorts, the overall goals of the courses were to develop transferable groupwork skills, self-efficacy, knowledge, and attitudes, build student works groups, and promote integration.

Students attended in cohorts of up to 40 at a time and were divided into groups of five to eight. The activities typically began with 30-minute 'ice breakers', such as blindfolded orienteering, building bridges, and negotiating a 'spiders web'. These icebreakers progressed to more complex activities, such as raft building, ropes courses, canoeing, and tower building. Objectives were embedded into each activity requiring the group to work together to succeed. The instructors observed the groups' progress and led regular reflective discussions. In addition to the activities, groups were issued with a housekeeping rota, and time off was given in the evenings for socialising.

Procedure

Over 2 years, different methods of recruitment and qualitative interviewing were used to capture each of the four perspectives (interview question protocols for each perspective can be found in Appendix 2). All interviews were semi-structured and audio and/or video recorded. Non-leading and open-ended question protocols were developed by four researchers, and refined following group discussions. The questioning was designed to measure all four levels of the Kirkpatrick Model (1994), including both the outcomes and the processes that may have influenced the outcomes (Table 4.1). Using a probing technique, each time participants reported an outcome (or lack of outcome), the interviewer asked 'why?' the outcome did or did not occur in order to uncover the underlying processes.

Table 4.1

Example outcome and process questions targeting each level of the Kirkpatrick model

Kirkpatrick Level	Example outcome questions	Example process questions
Reaction	How have you found the overall experience of OAE?	Which experiences taught you the most?
	Do you think OAE will help you in anyway at university or when you enter employment?	
Learning	Do you think engaging students in OAE is worthwhile?	Is there anything to do with the setting that makes it better for students' development than other settings?
	Were there any general benefits you gained from OAE?	Do some students get more out of it than others?
	Have you learnt anything that you could use during your academic work or future employment?	
Behaviour	Do you notice any changes in students during OAE?	
	Have you applied anything you developed during OAE since returning?	Has anything helped or prevented you from using what you developed during OAE since returning?
	Have you experienced any benefits from OAE since returning?	What advice would you give to students who want to transfer what they developed during OAE to their university degree or the workplace?
Results	Have you noticed any changes in your peer group since returning from OAE?	Do some students gain more long-term benefits than others?
	Did OAE help you complete your degree course in any way?	
	Did OAE help you secure your current job in any way?	
	What is the role of OAE in higher education?	

Note. Similar questions were adapted and asked across the different perspectives.

The student perspective was first obtained whilst students were immersed in their OAE experience ($n = 43$), using a semi-structured video diary room as described in Chapter 3 (Cooley, Holland, et al., 2014). Recruitment took place face-to-face via purposive sampling over five iterations of the OAE course. Whilst alone in the diary room and in front of a video camera, students spent approximately 4-minutes answering 2-3 broad and open-ended questions about

their experience. This method focused on evaluating reactions and learning (i.e., Levels 1 and 2 of the Kirkpatrick model).

Another subset of students ($n = 23$) was recruited via email invitation to attend one of three 1-hour focus group discussions. These students had been back on campus for between 2 and 18-months since attending OAE (mean = 8.11; SD = 7.48). Twenty-one photographs taken during OAE were used to supplement the discussion, stimulate recall, and encourage a deeper reflection of the course (i.e., photo elicitation; see Harper, 2002). An additional focus group was facilitated with six students who had chosen not to attend OAE. The aim of this discussion was to understand why they chose not to attend and their experiences since their peers returned.

The alumni were recruited through an advertisement in an alumni newsletter. One-to-one interviews lasting approximately 30 min were conducted via recorded telephone calls. Questions included asking alumni about their experiences of completing their university degree, seeking employment, and workplace teams. Finally, instructors and academic staff were invited to participate in one-to-one interviews whilst courses were taking place at the outdoor pursuit centre. The interviews lasted between 30 and 60 minutes, and the questions focused on their observations of, and interactions with, their students before, during, and after OAE.

It is important to note that there may have been some degree of positive recruitment bias when recruiting for the student follow-up focus groups and the alumni sample, as those who participated may have been more likely to do so due to having had a more positive and/or memorable experience with OAE. However,

possibly due to the monetary incentive for these samples, some negative cases were included in these data collections. Thorough probing into responses also helped to ensure that accurate processes were uncovered, whenever positive or negative outcomes were discussed.

Using this range of data collection methods allowed the levels of the Kirkpatrick (1994) model to be assessed both 'in the moment' and 'in retrospect', thus ensuring that the participants' responses were not exaggerated by the excitement of having just completed a course (i.e., 'the post course euphoria effect').

Analysis

A total of 24 hr and 14 min of audio was collected (student = 9 hr 12 min; alumni = 6 hr 3 min; instructor = 4 hr 53 min; and academic staff = 4 hr 6 min). Similar to Chapter 3, a conventional content analysis, or thematic analysis, was used to analyse the data (Braun & Clarke, 2006; Hsieh & Shannon, 2005). However, this time, theme development was both deductive and inductive, whereby data was categorised into the levels of the Kirkpatrick model (1994) and themes were developed inductively within each of these levels.

The analysis followed guidelines provided by Braun and Clarke (2006) and Hsieh and Shannon (2005). After a word-for-word transcription, the lead researcher read all transcripts to achieve immersion and gain a sense of the data. Initial coding was then carried out using qualitative analysis software (Nvivo 9.0). During this process, each statement was given a descriptive code one level of abstraction away from the data. Similar codes began to be grouped into broad

themes, which were further organised into higher and lower level themes. Themes were continually checked against the original data to ensure there was enough supporting data and both *internal homogeneity* and *external heterogeneity* existed (Patton, 2003). This process resulted in themes being removed, merged, or divided. Names and definitions were given to uniquely identify and describe each theme.

Establishing credibility. A number of strategies were followed to improve the reliability and validity of the results (see Hsieh & Shannon, 2005; Patton, 2003). First, *prolonged engagement* was used, involving the lead author spending several weeks within the OAE environment, observing the culture and experiences and enabling a greater understanding when interviewing participants. Next, data was *triangulated*, due to being collected from different perspectives, and by having a second researcher independently code 15% of the data before themes were discussed and refined until consensual validation was reached. Then, in a process known as *peer debriefing*, the entire data set was debated and refined with two senior researchers who had been independent of the analytical process. Finally, *referential adequacy* was used, whereby 20% of data across all four perspectives was archived and only analysed once the final themes had been agreed, to test validity.

Results

The resulting themes are presented in two sections: the course outcomes, followed by the processes driving these outcomes. Within each section, themes

are placed within the appropriate level of the Kirkpatrick model. The first level themes are identified by subheadings and the second level themes are italicised within the main text.

Outcomes

Outcomes were categorised into 13 first-level and 36 second-level themes (Table 4.2). The majority of these themes were prevalent across all four perspectives (see Table 4.2). The instructor perspective only contributed towards the *reaction* and *learning* outcome themes due to the instructors' involvement with students ending after they leave OAE.

Reaction.

Affective. Positive affective reactions included enjoyment and excitement, and were driven mostly by the *activities*, *social interactions*, and the *location*, as described by this alumnus, "The place was amazing, that was the first impression I got. It was very good to do it in a different place".

Instrumental. There were also more cognitive, or instrumental, perceptions that attending OAE was advantageous. These feelings included *perceived learning*, *long-term benefits* to academia and employment, *value for money*, and a belief that OAE is a valuable opportunity for *developing groupwork*; for example, "there's no lab [at university] where you can demonstrate teamwork, there's no better lab than [OAE]" (alumnus).

Table 4.2
Outcome themes following OAE based on the Kirkpatrick model

Kirkpatrick level	First level themes	Second level themes	Prevalence			
			Student	Alumnus	Academic	Instructor
Reaction	Affective	Activities	Shaded	Shaded	Shaded	Shaded
		Social interaction	Shaded	Shaded	Shaded	Shaded
	Instrumental	Location	Shaded	Shaded	Shaded	Shaded
		Perceived learning	Shaded	Shaded	Shaded	Shaded
		Perceived long-term benefits	Shaded	Shaded	Shaded	Shaded
Learning	Skill development	Value for money	Shaded	Shaded	Shaded	Shaded
		Developing groupwork	Shaded	Shaded	Shaded	Shaded
		Leadership skills	Shaded	Shaded	Shaded	Shaded
		Task management skills	Shaded	Shaded	Shaded	Shaded
		Communication skills	Shaded	Shaded	Shaded	Shaded
	Attitude development	Cooperation skills	Shaded	Shaded	Shaded	Shaded
		On-going change	Shaded	Shaded	Shaded	Shaded
		Valuing others	Shaded	Shaded	Shaded	Shaded
	Knowledge development	Confidence	Shaded	Shaded	Shaded	Shaded
		Self-awareness	Shaded	Shaded	Shaded	Shaded
Effective task groupwork		Shaded	Shaded	Shaded	Shaded	
Effective interpersonal groupwork		Shaded	Shaded	Shaded	Shaded	
Implications of diversity		Shaded	Shaded	Shaded	Shaded	
Behaviour	Positive groupwork behaviours	Leadership	Shaded	Shaded	Shaded	Shaded
		Communication	Shaded	Shaded	Shaded	Shaded
		Project management	Shaded	Shaded	Shaded	Shaded
		Reflective skills	Shaded	Shaded	Shaded	Shaded
		Identifying roles	Shaded	Shaded	Shaded	Shaded
	Improved social interactions Perspective on groupwork	Working with diversity	Shaded	Shaded	Shaded	Shaded
		Willingness to cooperate	Shaded	Shaded	Shaded	Shaded
		Confidence and assertiveness	Shaded	Shaded	Shaded	Shaded
		Effective project teams	Shaded	Shaded	Shaded	Shaded
		Transfer success	Shaded	Shaded	Shaded	Shaded
Results	Degree	Transfer to academia	Shaded	Shaded	Shaded	Shaded
		Transfer to the workplace	Shaded	Shaded	Shaded	Shaded
		Transfer to personal life	Shaded	Shaded	Shaded	Shaded
	Employment	Transfer failure	Shaded	Shaded	Shaded	Shaded
		Integrated cohort	Shaded	Shaded	Shaded	Shaded
	Personal	Degree success	Shaded	Shaded	Shaded	Shaded
		Employability	Shaded	Shaded	Shaded	Shaded
		Job performance	Shaded	Shaded	Shaded	
		Personal development	Shaded	Shaded	Shaded	
		Memorable experience	Shaded	Shaded	Shaded	

Note. Shading is used to indicate when a theme was prevalent in a perspective. See appendix 2.6 for a detailed thematic map including definitions and example quotes

Learning.

Skill development. Students reported improving their *leadership skills*, including the ability to manage groups and “draw out the strengths that people have (alumnus)”, and their task-management skills, which helped students to problem-solve, plan, and manage time more effectively. They also discussed improving their communication skills, feeling more able to share ideas and express themselves, and their skills in cooperation; whereby students felt more proficient at promoting synergy within their group through collaboration and conflict resolution, becoming better able “to get on with your team members, [and learning] how to work as part of a team and how to collaborate with each other (student)”.

Attitude development. Students developed an appreciation that groupwork behaviour cannot always be changed overnight, and that there was a need for *ongoing change* after returning from OAE. For example, one international student said at the end of OAE, “I need to learn to be more confident and to increase my English to express my ideas and be more, be more strong in the team”. Students also *valued others* more by the end of OAE, including seeing the value of groupwork, being more tolerant of others, and appreciating individuality and diversity. An alumnus recalled how they had “learnt to be a lot more accepting of different people’s opinions”, and a current student realised that “working in groups ... it’s way better than working alone”. There was also development of *confidence* towards working in groups. An academic noted that students “become less shy” and an instructor talked about observing “it changing people, you know the old shoulders go back, the chin comes up”.

Knowledge development. There was an increase in students' *self-awareness* of their strengths and weakness when working in groups. An alumnus recalled "when I had reviews [group reflection] people said ... 'I know you probably didn't realise it but right then you were being quite negative' ... I was like 'oh, that's interesting, I didn't know that about myself'". Students developed their knowledge of what *effective task groupwork* entailed, including goal directed and strategic groupwork skills and effective use of team roles; for example, "it helped me to understand how to work in teams better and those things, focus, planning, execution, re-strategising" (student). Students also developed their understanding of *effective interpersonal groupwork* behaviours, such as trust, emotional support, cohesion, and self-sacrifice; for example, "I've realised that in a working group you need to trust your group members, you need to have trust, you need to believe in them" (student). The final subtheme was improved knowledge of the *implications of diversity*. For example, students learnt what is needed to work effectively in mixed groups, including "[learning] about different international cultures" (alumnus) and "[learning] some of the taboos" (student).

Behaviour.

Positive groupwork behaviours. After returning from OAE, students reported demonstrating positive groupwork behaviours. An alumnus discussed improved *leadership*, in which they felt better able "to cooperate with your team, to drive the performance of the team ... to be successful as the leader is the same as doing an activity [during OAE]". Improved *communication* was another theme, for example, "I think it's the talking and the listening ... they are much better at that"

(academic); as well as better *project management*, for example, “individuals having handed in their first [dissertation] chapter, as they were nowhere near, and they credit attending the [OAE] programme” (academic). More effective *reflective skills* were evident as an alumnus described “taking a step back and looking at the situation but also thinking am I reacting here like I should”. Other positive groupwork behaviours were *identifying roles*, with one student describing being better able to “Find out the individual’s shining points ... we divided our assignments into different parts, everybody is responsible ... he is very good at calculating so we told him to do the calculating part”; and *working with diversity*, which involved an improved ability to work with different backgrounds and personalities; for example “being able to get an impression of that person’s personality, how they like to deal with things” (alumnus).

Improved social interactions. Outside of the more formal groupwork situations, there was also evidence of improved social interactions, where students became more open, engaging, and supportive of each other. For example, this student describes how “people kind of are a bit more open to each other and it’s a lot easier to even just say hi to someone you recognise, which didn’t really happen before [OAE]”.

Perspective on groupwork. Students also developed a new perspective on groupwork during OAE, which influenced their feelings towards working in groups back on campus. Students showed greater *willingness to cooperate* with others and engage in groupwork. They continued to see the value in groupwork

and demonstrated understanding, trust, and tolerance of one another. This alumnus recalls, “it made me realise that I should perhaps give people a chance before I immediately cut them off”. In addition, students had become more *confident and assertive* during groupwork; for example, “I feel a lot more confident in working with different cultures, and different people” (student), and “it taught me a new type of assertiveness, which is the ability to say no” (alumnus).

Effective project teams. The final theme within behaviour was the development of effective project teams. Based on a combination of the aforementioned themes, students who attended OAE in designated teams functioned more effectively when they returned to higher education to work on an academic project together. For example, an engineering student talked of role allocation, “I applied it into my project myself this year, this robot project. Every individual should have some task and he should be wholly responsible for that task ... everyone is important”.

Transfer success. Many students successfully transferred these behaviours after returning from OAE. *Transfer to academia* was reported, where, for example, academic staff described how “you can even see the change” in students. There was also *transfer to the workplace*; for example, an alumnus described learning being “easily transferable from what I saw [during OAE] to what I’m doing on a daily basis”. Students also noted *transfer to personal lives*, such as “I play badminton with my friends and we always play double, so that is cooperation that I can use these skills”. Similarly, an alumnus talked about

transfer occurring “when you’re living in a shared house ... there’s all sorts of possibilities for disagreements about bills or cleaning duties”. There were, however, occasional reports of *transfer failure*; for example, “we haven’t interacted that well as a group [since returning], so I thought we’d actually do better” (student).

Results.

Degree course. OAE benefitted students on their degree course by resulting in more *integrated cohorts*. The increased interactions and groupwork behaviours highlighted in the behaviour level of analysis had led to broader friendship groups and the breaking down of social barriers. For example, “I think it broke up your little friendship group that you’d made in the first year and it just made them bigger, it made the whole year almost integrate” (alumnus). This academic also describes how integration led to an increased sense of belonging, particularly in international students, “they just become less shy and feel more part of the cohort rather than ‘somebody from overseas’”. It was also believed that OAE contributed towards *degree success*, through a combination of the skills developed and the more socially supportive peer groups. For example, “I could talk to different people and knowing different people’s opinions who think very differently to you definitely helped my grades” (alumnus).

Employment. Participation in OAE was felt to improve initial *employability*; students could demonstrate training and increased awareness of groupwork skills in the written application, group assessment, and interview stages of recruitment;

for example, “when they asked when have you worked in a team, when have you acted as a leader, [OAE] was able to give me those experiences” (alumnus). Once employed, OAE was also believed to have facilitated graduates’ *job performance*, by providing the necessary skills for a smooth transition into the workplace. For example, one academic described how “companies that came forward and said we need to do x, y, and z to prepare them for the working world – this [OAE] does that”.

Personal. Personal results included *personal development*, where OAE had helped students develop as individuals with broader skill sets; one alumnus commented, “I do really think that the experience definitely has changed me”. OAE also provided students with a *memorable experience*, adding to their overall satisfaction with their university experience. An academic summed this theme up nicely, “you talk to most alumni about the MBA and it won’t be long before [OAE] comes up as part of what they remember and 99.9% it’s fond memories”.

Processes

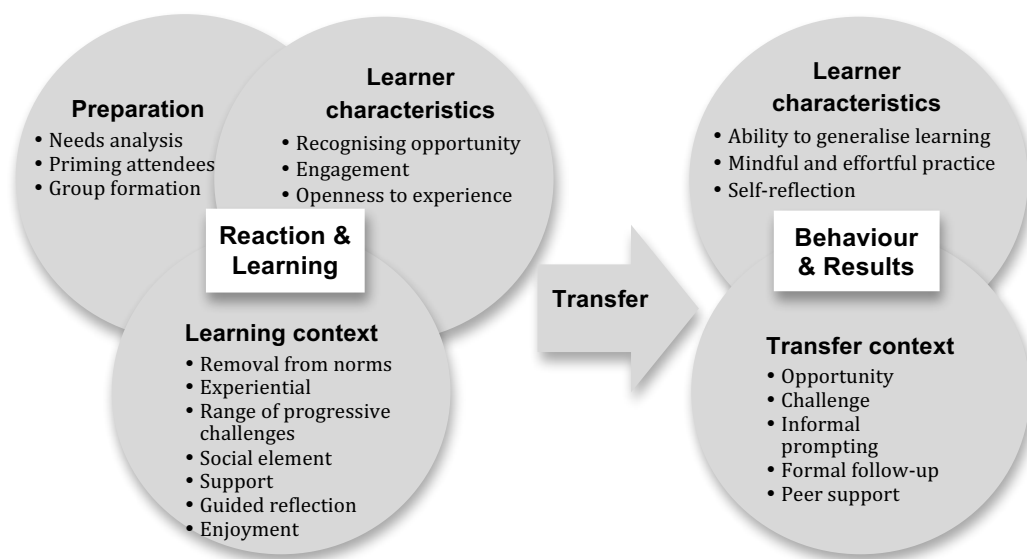
The processes behind the outcomes were categorised into five first-level and 21 second-level themes. These themes are represented graphically in Figure 4.1, which presents the model for optimal learning and transfer (MOLT). Each of these themes was prevalent across all four perspectives.

Reaction and learning.

Preparation. The data raised the importance of carrying out a *needs analysis* prior to OAE to tailor the activities, course objectives, and level of challenge, to the particular group of students taking part. This instructor explains, “it’s good to know what [the academic staff] wants them to experience so you can use your style of instruction to emphasise those certain qualities ... otherwise we’re guessing what they want, or they’re guessing what we can provide”.

Figure 4.1

A model for optimal learning and transfer (MOLT) during training and education



Note. Similar to the Kirkpatrick (1994) model, *reaction* represents attendees’ initial emotional and cognitive response to a course (e.g., enjoyment and satisfaction); *learning* represents pre- to post-course changes in attendees’ skills, knowledge, and attitudes; *behaviour* represents the behavioural changes that occur when attendees have returned from a course; and *results* represents the benefits these changes have had on attendees and/or their organisations. Supported by the results of the present study, the factors outlined in each circle should be followed to improve the reaction, learning, behaviour, and results obtained during training courses and educational experiences. See appendix 2.6 for a detailed thematic map including definitions and example quotes.

Another form of preparation involves priming the attendees by explaining why they are attending, the expected course outcomes, and ensuring any concerns are addressed. From the instructor perspective, “if you get a group that

have been well briefed and it's been sold to them, they just hit the ground running that little bit quicker, they're hungry for it rather than hesitant". Although some academics didn't always provide such information (e.g., "I might joke in the lecture that we ... you know, give you a box of matches and you've got to build a bridge across a river ... I never specify exactly what's going to happen"); however, this lack of information concerned some students (e.g., "before I went I don't know what I'm going to do ... It really scared some of my classmates ... some of them can't swim").

A final preparation involved *group formation*; where possible, groups attending OAE should be mixed, rather than self-selected, so that students can experience working with different cultures, working styles, and capabilities. This alumnus pointed out that "confidence grows the more different situations and different people and different experiences you have". It was observed during the present study that diversity in groups was noticeably reduced when students were allowed to select groups themselves.

The data suggest that adhering to this preparation before OAE could help ensure that that students approach OAE with desirable learner characteristics.

Learner characteristics. Reaction and learning during OAE tended to be greater in students who *recognised opportunities*, were fully *engaged*, and had an *openness to experience*. *Recognising opportunities* involved students' being more aware of what, and how, learning can occur during OAE and how this learning might benefit them in the future. For example, thinking about "the skills you already have and the skills you want to practice during the whole course"

(student). However, this alumnus warned that it is “sometimes hard for a student to see the value in these things”.

Student *engagement* was characterised as a willingness to embrace the challenge, push themselves, be persistent, and make an effort to be active participants in OAE. For example, one student describes learning resulting from doing “things that I’ve never done before, just facing my fear of heights and getting out there” and an instructor said, “I’ll have an idea about what I want to get done in the day but it’s their willingness to follow me”.

Lastly, a psychological *openness to the experience* involved being curious, adventurous, and able to absorb the experience and new learning. For example, an academic said, “It’s hard to self-reflect if you don’t have that curiosity ... you’re not going to push it” and an instructor commented that it is hard to teach if “the mechanics of working with other people isn’t of interest to them”.

Learning context. The final themes that influenced reaction and learning concern how the learning context was structured. *Removal from norms*, where students were taken into a novel environment, resulted in a range of benefits, such as increased social proximity, reduced distraction, disruption of previous hierarchies and segregation, removal from comfort zones, and more memorable learning. An academic described a couple of these benefits, “You take away a lot of the hierarchy because everybody has got stuck in and everybody is just as uncomfortable in the environment so it levels the playing field”. Another theme was that students benefited from *experiential learning*. Students were able to experiment and master new behaviours and receive immediate feedback from

instructors, peers, and the natural environment itself, for example, “you can sit back and watch them fall in the water, all the team building and all the theories come out” (academic). One instructor explained, “people have actually got evidence from [OAE] of what worked for them and what didn’t work ... that they can then implement in the next situation”.

Students also benefited from facing *a range of progressive challenges*, whereby the learning outcomes often reflected those aspects most challenged by OAE. For example, restricting communication through blindfolding developed communication skills particularly in those students who felt most hampered by this intervention. The challenges faced came from both the activities and the household chores, as described by this alumnus, “I’d say the chores were as important as the activities themselves because I was not used to the organised sort of chores”. Students also appreciated the challenge of progressing throughout OAE (e.g., “Tomorrow when we’re doing the orienteering up the lake and the land, it will be a lot more challenging ... now we’re more comfortable with each other as a group, there will probably be some more conflict”).

Other contextual influences included the *social environment*, where a balance was needed between time spent doing activities and down time for socialising and relaxing. For example, one student explained how “it was pretty exhausting after we did a whole day of hiking, so we could play some of the games there at night and, well, I really liked that ... the exercise [hiking] built up our teamwork skills and this event [social activity] got us to know each other more”.

Students benefitted from *support* received from the instructors, academic staff, and recent graduates acting as mentors. For example, one alumnus

explained how “knowing the [academic staff] on a more personal level helped, so like helped me be able to approach them and say if you had a problem”. However, not all academic staff took this opportunity; for example, “Some lecturers come up and just sit in their room on their laptop you know ... see it as a bit of a holiday ... and leave the students with us” (instructor).

Guided reflection, before, during, and after activities, was most effective when it was focused on how learning can be applied outside of the learning context. Talking about the need for reflection one instructor said, “sometimes people get hung up on the success of the activity ... sometimes they do struggle to understand what made them successful. And then when they go and have another encounter with their [academic] project they haven’t really learnt a lesson they can take away”.

Finally, the learning context needed to be *enjoyable*, as this encouraged engagement and learning and made the experience more memorable. For example, one student said, “We are just having fun, so it is much more easier for us, for me to, to, join the group and I feel quite relaxed ... it’s much more easy to open up” and an instructor commented, “if fun isn’t in there then they don’t have an educational experience. They switch off”.

Behaviour and results.

Learner characteristics. Learner characteristics also influenced students’ ability to transfer the outcomes obtained from OAE. These included students’ *ability to generalise learning*. For some, the ability to identify similarities between OAE and the transfer environment came easily; however, others found it difficult,

for example, “going back to the University it’s absolutely another environment. So it is very difficult to compare what you gain” (student). Students who were able to generalise skills across settings also benefitted from *mindful and effortful practice* of these skills. For example, this alumnus explained, “I did make a conscious effort to remember it and actually practice using it afterwards. So I think if there’s a way that it stuck after the course it was because I was kind of looking out for something like that”. Those most able to transfer were also those who continued *self-reflecting* after OAE, as this alumnus recommended, “remember [OAE] and compare that with the experience that you are living now”.

Transfer context. The transfer environment can also be designed to facilitate transfer. First, students needed an *opportunity* to transfer and further develop the skills learnt during OAE. An alumnus noted that the timing of OAE in their degree course sometimes limited this transfer, stating, “it [OAE] was around April when most of the [degree] course was complete, you don’t have any more groupwork”. When opportunity is provided, it also needed to be *challenging*. For example, despite having the opportunity, this student didn’t feel pushed to use the skills they had learnt, “I remember what we have learned but ... I don’t think the situation in campus we need those kinds of skills to do things”. Students also benefitted from *informal prompting*; one academic recommended putting “pictures up just to remind them what’s happened and then ask them ‘ok what have you done different?’ ... and ask for example, if they are not doing anything differently then we ask then ‘why is it?’ ... ‘Has there been a barrier?’”. This prompting could also involve *formal follow-ups*, such as another OAE activity, training session, or

mentoring, aimed at helping students' continued development and transfer of skills. An instructor explained how "skills don't transfer themselves, they have to be built into the system, i.e., at University, something that facilitates that to develop, that nurtures that". In most cases, no such follow-up was provided, as highlighted by this alumnus, "it was just kind of expected that after we'd spent that weekend away that we would put the skills to use". A final contextual influence on transfer was *peer support*. One student commented, "[during OAE] everyone wants to try so they cooperate to make the team a success, but sometimes in assignments [back at university] someone can be lazy and don't want to".

Discussion

The present study took a novel, systematic, and multi-perspective approach to evaluating learning and transfer, which was based on the 4-level Kirkpatrick model (1994). Key stakeholders reported that a short OAE course for students was an enjoyable and effective way to improve groupwork related attitudes, knowledge, and skills (Kirkpatrick level 1 & 2; Reaction and Learning), and encourage groupwork behaviour, social interactions, and more positive approaches to groupwork back at University (Kirkpatrick level 3; Behaviour). In the longer term, OAE was felt to contribute to more integrated cohorts, degree success, employability, and the personal development of students (Kirkpatrick level 4; Results). This supports the contention of the review in Chapter 2 (Cooley, Burns et al., 2015) that OAE can be used to support groupwork skill development, reflective learning, cross-cultural integration, and employability, which are considered crucial aspects of higher education (Wilson, 2012). The present

findings expand on those from Study 2 and previous literature by demonstrating a broader range of outcomes, and longer-term benefits at levels 3 and 4 of the Kirkpatrick model, from a range of stakeholders. More generally, this study presents an approach to training evaluation that may be replicated in other educational and professional contexts.

The Kirkpatrick model was also used to explore the processes that underpinned the outcomes of OAE, an approach that overcomes previous criticism that the Kirkpatrick model is only useful for evaluating training outcomes and not processes (Bates, 2004). These process themes were used to produce the model for optimal learning and transfer (MOLT). It was found that students' reaction and learning during OAE was determined by the preparation before OAE, learner characteristics, and the learning context itself. The need to tailor courses based on the attendees' needs, set clear learning objectives, and ensure attendees are committed to change is in line with an earlier model of the OAE transfer process (Gass, 1985). In addition, our model is consistent with social behavioural theories such as the theory of planned behaviour (Ajzen, 1985), which have demonstrated that successful behaviour change (e.g., improving groupwork skills) is dependant on the individuals' attitudinal beliefs surrounding the behaviour and their intentions to change. The present study (Study 3) supports the previous suggestion in Study 2 that positive learner characteristics could be influenced through the information and encouragement individuals receive prior to a behavioural change intervention such as OAE (e.g., Cooley, Holland et al., 2014). Further, many of the elements recommended for an optimal learning context are supported by previous theories. For example, Kolb's experiential learning cycle (1984) stresses the importance of

learning through direct experience, receiving feedback, and incorporating periods of reflection. Similarly, the model of the Outward Bound process (Walsh & Golins, 1976) highlights the importance of social interaction, a novel and challenging learning environment, and taking people outside of their comfort zones, which leads to adaptive behaviour and new learning.

The model for optimal learning and transfer also elucidates factors that influence behaviour change and results once attendees return to their transfer environment. The need for continued practice as way of embedding and further developing the learning that OAE may have started is in concordance with previous theories used to explain transfer following OAE (e.g., Kolb's [1984] experiential learning cycle; Gass' [1985] model of the transfer process; and turning point theory [Gotlib & Wheaton, 1997]). In addition, theories and models found within the organisation training and development literature are also supported by our findings. For example, the model of the transfer process by Baldwin and Ford (1988) describes how individuals need to possess an ability to generalise learning across contexts, and the transfer environment should provide opportunity, support, and follow-up.

The model for optimal learning and transfer builds upon the 'experience' themes identified in Study 2, and adds to the OAE literature by providing a model generated from data that could be empirically tested in the future. It incorporates previous theories and models to give a single model that explains how learning and transfer can be facilitated throughout the entire learning and transfer process. The model may benefit training and development researchers and practitioners as it offers a set of important factors to be considered in the design and evaluation of

courses. We encourage researchers to empirically evaluate the proposed model to test the relative importance of each recommendation in other learning and training contexts.

Conclusion

In summary, Study 3 supports OAE as a potential solution to the need for training and developing groupwork skills in higher education. It is the first study to evaluate the long-term impact of OAE in higher education and in doing so, has provided strong evidence of numerous benefits resulting from these programs. The evaluation also outlined a range of areas to improve reaction, learning, behaviour, and results following OAE. An empirical model of these factors has been developed, which can be used to guide future courses and evaluations in other areas of training and development. Finally, Study 3 demonstrates how a training course can be systematically evaluated using the Kirkpatrick model, a combination of qualitative data collection techniques, and multi-perspectives, an approach that can be replicated in other contexts of training evaluation.

So far in this thesis, a selection of rich themes have been identified that demonstrate the varied benefits of OAE, along with the personal and environmental relationships that help to explain why some students experience more substantial benefits than others. The following chapters use a quantitative approach to build on these findings through triangulation. That is, Studies 4 and 5 seek to quantify the statistical and practical significance of some the changes and relationships identified in previous Chapters, within a larger sample of students.

Study 4:

USING THE KIRKPATRICK MODEL TO EXPLORE
TRANSFERABLE SKILL DEVELOPMENT THROUGH
OUTDOOR ADVENTURE EDUCATION:
REACTION AND LEARNING (PART 1)

A version of this chapter is currently under second review under the following reference:

Cooley, S. J., Burns, V. E., & Cumming, J. (under review). Using Outdoor Adventure Education to Develop Transferable Skills in Higher Education: A Quantitative Evaluation of Reaction and Learning. *Journal of Experiential Education*.

Extracts have also been presented at the following conference:

The 6th International Outdoor Education Research Conference (2013), University of Otago, New Zealand.

Introduction

Groupwork during university enhances academic achievement, social support, self-esteem, retention, and a range of employability skills (Cumming, Woodcock, Cooley, Holland, & Burns, 2014). As shown in Chapter 2, some universities facilitate the benefits of groupwork by supplementing academic groupwork with short, intense outdoor adventure education (OAE) courses (Cooley, Burns, & Cumming, 2015). These residential courses typically involve between 1 and 5 days of structured outdoor activities such as raft building and ropes courses. The activities are designed to encourage social interaction and test and develop groupwork skills to benefit the students on their return to university. The impact of this type of OAE in students requires more systematic evaluation and is the focus of the present study.

Kirkpatrick's (1994) model of training evaluation has been shown in previous Chapters to be a systematic approach to evaluating the outcomes of OAE. Based on the Kirkpatrick model, a thorough evaluation should span four levels. Level 1 (Reaction) measures attendees' initial feelings after completing a training experience, including enjoyment and satisfaction. Level 2 (Learning) assesses changes in knowledge, skills, and/or attitudes from pre-to post-training, such as groupwork self-efficacy and the intention to transfer learning to another setting. Level 3 (Behaviour) explores behaviour change when attendees return home to their typical working environments (e.g., improved group behaviour). Finally, Level 4 (Results) refers to the overall impact these changes have on target outcomes, such as improved academic performance. Due to the complexity of the model and a rich quantitative dataset, the present study is split into two parts. Part

1 (Chapter 5) focuses on Levels 1 and 2 of the Kirkpatrick model and Part 2 (Chapter 6) focuses on Levels 3 and 4.

Although few studies have used the Kirkpatrick model to evaluate OAE, previous findings do map onto certain levels of the model. The review in Chapter 2 identified 11 studies that used a combination of methods to evaluate OAE used in universities to develop groupwork (Cooley, Burns et al., 2015). Among the qualitative studies, Prince and Dunne (1998) analysed student reactions and learning using open-ended questions administered at the end of a single day OAE course for law students. Students enjoyed OAE (Level 1) and reported developing numerous groupwork skills such as problem solving and reflection, as well as increased confidence (Level 2). More recently in Chapter 3 (Cooley et al., 2014), a video diary room was used to capture engineering students' reactions and learning whilst immersed in OAE. Themes within the data also revealed high course satisfaction (Level 1) and the development of groupwork skills, such as communication, role-allocation, and leadership, as well as more positive perceptions of the value of groupwork (Level 2).

Quantitative studies have also explored students' reaction and learning during OAE. For example, Mazany, Francis, and Sumich (1997) distributed a bespoke questionnaire before and after a group of business students completed a 4-day OAE course. Although significant increases were measured in groupwork skills such as decision making, inclusion of team members, communication, cohesion, time management, planning, and problem solving (Level 2), the authors suggested that further research was needed using more valid and reliable measures of groupwork. Juriza and colleagues (2011) surveyed a cohort of

students before and after their third and final 4-day OAE course during a 5-year medical degree. A large percentage (83%) believed that OAE had contributed to their development of groupwork skills (Level 2); however, no valid questionnaire scales were reportedly used, nor was the data subject to statistical analysis.

Although previous research suggests OAE may be effective in developing groupwork at university, evidence has been limited by the use of unvalidated questionnaires, and a lack of baseline measures and appropriate statistical analysis (Hattie et al., 1997; Cooley, Burns et al., 2015). In addition, a study has yet to evaluate OAE using a conceptually grounded measure of groupwork skills that includes both 'task' groupwork skills (i.e., goal directed behaviours, such as planning, goal setting, establishing roles, and monitoring group progress) and 'interpersonal' groupwork skills (i.e., social behaviours, such as conflict resolution, attentiveness, social support, and positive reinforcement) (Cumming et al., 2014; Stevens & Campion, 1994).

More research is also required to explore the processes that underpin and predict the outcomes measured (Sibthorp & Arthur-Banning, 2004; Ewert, 1989). Hayes (2013) argued that studies should not only measure whether or not outcomes 'do' occur, but also help to explain 'how' they occur, such as by exploring variables that may predict and/or mediate outcomes, which leads to practical recommendations for course improvement. For example, Shivers-Blackwell (2004) found students' attitudes towards groupwork before OAE related positively to group behaviours during OAE. Mirkin and Middleton (2014) identified the importance of the instructor during OAE, and Propst and Koesler (1998) found

a relationship between self-efficacy towards the outdoor activities used during a course and continued engagement with OAE.

The Kirkpatrick model can, and has, been used to guide a more structured evaluation of these processes. Chapter 4 looked specifically at the processes behind the development of groupwork skills at each of the four levels. Following a longitudinal, qualitative investigation into OAE, the model for optimal learning and transfer was devised (MOLT; Cooley, Cumming et al., 2015). The model for optimal learning and transfer suggests that learning and transfer is facilitated by a set of contextual and learner characteristics, such as attitudes prior to OAE, perceived instructor support, course enjoyment, openness to experience, engagement, and motivation to transfer (Cooley, Cumming et al., 2015).

Altogether, previous research suggests that attitudes, self-efficacy, and reaction to the learning environment (e.g., enjoyment and instructor satisfaction) may influence the development of groupwork skills during OAE. These assertions are also supported by Bandura's (1977) self-efficacy theory and the theory of planned behaviour (Ajzen, 1991), which emphasise the need for positive attitudes and self-efficacy in the development of behavioural intentions and behaviour change.

The Present Study

In summary, previous studies suggest that OAE may be effective in developing groupwork skills, self-efficacy, and attitudes in students. However, there has yet to be a quantitative evaluation in higher education using psychometrically valid questionnaires to measure these constructs. In addition, more focus is needed on

the processes that underpin the development of groupwork skills, and the subsequent intention to transfer these skills. Therefore, the aims of Study 4 were twofold: a) to measure the outcomes of OAE at Levels 1 and 2 of the Kirkpatrick model (i.e., reaction to OAE and the instructors, enjoyment, task and interpersonal groupwork skills, attitudes and self-efficacy, and intention to transfer learning); and b) to examine the processes behind these outcomes (i.e., which of the psychological constructs measured predict outcomes at Levels 1 and 2 of the Kirkpatrick model).

Hierarchical multiple regression is used in the present study to examine the relationships behind the reaction and learning outcomes. Based on previous research, Chapters 3 and 4, the theory of planned behaviour (Ajzen, 1991), and Bandura's (1977) self-efficacy theory, it was first hypothesised that students' perceptions of their existing groupwork skills, attitudes, and self-efficacy measured before OAE would positively predict their reaction variables (i.e., enjoyment and course and instructor evaluations) and subsequent learning variables (i.e., groupwork skills, attitudes, self-efficacy, and transfer intention), taken at the end of OAE. Baseline measures were therefore controlled for in Step 1 of the hierarchical multiple regression and interpreted when significant predictors emerged. Second, it was hypothesised that measures of course reactions, groupwork attitudes, and self-efficacy, taken at the end of OAE, will positively predict the development of task and interpersonal groupwork skills, and students' intentions to transfer these skills to other settings. Further, as there has been little evidence to suggest a unidirectional relationship exists across the levels of the Kirkpatrick model (i.e., reactions predicting learning and not the other way around;

Gessler, 2009; Allinger et al., 1997), it was lastly hypothesised that reaction variables may have a bidirectional relationship with learning variables, as was found in Chapter 4. Therefore, hierarchical multiple regressions were used in the present study to test whether reactions predict learning, as well as whether learning predicts reactions.

Method

Participants

During the course of the study, 303 students took part in one of several iterations of OAE with their respective cohort. Seventy-nine percent ($n = 238$) consented to participate in the study and completed a pre-course questionnaire pack, and ninety-six percent of these ($n = 228$) went on to complete a post-course questionnaire pack. These participants (M age = 21.48, $SD = 2.19$; male = 65%, female = 35%) comprised undergraduate students in electronic, electrical and computer engineering ($n = 100$) and mechanical engineering ($n = 63$), and postgraduate students in business ($n = 75$). The majority were international students (67%), mainly from China (46% of all participants), with others describing their ethnicity as Asian or Asian British (15% of all participants), black or black British (5% of all participants), white European (4% of all participants), mixed (1% of all participants), or other (6% of all participants). A total of 22 different first languages were reported.

The OAE Course

Students took part in a 3-day OAE course designed to challenge and develop groupwork skills. Activities were facilitated by trained instructors and progressed from 30-min icebreakers such as blindfolded orienteering exercises, to more complex activities such as raft building and team orienteering. All tasks required groups of 5-8 students to work together to complete objectives and engage in reflective discussions. Groups also worked together to complete daily housekeeping duties (see Table 5.1 for an example itinerary).

Table 5.1
A typical itinerary for a 3-day OAE course developing groupwork in students

Day 1	Day 2	Day 3
Arrive midday	Raft building	Orienteering and reflection
Reflective discussion about qualities of effective groups	High and low ropes course	Housekeeping
4 x 30 min problem solving activities (e.g., building a bridge, tower building, negotiating a 'spiders web', reaching a marker blindfolded). Frequent reflective discussion.	Open canoe team tasks	Debrief
House keeping	Periods of reflection throughout the day	Leave midday
Evening free time	House keeping	
	Evening free time and prep for final day activity	

Note. Activities varied between cohorts and weather conditions

Measures

All of the questionnaire scales used can be found in Appendix 3.1.

Demographic information. The participants provided their age, sex, degree course, first language (English vs. other), and status (home/European

Union vs. international student).

Kirkpatrick model Level 1 (Reaction). The main reaction variable was an overall course evaluation, using a two-item index previously used in higher education (e.g., “I would recommend this course to a friend”; Filak & Sheldon, 2008). Both items were highly correlated with one another ($r = .80, p < .001$), thus supporting the use of an average across both items. In addition, measures of enjoyment and instructor evaluation were taken as these were found in Chapter 4 to influence course evaluation (Cooley, Cumming et al., 2015). The instructor evaluation was obtained using another two-item index (e.g., “Overall, this instructor was excellent”; Filak & Sheldon, 2008), which were also highly correlated ($r = .73, p < .001$). Enjoyment was measured using seven items from the interest/enjoyment subscale of the intrinsic motivation inventory (e.g., “I enjoyed doing the activities very much”; Ryan, 1982). All items were rated between 1 (*not at all true*) and 7 (*very true*) and averaged for each variable.

Kirkpatrick model Level 2 (Learning).

Groupwork skills. Students’ self-reported use of effective groupwork skills was obtained using the 10-item groupwork skills questionnaire (GSQ; Cumming, et al., 2014). The GSQ is a multidimensional measure of task (e.g., “clearly define the roles of each group member”) and interpersonal (e.g., “provide emotional support to my group members”) groupwork skills. At baseline, following the stem “When working in groups I tend to...” students rated the items between 1 (*never*) and 5 (*always*). An average was calculated for each subscale. The GSQ has demonstrated good content and factorial validity, internal reliability, temporal

stability, and concurrent validity with related constructs (Cumming et al., 2014). Students completed the GSQ again at the end of the OAE using the stem “when working in groups during OAE, I...”.

As this is the first time the GSQ has been used to measure change in higher education and contextualised to a specific situation such as OAE, the psychometric properties were reassessed in the present study. A confirmatory factor analysis was run using Amos (Version 6.0) to confirm whether the 2-factor model was a good fit with the data. At the pre-course time point, items showed good factor loadings to their respective variables (.44 to .80 for task, and .45 to .69 for interpersonal). A significant Chi-square was found, $\chi^2 (34) = 53.47, p = .018$; however, this is often considered a poor assessment of model fit due to its sensitivity to sample size and correlations within the model (Tabachnick & Fidell, 2013). We were able to conclude that the model was a good fit based on the other indices measured, such as the standardized root mean square residual (SRMR = .049), root mean square error of approximation (RMSEA = .051) and the comparative fit index (CFI = .961), which, for a good model fit, should be $\leq .08, \leq .07$ and $\geq .9$, respectively (Tabachnick & Fidell, 2013). At the post-course time-point, good factor loadings were again found (.45 to .76 for task, and .43 to .71 for interpersonal) as well as a significant Chi-square, $\chi^2 (34) = 94.78, p < .001$. The SRMR, RMSEA, and CFI were near satisfactory at .070, .089, and .88, respectively. Overall the GSQ model fit was considered acceptable for inclusion in the present study, however further testing is needed in other samples. In addition, moderate inter-factor correlations were found between the task and interpersonal subscales (pre = .52, post = .53) indicating two distinct but related variables.

Together, these results contribute towards the evidence base for the validity of the GSQ.

Groupwork self-efficacy. Groupwork self-efficacy (GWSE) was measured using a revised version of the Personal Efficacy Beliefs Scale (PEBS; Riggs, Warka, Babasa, Betancourt, & Hooker, 1994). Similar to McClough and Rogelberg's (2003) use of the GWSE in higher education, items referring to 'general work' were replaced with wording referring to 'work in groups'. The 10 items assess students' confidence and motivation to demonstrate skills that facilitate groupwork (e.g., "I have all the skills needed to perform very well in groups"), rated on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). After reverse-coding 6 items, the scores are averaged to form a measure of groupwork self-efficacy. Riggs and colleagues (1994) have reported evidence in support of the validity and reliability of this scale.

Attitude towards groupwork. The Attitude Towards Working in a Group scale (ATWG) measures how students feel about working with others (Chapman & Van Auken, 2001). It consists of eight bipolar items (i.e., bad/good experience, waste of time/good use of time) that are rated on a 7-point semantic differential scale (1 = *unfavourable*; 7 = *favourable*) and averaged. This scale has previously demonstrated good psychometric properties via principal components factor analysis and adequate internal reliability (Chapman, Meuter, Toy, & Wright, 2006).

Transfer intention. A 6-item scale was created based on the theory of planned behaviour (Ajzen, 1991). The items were designed to measure beliefs about the groupwork skills developed during OAE. Each item (e.g., “I intend to use the groupwork skills I developed during OAE when I next work in groups as part of my academic course”) was rated on a 7-point scale (1 = *extremely unlikely*, 7 = *extremely likely*). After reverse-coding two items, the six items were averaged to form a measure of transfer intention. As the scale was created for the purposes of the present study, an exploratory CFA was used to test for model fit. Initially, the fit was poor ($\chi^2 (9) = 197.47, p < .001$; SRMR = .161; RMSEA = .306; and CFI = .737), with the two reverse-coded items appearing problematic due to poor factor loadings ($< .16$) and high standardised residual covariance (> 3.37). On removing these two items from the model, the fit became acceptable ($\chi^2 (2) = 15.60, p < .001$; SRMR = .049; RMSEA = .074; and CFI = .975). As a result, the 4-item scale was used in the subsequent analysis (see appendix 3.1).

Procedure

The university ethics committee granted permission prior to recruitment and informed consent was obtained from participants before questionnaires were completed. Participants were recruited face-to-face before they left to attend OAE. Questionnaires were completed just before and at the end of the course before students returned home. The GSQ, GWSE, and ATWG were completed at both time points to assess the Kirkpatrick model Level 2 (Learning). Learning was deemed to have occurred if scores for the GSQ, GWSE, and/or ATWG improved significantly from pre- to post-course. The post-course questionnaire also included

transfer intention as an additional indicator of learning, as well as course evaluation, instructor evaluation, and enjoyment, which assessed the Kirkpatrick model Level 1 (Reaction).

Results

Preliminary Analysis

Analyses were conducted using SPSS version 21. Data was screened and checked for outliers and normality (i.e., skewness and kurtosis). Extreme scores observed in some variables were retained, as they were considered a true reflection of the sample measured and had minimal effect on the 5% trimmed means (Tabachnick & Fidell, 2013). As expected, many of the scales violated the Kolmogorov-Smirnov test of normality, mostly due to a negative skew. As this test can be over-sensitive with large samples, where the risks of non-normal data are reduced, distributions were instead considered reasonably normal based on observations of histograms and Q-Q plots (Tabachnick & Fidell, 2013). Following Cronbach's alpha calculations, satisfactory levels of internal reliability were found for all variables (i.e., above .70; Vincent, 1999; Table 5.2).

Main Analysis

Outcomes. Descriptive statistics are presented in Table 5.2 for all variables. With reference to students' reaction (Level 1), the mean scores for course evaluation, instructor evaluation, and enjoyment were at the higher end of the scale suggesting that, on average, the majority of students had a positive

reaction to OAE. The mean scores also suggest that the majority of students had an intention to transfer learning back to university (Level 2).

Table 5.2
Scales, alpha coefficients, means, and standard deviations for study variables

			Pre-Course	Post-course
	Scale	α	Mean (SD)	Mean (SD)
Course evaluation	1-7	-	-	6.11 (1.03)
Instructor evaluation	1-7	-	-	6.37 (0.72)
Enjoyment	1-7	.91	-	6.03 (0.87)
Interpersonal GSQ	1-5	.72	3.68 (0.57)	3.92 (0.54)
Task GSQ	1-5	.75	3.68 (0.58)	3.65 (0.57)
GWSE	1-5	.74	3.41 (0.49)	3.66 (0.51)
ATWG	1-7	.94	5.24 (1.15)	5.85 (1.12)
Transfer intention	1-7	.81	-	5.60 (0.98)

Note. The Groupwork Skills Questionnaire (GSQ) is from Cumming et al. (2014); the Group Work Self-Efficacy (GWSE) measure is from McClough and Rogelberg (2003); the Attitude Towards Working in Groups (ATWG) measure is from Chapman and Van Auken (2001); α displayed only for variables with 3 or more items.

To compare the effect size for each learning outcome (Level 2), eta square (η^2) was calculated based on recommendations from Levine and Hullett (2002), and interpreted according to Cohen (1988), whereby an η^2 of .01 = small, .06 = moderate and .14 = large. To reduce the risk of type 1 error, a Bonferroni adjustment was applied to significance tests ($\alpha = .016$; calculated as .05/the number of analyses used; Tabachnick & Fidell, 2013). Pre- to post-course changes in the GSQ were measured using repeated measures multivariate analysis of variance (RM MANOVA). A significant multivariate effect was found across time points, $F(2,222) = 28.84, p < .001$. Univariate ANOVAs revealed a significant, large increase over time in the interpersonal subscale: $F(1,223) = 43.44, p < .001, \eta^2 = .16, CI = .17$ to $.31$, but no significant change in the task

subscale: $F(1,223) = 0.56, p = .45, \eta^2 = .003, CI = -.10 \text{ to } .05$. There was also a significant, large increase from pre- to post-course for both GWSE ($F(1,225) = 63.12, p < .001, \eta^2 = .22, CI = .19 \text{ to } .31$) and ATWG ($F(1,221) = 55.38, p < .001, \eta^2 = .20, CI = .45 \text{ to } .78$).

Processes. Hierarchical multiple regression (HMR) was used to examine the processes. HMR was chosen because it allowed for statistical control of demographics (age, sex, home vs. international student status, degree course, and English first language vs. English non-first language) and pre-course scores (GSQ, GWSE, and ATWG), whilst sequentially entering variables in sets according to the levels of the Kirkpatrick model. For example, when predicting a learning outcome (e.g., post-course GSQ), demographics and pre-course scores (where appropriate) were controlled for in Step 1, reaction variables (i.e., course evaluation, instructor evaluation, and enjoyment) were entered in Step 2, and the other learning variables (i.e., GWSE and ATWG) were entered in Step 3. One HMR was used to predict course evaluation. Course evaluation was considered the main indicator of reaction (Level 1) because it incorporates a more generalised view of students' overall course satisfaction compared to enjoyment and instructor evaluations alone, and it is typically used when evaluating learning experiences in higher education (Filak & Sheldon, 2008). A further three HMRs were used to predict key learning variables (Level 2; i.e., post course task and interpersonal GSQ and transfer intention).

On the first run of the HMR analysis, collinearity diagnostics were examined to ensure that no independent variables contributed more than 50% of the

variance to two or more regression coefficients (Cohen, Cohen, West, & Aiken, 2002). No variables were excluded for these reasons. In addition, to lower the risk of Type 1 and 2 error, adjusted R^2 were used, non-significant control variables were removed from the models to increase power in a subsequent run of the analysis (Cohen et al., 2002), and a Bonferroni adjustment was applied ($\alpha = .013$).

On occasions when an independent variable appeared to mediate the relationship between another independent variable and the dependent variable (i.e., a significant predictor becomes non-significant after another step is added to the model), mediation was assessed using the PROCESS macro for SPSS introduced by Hayes (2013). This analysis involved 10,000 bootstrap re-sampling to obtain bias corrected, 95% confidence intervals (Hayes, 2013).

Factors predicting Reaction (Kirkpatrick Level 1).

Course evaluation. A HMR assessed the ability of reaction measures (instructor evaluation and enjoyment) and learning measures (post-course GSQ, GWSE, and ATWG) to predict course evaluation after controlling for demographics and pre-course measures (Table 5.3).

The overall model was significant, $F(8, 216) = 51.92, p < .001$, and accounted for 65.8% of the variance ($\text{adj } R^2 = .65$). The control variables at Step 1 accounted for a significant amount of variance ($R^2 = .11$), with pre-course interpersonal GSQ emerging as a significant and positive predictor ($\beta = .26$). The addition of instructor evaluation and enjoyment at Step 2 contributed the majority of variance, $F_{\text{change}}(2, 220) = 170.60, p < .001$, with both variables emerging as significant and positive predictors ($\beta = .17$ and $.67$). The addition of the post-

course learning variables at Step 3 did not significantly contribute to the explanation of course evaluation, $F_{\text{change}}(4, 216) = 0.83, p = .51$, nor did any of the individual variables within Step 3 emerge as significant predictors.

Table 5.3
A summary of the hierarchical regression analysis when predicting Reaction (Level 1)

	ΔR^2	B	β	t	95% Confidence Interval	
					Lower bound	Upper bound
<i>Course evaluation</i> ^{Reaction}						
Step 1	.11**					
Degree course		.24	.18	2.77*	.07	.41
Pre-course interpersonal GSQ		.46	.26	4.01**	.24	.69
Step 2	.54**					
Degree course		.13	.09	2.30†	.02	.23
Pre-course interpersonal GSQ		.06	.03	0.77	-.09	.21
Instructor evaluation ^{Reaction}		.24	.17	3.36**	.10	.37
Enjoyment ^{Reaction}		.79	.67	13.46**	.68	.91
Step 3	.01					
Degree course		.12	.09	2.13†	.01	.23
Pre-course interpersonal GSQ		.04	.02	0.50	-.13	.21
Instructor evaluation ^{Reaction}		.23	.16	3.28**	.09	.37
Enjoyment ^{Reaction}		.76	.64	11.79**	.64	.89
Post-course interpersonal GSQ ^{Learning}		.03	.02	0.31	-.18	.24
Post-course task GSQ ^{Learning}		.13	.07	1.43	-.05	.31
Post-course GWSE ^{Learning}		-.13	-.06	-1.34	-.32	.06
Post-course ATWG ^{Learning}		.03	.03	0.70	-.06	.12

Note. The Groupwork Skills Questionnaire (GSQ) is from Cumming et al. (2014); the Group Work Self-Efficacy (GWSE) measure is from McClough and Rogelberg (2003); the Attitude Towards Working in Groups (ATWG) measure is from Chapman and Van Auken (2001); † $p < .05$, * $p < .013$ (adjusted alpha), ** $p < .001$; superscript after variables denotes the associated level of the Kirkpatrick (1994) model; B = unstandardised beta coefficient; β = standardized beta coefficient.

As the effect of pre-course interpersonal GSQ (entered in Step 1) was no longer significant after instructor evaluation and enjoyment were added in Step 2, the potential for mediation was explored. Results of the mediation analysis confirmed the mediating role of both instructor evaluation and enjoyment in the relationship between pre-course interpersonal groupwork skills and course evaluation (B = .08; CI = .03 to .16 and B = .36; CI = .19 to .53, respectively; Figure 5.1).

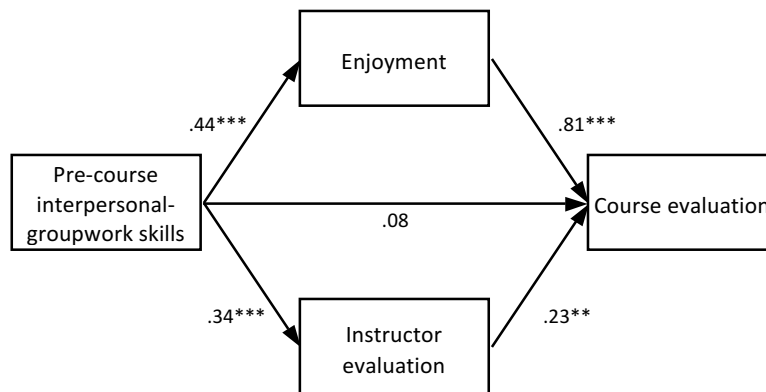


Figure 5.1. The mediating role of enjoyment and instructor evaluation in the relationship between pre-course interpersonal-groupwork skills and course evaluation. Unstandardised beta weights are presented. ** $p < .01$. *** $p < .001$.

Factors predicting Learning (Kirkpatrick Level 2). HMR was used to assess the ability of reaction measures (course evaluation, instructor evaluation, and enjoyment) and some learning measures (GWSE and ATWG) to predict variation in other key learning measures (post-course interpersonal and task GSQ and transfer intention), whilst controlling for demographics and pre-course measures (Table 5.4).

Table 5.4
A summary of the hierarchical regression analysis when predicting Learning (Level 2)

	ΔR^2	B	β	t	95% Confidence Interval	
					Lower bound	Upper bound
<i>Post-course interpersonal GSQ^{Learning}</i>						
Step 1	.28**					
Pre-course interpersonal GSQ		.46	.49	8.47**	.35	.56
Step 2	.08**					
Pre-course interpersonal GSQ		.41	.44	7.66**	.30	.52
Course evaluation ^{Reaction}		.04	.08	0.91	-.05	.14
Instructor evaluation ^{Reaction}		.03	.04	0.51	-.08	.13
Enjoyment ^{Reaction}		.13	.21	2.25 [†]	.02	.24

Step 3	.11**					
Pre-course interpersonal GSQ		.39	.41	7.76**	.29	.49
Course evaluation ^{Reaction}		.04	.08	0.90	-.05	.13
Instructor evaluation ^{Reaction}		.01	.01	0.13	-.09	.10
Enjoyment ^{Reaction}		.05	.08	0.93	-.06	.16
Post-course task GSQ ^{Learning}		.24	.25	4.10**	.12	.35
Post-course GWSE ^{Learning}		.05	.05	0.82	-.07	.18
Post-course ATWG ^{Learning}		.12	.24	4.12**	.06	.17
<i>Post-course task GSQ^{Learning}</i>						
Step 1	.33**					
Pre-course task GSQ		.49	.51	8.92**	.39	.60
Pre-course GWSE		.20	.17	3.07*	.07	.33
Step 2	.04*					
Pre-course task GSQ		.47	.48	8.36**	.36	.58
Pre-course GWSE		.20	.18	3.15*	.08	.33
Course evaluation ^{Reaction}		.07	.12	1.38	-.03	.17
Instructor evaluation ^{Reaction}		-.07	-.09	-1.35	-.18	.03
Enjoyment ^{Reaction}		.09	.14	1.54	-.03	.21
Step 3	.12**					
Pre-course task GSQ		.35	.36	6.54**	.25	.46
Pre-course GWSE		-.002	-.002	-0.02	-.14	.13
Course evaluation ^{Reaction}		.04	.08	0.90	-.05	.13
Instructor evaluation ^{Reaction}		-.06	-.08	-1.30	-.16	.03
Enjoyment ^{Reaction}		.03	.04	0.50	-.08	.14
Post-course interpersonal GSQ ^{Learning}		.20	.19	3.35**	.08	.32
Post-course GWSE ^{Learning}		.37	.33	5.22**	.23	.51
Post-course ATWG ^{Learning}		-.06	-.12	-2.05†	-.12	-.002
<i>Transfer intention^{Learning}</i>						
Step 1	.11**					
Pre-course interpersonal GSQ		.41	.24	3.59**	.18	.63
Pre-course ATWG		.15	.17	2.63*	.04	.26
Step 2	.23**					
Pre-course interpersonal GSQ		.17	.10	1.60	-.04	.37
Pre-course ATWG		.10	.12	2.00†	.001	.20
Course evaluation ^{Reaction}		.27	.28	3.05*	.10	.45
Instructor evaluation ^{Reaction}		.05	.03	0.48	-.14	.23
Enjoyment ^{Reaction}		.26	.23	2.41†	.05	.47
Step 3	.06**					
Pre-course interpersonal GSQ		.26	.15	2.29†	.04	.48
Pre-course ATWG		.02	.03	0.43	-.08	.13
Course evaluation ^{Reaction}		.23	.24	2.70*	.06	.40
Instructor evaluation ^{Reaction}		.02	.02	0.26	-.16	.21
Enjoyment ^{Reaction}		.18	.16	1.68	-.03	.39
Post-course interpersonal GSQ ^{Learning}		-.20	-.11	-1.51	-.46	.06
Post-course task GSQ ^{Learning}		.39	.22	3.31**	.16	.62
Post-course GWSE ^{Learning}		-.26	-.14	-2.13†	-.50	-.02
Post-course ATWG ^{Learning}		.22	.25	3.59**	.10	.34

Note. † $p < .05$, * $p < .013$ (adjusted alpha), ** $p < .001$; superscript after variables denotes the associated level of the Kirkpatrick (1994) model; B = unstandardised beta coefficient; β = standardized beta coefficient.

Post-course interpersonal GSQ. The overall model was significant, $F(8, 216) = 23.82, p < .001$ and accounted for 46.9% of the variance ($\text{adj } R^2 = .45$). The control variables at Step 1 accounted for the majority of variance ($R^2 = .28$), with pre-course interpersonal GSQ emerging as a significant and positive predictor ($\beta = .49$). The addition of the reaction variables at Step 2 contributed additional variance, $F_{\text{change}}(3, 220) = 9.11, p < .001$, but none of the individual variables emerged as significant predictors. The addition of the other learning variables at Step 3 also contributed to the explanation of post-course interpersonal GSQ, $F_{\text{change}}(4, 216) = 11.06, p < .001$, with post-course task GSQ and post-course ATWG emerging as significant and positive predictors ($\beta = .25$ and $.24$).

Post-course task GSQ. The overall model was significant, $F(9, 214) = 22.54, p < .001$ and accounted for 48.7% of the variance ($\text{adj } R^2 = .47$). The control variables at Step 1 accounted for the majority of variance ($R^2 = .33$), with pre-course task GSQ and pre-course GWSE emerging as significant and positive predictors ($\beta = .51$ and $.17$). The addition of the reaction variables at Step 2 contributed additional variance, $F_{\text{change}}(3, 218) = 4.84, p = .003$, but none of the individual variables emerged as a significant predictor. The addition of the other learning variables at Step 3 also contributed to the explanation of post-course task GSQ, $F_{\text{change}}(4, 214) = 12.02, p < .001$, with post-course interpersonal GSQ and post-course GWSE emerging as significant and positive predictors ($\beta = .19$ and $.33$).

Transfer intention. The overall model was significant, $F(9, 212) = 15.32, p < .001$ and accounted for 39.4% of the variance ($\text{adj } R^2 = .37$). The control variables at Step 1 accounted for a significant amount of variance ($R^2 = .11$), with pre-course interpersonal GSQ and pre-course ATWG emerging as significant and positive predictors ($\beta = .24$ and $.17$ respectively). This time, the reaction variables at Step 2 contributed the majority of variance, $F_{\text{change}}(3, 216) = 24.53, p < .001$, with course evaluation emerging as a significant and positive predictor ($\beta = .28$). The addition of the other learning variables at Step 3 also contributed to the explanation of transfer intention, $F_{\text{change}}(4, 212) = 5.15, p = .001$, with post-course task GSQ and post-course ATWG emerging as significant and positive predictors ($\beta = .22$ and $.25$).

As pre-course interpersonal GSQ and pre-course ATWG (entered as Step 1) were no longer significant predictors of transfer intention when course evaluation was entered in Step 2, the potential for mediation was again assessed. This additional analysis confirmed the mediating role of course evaluation in the relationship between pre-course interpersonal groupwork skills and transfer intention ($B = .24$; $CI = .14$ to $.38$; Figure 5.2). Course evaluation was also confirmed to mediate the relationship between pre-course attitudes towards groupwork and transfer intention ($B = .07$, $CL = .02$ to $.15$; Figure 5.3).

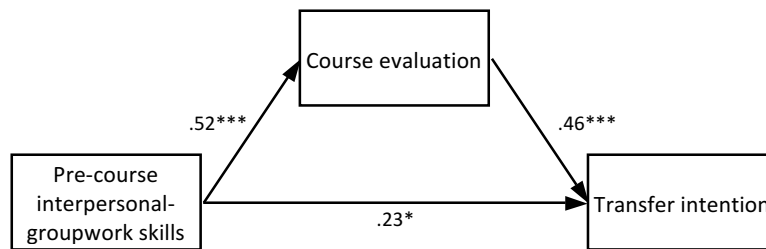


Figure 5.2. The mediating role of course evaluation in the relationship between pre-course interpersonal groupwork skills and transfer intention. Unstandardised beta weights are presented. * $p < .05$. *** $p < .001$.

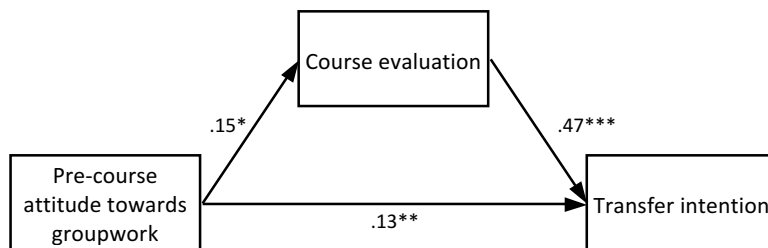


Figure 5.3. The mediating role of course evaluation in the relationship between pre-course attitudes towards working in a group and transfer intention. Unstandardised beta weights are presented. * $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The first aim of Study 4 was to assess the outcomes of OAE at Levels 1 and 2 of the Kirkpatrick model. At Level 1, descriptive statistics revealed positive reactions to the OAE experience in terms of enjoyment, satisfaction with the instructors, and general course evaluation. This finding supports the previous Chapters that have consistently found OAE to be a memorable and highly valued aspect of the university experience.

At Level 2, OAE was found to improve students' perceived use of interpersonal groupwork skills and their self-efficacy and attitudes towards groupwork. Despite students typically scoring themselves highly in all three of these areas before beginning OAE, there were still significant improvements

reported from pre- to post-course indicating the occurrence of learning. In addition, students, on average, ended OAE with high intentions to transfer their learning back to university. Based on these findings, the present study supports the use of OAE in developing groupwork outcomes in students.

It is interesting to note that learning was evident in interpersonal groupwork skills but not task groupwork skills. This finding could be explained simply by the OAE course being less effective in developing task groupwork skills. However, this explanation contradicts Chapters 3 and 4, in which students reported developing an array of task related skills during the same OAE course. An alternative explanation could be that due to a lack of structured groupwork skills training prior to OAE, students may have overestimated their abilities at baseline. As they became more aware of what task groupwork behaviour involves during OAE, they may have provided more critical, and perhaps more accurate, measures post-OAE. This effect has been observed in previous interventions designed to enhance life skills (e.g., Holland, 2010; Woodcock, Duda, Cumming, Sharp, & Holland, 2012) and may be more likely to occur in task groupwork skills as students report using these less often during university than interpersonal groupwork skills (Cumming et al., 2014).

A second aim of the present study was to investigate some of the psychological constructs that predict outcomes at Levels 1 and 2 of the Kirkpatrick model. At Level 1, mediation analysis revealed that students' perceived use of interpersonal groupwork skills before OAE positively predicted their reaction to the instructor and level of enjoyment reported at the end of OAE which, in turn, predicted a more positive reaction to OAE overall. In line with self-efficacy theory

(Bandura, 1977), it is likely that students with a stronger belief in their interpersonal skills at baseline have a more positive interaction with their peers and instructors, experience more enjoyment during OAE, and ultimately value the experience more as a whole. The mediation analyses within this study were, however, exploratory and intended for theory building as opposed to theory testing. Therefore, further replication and testing is required to increase faith in these findings.

At Level 2, scores for interpersonal and task groupwork skills reported at the end of OAE were positively predicted by the three reaction variables (enjoyment, instructor evaluation, and course evaluation), but only when these variables were entered into the model collectively, as none offered a significant individual contribution to variance. Interpersonal and task groupwork skills reported at the end of OAE were also positively predicted by post-course attitude and self-efficacy towards groupwork. These findings offer some support the model for optimal learning and transfer from Chapter 4 (MOLT; Cooley, Cumming et al., 2015) in demonstrating a positive relationship between a set of course reaction variables and subsequent learning during OAE. Furthermore, in line with self-efficacy theory (Bandura, 1977) and the theory of planned behaviour (Ajzen, 1991), these findings also demonstrate that attitudes and self-efficacy play an important role in the development of groupwork behaviour during OAE. Study 4 also indicates that a person's attitude towards groupwork influences their interpersonal behaviour during OAE, whereas their self-efficacy towards groupwork influences their task groupwork behaviour; this relationship requires further empirical testing.

Finally, Study 4 revealed that pre-course interpersonal groupwork skills and attitudes positively predicted intention to transfer outcomes back to university. This relationship was mediated by students' overall course evaluation, whereby scores for attitude and interpersonal groupwork skills at baseline positively predicted students' overall course evaluation, which in turn, positively predicted transfer intention. These findings support the theory of planned behaviour (Ajzen, 1991) in demonstrating that a favourable attitude towards groupwork, and positive perceptions of existing groupwork skills, are likely to facilitate behavioural intentions to transfer the outcomes of OAE. However, the findings also again reveal the importance of having a positive reaction to the learning experience itself.

Overall, these findings have a number of implications for practitioners. First, more could be done to improve students' attitudes and perceived groupwork skills before they attend OAE. For example, the model for optimal learning and transfer (Cooley, Cumming et al., 2015) recommends providing pre-course educational information, in the form of a video, workshop or briefing, to instil a greater belief in the importance of developing groupwork skills and an increased awareness of existing groupwork abilities for students to build on. Based on Study 4, any improvements in attitudes and beliefs resulting from this type of frontloading are likely to result in a more positive reaction to OAE, improved learning, and greater intentions to transfer new learning. Further research is now required to investigate the impact of pre-course psychological interventions.

Another practical implication highlighted is the need for practitioners to reinforce positive attitudes and self-efficacy towards groupwork during their

feedback and reflection time. The development of groupwork skills would likely be facilitated if students are convinced that learning is both meaningful and applicable when next faced with groupwork. The present study also highlights the importance of students responding positively to the learning environment and their instructors, for optimal learning and transfer intentions to occur. This finding could be explained in part by self-determination theory, which recommends that, for optimal growth, social development, and personal well-being, a learning environment should encourage feelings of competence, the ability to relate to the instructors and course content, and feelings of autonomy over the learning process (Ryan & Deci, 2000). To achieve this environment, it may be important for courses to be tailored and flexible to the needs of the specific group attending, for the learning objectives to be well explained to students, and to allow students control and input over their development and activity selection during OAE (Cooley, Cumming et al., 2015; Ryan & Deci, 2000).

With regard to the methods used in the present study, the benefits of using the Kirkpatrick model to structure an evaluation are evident. In adopting a systematic approach, the present study addressed a number of limitations previously highlighted in OAE studies (Scrutton & Beames, 2015; Cooley, Burns, et al., 2015), such as using a range of validated questionnaires, baseline measures, and exploring both outcomes and processes. Whilst some psychometric properties were assessed in the questionnaire scales used, continued work on these scales is required before the validation process can be considered complete. For example, further CFAs are required using new data sets and in different contexts.

Some limitations were difficult to avoid, such as the lack of a control group. As the present study was field-based and involved a convenience sample of students who were attending OAE, the only accessible control participants were students from different degree courses who were not offered OAE, or students who had chosen not to attend. A control group made up of these students would be likely to have different characteristics, making any resulting outcomes difficult to attribute to OAE alone. Instead, the present study opted to strengthen a single sample design by incorporating the exploration of processes by which outcomes occurred (Cooley, Burns et al., 2015; Scrutton & Beames, 2015).

Another consideration within the methods used was the possibility of questionnaire responses being exaggerated by a 'post-course euphoria' effect or social desirability bias, driven by the emotional high of having just completed a course (McEvoy, 1997). Whilst this risk is inherent to many social science studies, steps were taken in the present study to reduce bias. For example, questionnaires were handed out by researchers who were independent from the OAE program, and who gave clear, unbiased instructions to participants with regard to them answering honestly and confidentially, as recommended by Cumming (2013).

Conclusion

To conclude, Study 4 provides a thorough and novel evaluation of OAE. A 3-day course was found to significantly improve groupwork in university students from pre- to post-course. It was also evident that learning, and intention to transfer learning, is optimised when students react positively to the learning experience and have positive attitudes and self-efficacy towards groupwork before and during

OAE. Part 2, in Chapter 6, follows on from this study by exploring whether outcomes at Levels 1 and 2 of the Kirkpatrick model (1994) predict changes in behaviour (Level 3) and results (Level 4) once students return to University.

Study 5:

USING THE KIRKPATRICK MODEL TO EXPLORE
TRANSFERABLE SKILL DEVELOPMENT THROUGH
OUTDOOR ADVENTURE EDUCATION:
BEHAVIOUR AND RESULTS (PART 2)

Extracts from this chapter have been presented at the following conference:

The 6th International Outdoor Education Research Conference (2013), University of Otago, New Zealand.

Introduction

Many universities send students on outdoor adventure education (OAE) courses to improve their groupwork skills, on the premise that approaches learned in this context will benefit group activities back on campus. Based on the review in Chapter 2, there is some evidence that OAE is effective, in terms of developing groupwork skills, building effective work groups, positive attitudes, and improved integration at university, which has been further supported in subsequent Chapters. In Chapter 2, 11 studies were identified that evaluated the impact of OAE on groupwork in university students, of which 9 included some form of transfer measure, including questionnaire, observation, interview, or academic performance measures (Cooley, Burns, et al., 2015). For example, Odello, Hill, and Gómez (2008) found improvements in self-efficacy towards groupwork and leadership remained elevated 6-weeks after students returned to university. Similarly, Harun and Salamuddin (2010) found improved cooperation skills and leadership ability to be maintained at follow-up. Other findings have been more varied; for example, whilst Vlamis, Bell, and Gass (2011) found students to report having more mature peer relationships after returning to university, there was a significant decrease in their tolerance towards others. In addition, despite Gass (1987) providing early evidence that OAE results in improved academic grades, Mazany, Francis, and Sumich (1997) did not find any improvement in students' academic groupwork performance following a 4-day OAE course. Despite demonstrating the potential for transfer from OAE to university, the review in Chapter 2 concluded that more systematic evaluation is warranted to better understand the long-term efficacy of such programs (Cooley, Burns et al., 2015).

Further to the need for more systematic evidence, few studies have measured which attributes, or processes, of OAE predict successful transfer (Sibthorp, Furman, Paisley, Gookin, & Schumann, 2011; Cooley, Burns et al, 2015). This is unfortunate, as understanding the processes underpinning the effects of OAE would inform successful adventure programming and pre- and post-OAE support. Theoretical models such as the theory of planned behaviour (Ajzen, 1991) suggest potential candidates for exploration. For example, the theory of planned behaviour proposes behaviour change at follow-up may be influenced by attitudes, self-efficacy, and intention to transfer. In addition, the model for optimal learning and transfer (MOLT), introduced in Chapter 4, used qualitative data to identify a number of personal and environmental factors that influence the success of OAE (Cooley, Cumming, Holland, & Burns, 2015). The model suggests that learning and transfer is most likely to occur when there are positive pre-course attitudes towards OAE, favourable reactions to OAE in terms of enjoyment and perceived instructor support, effort to transfer what is learnt, and explicit opportunities to transfer what has been learnt to a different environment. Similarly, in another model of the transfer process, Foxon (1994) describes how conscious effort is required from the learner in the initial stages of transfer, before transfer becomes automatic.

This two-part quantitative study used Kirkpatrick's (1994) model of training evaluation to evaluate OAE in university students. The Kirkpatrick model recommends that an evaluation should target four levels: Level 1 (Reaction) measures attendees' initial feelings after completing a training experience; Level 2 (Learning) assesses changes in knowledge, skills, and/or attitudes from pre-to

post-training; Level 3 (Behaviour) explores behaviour change when attendees return home to their typical working environments; and Level 4 (Results) refers to the overall impact resulting from the training. This systematic approach ensures that four important areas of course outcomes are explored. In addition, the Kirkpatrick model provides a framework for investigating the processes by which each outcome occurs.

In Chapter 5, Part 1 of this study focused on the first two levels of the Kirkpatrick model. At Level 1, students reacted positively to a 3-day OAE course in terms of their overall evaluation of the course, satisfaction with the instructors, and the level of enjoyment experienced. At Level 2, significant improvements were measured from pre- to post-course in students' perceived use of interpersonal groupwork skills, attitudes towards groupwork, and groupwork self-efficacy. Students also ended OAE with high intentions to transfer these outcomes back to university. In terms of the underlying processes, students' overall course evaluation (Level 1) was positively predicted by enjoyment, instructor satisfaction, and baseline scores for interpersonal groupwork skills. In addition, learning and intention to transfer learning (Level 2) were greater in those students who reacted more positively to the learning experience (Level 1) and who had more positive attitudes and self-efficacy towards groupwork at pre- and post-course.

The Present Study

Study 5 (Part 2) explored students' behaviour at university 12 weeks after OAE (Level 3), in terms of their self-reported use of groupwork skills, groupwork

attitudes, and groupwork self-efficacy. The overall benefits resulting from OAE were also measured (Level 4), in terms of perceived benefit within and outside of university, and academic performance. In terms of processes, Study 5 investigated several expected relationships using hierarchical multiple regressions. First, similar to Study 4, it was anticipated that baseline measures of groupwork skills, attitudes, and self-efficacy taken prior to OAE would be positively related to the follow-up variables at levels 3 and 4. Therefore, when predicting outcome variables at levels 3 and 4, these baseline measures were entered as control variables in Step 1 of the hierarchical multiple regressions and interpreted when significant predictors emerged. Second, it was hypothesised that the level 1, reaction variables (i.e., course evaluation, enjoyment, and instructor satisfaction) and the level 2, learning variables (i.e., groupwork skills, attitudes, self-efficacy, and transfer intention) taken at the end of OAE, would also be positively related to the follow-up variables at levels 3 and 4. These variables were therefore grouped and entered into subsequent steps of the regression models. Finally, measures of transfer effort and transfer opportunity were also taken at follow-up and included as additional predictor variables within regression models predicting outcomes at levels 3 and 4.

In summary, based on previous research, the model for optimal learning and transfer (Cooley, Cumming at al., 2015), the theory of planned behaviour (Ajzen, 1991), and the stages of the transfer process model (Foxon, 1994), it is hypothesised that transfer following OAE (i.e., levels 3 and 4 of the Kirkpatrick model) will be positively predicted by measures, taken both before and after OAE,

of groupwork skills, attitudes, self-efficacy, reactions to OAE, transfer intention, transfer effort, and transfer opportunity.

Method

Participants

Of the 238 who completed a pre- and post-course questionnaire in Part 1 (Chapter 5), 169 (71%) completed a follow-up questionnaire and were included in the present study. These participants ($M_{age} = 21.49$, $SD = 2.22$; male = 66%, female = 34%) were undergraduate students in electronic, electrical and computer engineering (42%) and mechanical engineering (27%), and postgraduate students in business (31%). The majority were international students (64%), mainly from China (49% of all participants), with 19 different first languages reported. The university ethics committee granted permission prior to recruitment and informed consent was obtained from participants.

The OAE Course

Students completed a 3-day OAE course, designed to challenge and develop groupwork skills. Activities were facilitated by trained instructors and progressed from 30-min icebreakers such as blindfolded orientation exercises, to more complex activities such as obstacle courses and team orienteering. All tasks required groups of 5-8 students to work together to complete objectives and subsequently engage in reflective discussions (see Table 5.1 for an example itinerary).

Measures

The questionnaire assessed all four levels of the Kirkpatrick model (Table 6.1), and determined basic demographic information, including age, sex, degree course, first language (English vs. other), and status (home/European Union vs. international student). All of the questionnaire scales used can be found in Appendices 4.1 and 5.1.

Kirkpatrick model Level 1 (Reaction). Two 2-item indexes were used to measure overall course evaluation (e.g., “I would recommend this course to a friend”) and instructor evaluation (e.g., “Overall, this instructor was excellent”; Filak & Sheldon, 2008). Enjoyment was measured using seven items from the interest/enjoyment subscale of the intrinsic motivation inventory (e.g., “I enjoyed doing the activities very much”; Ryan, 1982). All items were rated on a 7-point scale (1 = *not at all true*, 7 = *very true*) and averaged for each variable.

Kirkpatrick model Levels 2 and 3 (Learning and Behaviour).

Groupwork skills. Students’ perceived use of effective groupwork skills was measured pre- and post-course to assess learning, and again at follow-up to assess behaviour, using the 10-item Groupwork Skills Questionnaire (GSQ; Cumming, et al., 2014). The GSQ is a multidimensional measure of task (e.g., “clearly define the roles of each group member”) and interpersonal (e.g., “provide emotional support to my group members”) groupwork skills. For pre-course and follow up, the stem was “When working in groups I tend to...”, whereas at post-course it was context-specific, “When working in groups [during OAE], I...”. In all

cases, students rated the items between 1 (*never*) and 5 (*always*) and an average calculated for each subscale. The GSQ has demonstrated good content and factorial validity, internal reliability, temporal stability, and concurrent validity with related constructs (Cumming et al., 2014) and was shown in Chapter 5 to have adequate model fit when used to assess outdoor education (Cooley, Burns, & Cumming, under review).

Groupwork self-efficacy. Group work self-efficacy (GWSE) was measured pre- and post-course to assess learning, and again at follow-up to assess behaviour, using a revised version of the Personal Efficacy Beliefs Scale (PEBS; Riggs, Warka, Babasa, Betancourt, & Hooker, 1994). The 10 items assess students' confidence and motivation to demonstrate skills that facilitate groupwork (e.g., "I have all the skills needed to perform very well in groups"). These were rated from 1 (*strongly disagree*) to 5 (*strongly agree*). After reverse coding six items, an average score was calculated. Riggs and colleagues (1994) have reported evidence in support of the validity and reliability of this scale.

Attitude towards groupwork. The Attitude Toward Working in a Group scale (ATWG; Chapman & Van Auken, 2001) was used pre- and post-course to assess learning, and again at follow-up to assess behaviour. It has eight bipolar items to measure how students feel about working with others (i.e., bad/good experience, waste of time/good use of time) that are rated on a 7-point scale (1 = *unfavourable*; 7 = *favourable*) and averaged. This scale has demonstrated good psychometric properties via principal components factor analysis and by having adequate internal reliability (Chapman, Meuter, Toy, & Wright, 2006).

Transfer intention. A 4-item scale was created based on the theory of planned behaviour (Ajzen, 1991) to measure students' post-course intentions to transfer the groupwork skills they had developed. Each item (e.g., "I intend to use the groupwork skills I developed during OAE when I next work in groups as part of my academic course") was rated between 1 (*extremely unlikely*) and 7 (*extremely likely*), and an average score was calculated. The scale was shown to have adequate model fit when used in Chapter 5 (Cooley, Burns, & Cumming, under review).

Behaviour change. A single item was created to measure perceived behaviour change at follow-up ("I have used groupwork skills that I developed during OAE"). This item was rated between 1 (*strongly disagree*) and 7 (*strongly agree*).

Kirkpatrick model Level 4 (Results).

Perceived benefits. Single items were created to measure academic benefits ("my academic work has benefited from the groupwork skills I developed during OAE") and non-academic benefits ("other aspects of my life have benefited from the groupwork skills learnt during OAE") at follow-up. These items were rated between 1 (*strongly disagree*) and 7 (*strongly agree*).

Academic grades. Students' academic records were accessed at the end of the academic year to obtain their year average and project marks for those students ($n = 100$) who took part in a group project module following OAE.

Additional process measures.

Transfer effort. A 3-item scale was created to assess students' effort and awareness towards transferring the skills developed during OAE, such as setting transfer goals and remembering what was learnt (e.g., "I have achieved goals that I set myself after OAE to help me use the skills I learnt since returning"). These items were rated between 1 (*strongly disagree*) and 7 (*strongly agree*) and averaged.

Transfer opportunity. To assess transfer opportunity, students were asked to tick whether or not they had experienced six different categories of academic and non-academic groupwork since returning from OAE (e.g., study groups, lab/seminar groupwork, group coursework/presentation, social groups, society/voluntary groups, and workplace groups) (0 = *no*, 1 = *yes*). A space was provided for participants to record other types of groupwork experiences, but none were reported. A total score was calculated ranging from 0 to 6.

Table 6.1
Questionnaire content at each time point

	Pre-course questionnaire (Part 1)	Post-course questionnaire (Part 1)	Follow-up questionnaire (Part 2)
Demographics	X		
Course evaluation		X ^{*L1}	
Instructor evaluation		X ^{*L1}	
Enjoyment		X ^{*L1}	
Groupwork skills questionnaire (GSQ)	X	X ^{*L2}	X ^{*L3}
Groupwork self-efficacy (GWSE)	X	X ^{*L2}	X ^{*L3}
Attitude towards working in groups (ATWG)	X	X ^{*L2}	X ^{*L3}
Transfer intention		X ^{*L2}	
Behaviour change			X ^{*L3}
Academic benefit			X ^{*L4}
Non-academic benefit			X ^{*L4}
Transfer opportunity			X
Transfer effort			X

Note. ^{*L1, L2, L3, L4} = the level of the Kirkpatrick model addressed: Level 1 = Reaction, Level 2 = Learning, Level 3 = Behaviour, Level 4 = Results.

Results

Preliminary Analysis

Analyses were conducted using SPSS (version 21). Data was screened and checked for outliers and normality. Distributions were considered to be reasonably normally distributed based on observations of histograms and Q-Q plots (Tabachnick & Fidell, 2013). Following Cronbach's alpha calculations, satisfactory levels of internal reliability were found for all variables (Table 6.2).

Main Analysis

Outcomes. Descriptive statistics are presented in Table 6.2 for all variables across all three time points. As presented in Chapter 5 (Cooley, Burns,

Cumming, under review), the mean scores for course evaluation, instructor evaluation, enjoyment, and transfer intention suggested that, on average, the majority of students had a positive reaction to OAE (Level 1) and an intention to transfer their learning (Level 2). For the follow-up variables, mean scores were also on the positive side of the scale (Max = 7) for behaviour change ($M = 4.84$, $SD = 1.33$; Level 3), perceived academic ($M = 4.61$, $SD = 1.36$) and non-academic benefits ($M = 4.67$, $SD = 1.42$; Level 4), and transfer effort ($M = 4.96$, $SD = 1.12$). Regarding transfer opportunity, participants reported engaging in a variety of groupwork since returning from OAE, including study groups (48.8%), lab/seminar groupwork (55.4%), group coursework/presentations (79.2%), social groups (70.8%), society/voluntary groups (23.1%), and workplace groups (11.3%). All students reported engaging in at least one of the above groupwork activities, suggesting that all students had an opportunity to transfer.

To compare the size of the effect for each of the following outcomes, eta square (η^2) was calculated and interpreted according to Cohen (1988), whereby an η^2 of .01 = small, .06 = moderate, and .14 = large. In addition, 95% confidence intervals (CI) are presented for the post-hoc tests to illustrate the likely range of differences between the means. To reduce the risk of type 1 error, a Bonferroni adjustment was applied to significance tests ($\alpha = .016$; calculated as $.05/\text{the number of analyses used}$; Tabachnick & Fidell, 2013).

Table 6.2
Scales, alpha coefficients, means, and standard deviations for study variables

	Scale	α	Questionnaire time point		
			Pre-Course	Post-course	Follow-up
			<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Course evaluation	1-7			6.11 (1.03)	
Instructor evaluation	1-7			6.37 (0.72)	
Enjoyment	1-7	.91		6.03 (0.87)	
Interpersonal GSQ	1-5	.72	3.66 (0.56)	3.91 (0.56)	3.75 (0.58)
Task GSQ	1-5	.75	3.69 (0.57)	3.63 (0.56)	3.64 (0.59)
GWSE	1-5	.74	3.44 (0.48)	3.65 (0.53)	3.54 (0.51)
ATWG	1-7	.94	5.17 (1.15)	5.75 (1.15)	5.46 (1.06)
Behaviour change	1-7				4.84 (1.33)
Academia benefit	1-7				4.61 (1.36)
Non-academic benefit	1-7				4.67 (1.42)
Transfer intention	1-7	.67		5.12 (0.94)	
Transfer opportunity	0-6				3.01 (1.20)
Transfer effort	1-7	.80			4.96 (1.12)

Note. The Groupwork Skills Questionnaire (GSQ) is from Cumming et al. (2014); the Group Work Self-Efficacy (GWSE) measure is from Riggs, Warka, Babasa, Betancourt, and Hooker (1994); the Attitude Towards Working in Groups (ATWG) measure is from Chapman and Van Auken (2001); α displayed only for variables with 3 or more items.

Groupwork skills. Changes in GSQ scores at pre, post, and follow-up were assessed using repeated measures multivariate analysis of variance (RM MANOVA). A significant multivariate effect was found across time points, $F(4,162) = 10.36, p < .001$ (Figure 6.1). Univariate ANOVAs revealed a significant effect for time in the interpersonal subscale: $F(2,162) = 15.56, p < .001, \eta^2 = .09$, but no significant change in the task subscale: $F(2,162) = 1.05, p = .35, \eta^2 = .01$. Post hoc analysis revealed a significant, large sized increase in interpersonal groupwork skills from pre- to post-course, $t(224) = 6.68, p < .001, \eta^2 = .17, CI = .16$ to $.32$. However, from post-course to follow-up there was a significant, moderate sized decrease, $t(165) = 3.42, p = .001, \eta^2 = .07, CI = -.25$ to $-.06$, and

only a near significant difference remained when comparing pre-course and follow-up scores, $t(167) = 1.92, p = .056, \eta^2 = .02$. CI = -.003 to .17.

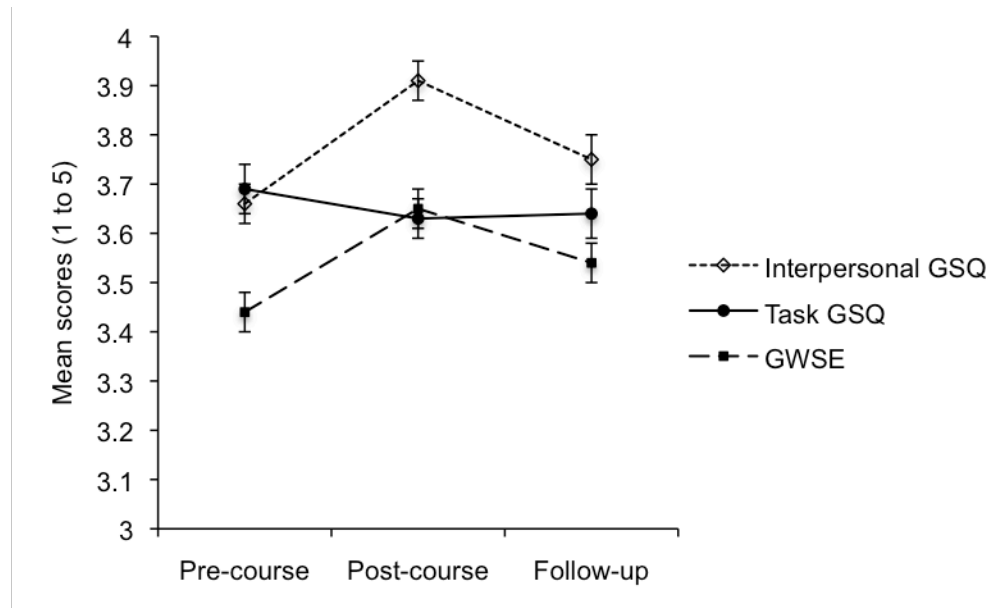


Figure 6.1. Changes in interpersonal and task groupwork skills (GSQ) and groupwork self-efficacy (GWSE) following OAE; the possible range of scores are between 1 and 5. Error bars represent standard error.

Groupwork self-efficacy. A RM ANOVA revealed a significant univariate effect across the 3 time points for GWSE, $F(2,163) = 18.70, p < .001, \eta^2 = .10$ (Figure 1). Post hoc analysis again revealed a significant, large sized increase in groupwork self-efficacy from pre- to post-course, $t(225) = 7.95, p < .001, \eta^2 = .22$, CI = .14 to .29. From post-course to follow-up, there was a moderate, significant decrease, $t(164) = 3.17, p = .002, \eta^2 = .06$, CI = -.19 to -.04; however, scores remained significantly higher than pre-course, $t(167) = 3.11, p = .002, \eta^2 = .06$, CI = .04 to .17.

Attitude towards working in a group. Following the same trend, a significant univariate effect was found across the 3 time points for ATWG, $F(2,159) = 17.17, p < .001, \eta^2 = .10$ (Figure 6.2). There was a significant, large sized increase in ATWG from pre- to post-course, $t(221) = 7.44, p < .001, \eta^2 = .20, CI = .40$ to $.77$, followed by a significant, small to moderately sized decrease from post-course to follow-up, $t(164) = 2.85, p = .005, \eta^2 = .05, CI = -.49$ to $-.09$; however, scores remained significantly higher than pre-course, $t(163) = 2.52, p = .013, \eta^2 = .04, CI = .09$ to $.50$.

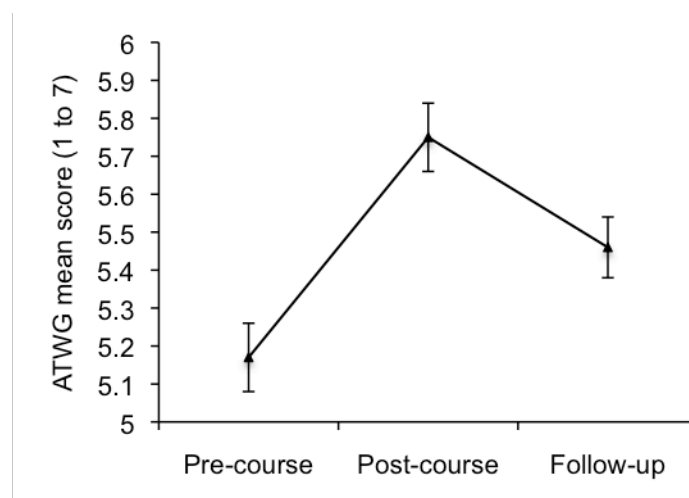


Figure 6.2. Changes in attitudes towards working in a group (ATWG) following OAE; the possible range of scores are between 1 and 7. Error bars represent standard error.

Processes. Hierarchical multiple regression (HMR) was used to examine the processes underpinning the outcomes. Within the HMR models, demographics (age, sex, home vs. international student status, degree course, and English speaking vs. non-English speaking) and pre-course scores (GSQ, GWSE, and ATWG) were controlled for in Step 1. The other variables were entered sequentially in groups according to the levels of the Kirkpatrick model. Separate HMRs were carried out to predict each of three behaviour variables

(Level 3; behaviour change, and follow-up task and interpersonal GSQ) and four result variables (Level 4; academic and non-academic benefits, groupwork grade and overall year grade).

On the first run of the HMR analysis, collinearity diagnostics were examined to ensure that no independent variables contributed to more than 50% of the variance to two or more regression coefficients (Cohen, Cohen, West, & Aiken, 2002). No variables were excluded for these reasons. In addition, to lower the risk of Type 1 and 2 error, adjusted R^2 were used, non-significant control variables were removed from the models to increase power in a subsequent run of the analysis (Cohen et al., 2002), and a Bonferroni adjustment was applied ($\alpha = .0071$).

On occasions when an independent variable appeared to mediate the relationship between another independent variable and the dependent variable (i.e., a significant predictor becomes non-significant after another step is added to the model), mediation was assessed using the PROCESS macro for SPSS introduced by Hayes (2013). This analysis involved 10,000 bootstrap re-sampling to obtain bias corrected 95% confidence intervals (Hayes, 2013).

Factors predicting Behaviour (Level 3). HMR were used to assess the ability of learning variables (post-course GSQ, GWSE, ATWG, and transfer intention) and the follow-up variables (follow-up GWSE, ATWG, transfer effort, and opportunity) to predict variation in key behaviour measures (behaviour change and follow-up interpersonal and task GSQ), whilst controlling for demographics, pre-course measures and reaction variables (Table 6.3).

Table 6.3
Summary of the hierarchical regression analysis when predicting Behaviour (Level 3)

	ΔR^2	<i>B</i>	β	<i>t</i>	95% Confidence Interval	
					Lower bound	Upper bound
<i>Behaviour change</i> ^{Behaviour}						
Step 1	.16**					
Pre-course task GSQ		.54	.23	3.06*	.19	.89
Course evaluation ^{Reaction}		.40	.31	3.98**	.20	.59
Step 2	.12**					
Pre-course task GSQ		.31	.13	1.55	-.08	.70
Course evaluation ^{Reaction}		.09	.07	0.80	-.14	.32
Post-course interpersonal GSQ ^{Learning}		.06	.02	0.28	-.36	.48
Post-course task GSQ ^{Learning}		.28	.12	1.21	-.18	.74
Post-course GWSE ^{Learning}		.04	.01	0.17	-.41	.48
Post-course ATWG ^{Learning}		.24	.20	2.38†	.04	.45
Transfer intention ^{Learning}		.32	.24	2.63†	.08	.56
Step 3	.43**					
Pre-course task GSQ		.08	.03	0.59	-.18	.33
Course evaluation ^{Reaction}		-.07	-.05	-0.91	-.22	.08
Post-course interpersonal GSQ ^{Learning}		-.04	-.02	-0.31	-.32	.23
Post-course task GSQ ^{Learning}		.26	.11	1.72	-.04	.55
Post-course GWSE ^{Learning}		-.23	-.09	-1.38	-.56	.10
Post-course ATWG ^{Learning}		.15	.12	2.14†	.01	.28
Transfer intention ^{Learning}		-.12	-.09	-1.40	-.29	.05
Follow-up GWSE ^{Behaviour}		.19	.07	1.26	-.11	.49
Follow-up ATWG ^{Behaviour}		.09	.07	1.40	-.04	.22
Transfer opportunity ^{Behaviour}		.12	.06	2.04†	.003	.22
Transfer effort ^{Behaviour}		.92	.74	12.46**	.77	1.06
<i>Follow-up interpersonal GSQ</i> ^{Behaviour}						
Step 1	.24**					
Pre-course interpersonal GSQ		.49	.49	6.85**	.35	.64
Step 2	.08†					
Pre-course interpersonal GSQ		.33	.33	3.98**	.17	.50
Post-course interpersonal GSQ ^{Learning}		.32	.30	3.19*	.12	.52
Post-course task GSQ ^{Learning}		.002	.002	0.02	-.18	.18
Post-course GWSE ^{Learning}		.08	.07	0.88	-.10	.27
Post-course ATWG ^{Learning}		-.08	-.15	-1.78	-.16	.01
Transfer intention ^{Learning}		.03	.05	0.60	-.07	.12
Step 3	.10**					
Pre-course interpersonal GSQ		.31	.31	3.84**	.15	.46
Post-course interpersonal GSQ ^{Learning}		.28	.26	2.92*	.09	.47
Post-course task GSQ ^{Learning}		-.02	-.02	-0.18	-.18	.15
Post-course GWSE ^{Learning}		.09	.08	0.85	-.12	.29
Post-course ATWG ^{Learning}		-.11	-.21	-2.53†	-.19	-.02
Transfer intention ^{Learning}		-.06	-.10	-1.12	-.16	.05
Follow-up GWSE ^{Behaviour}		-.04	-.03	-0.41	-.22	.15
Follow-up ATWG ^{Behaviour}		.11	.21	2.85*	.03	.19
Transfer opportunity ^{Behaviour}		.01	.02	0.22	-.06	.08
Transfer effort ^{Behaviour}		.16	.30	3.50**	.07	.24
<i>Follow-up task GSQ</i> ^{Behaviour}						
Step 1	.27**					
Pre-course task GSQ		.39	.39	5.31**	.24	.53
Pre-course GWSE		.31	.26	3.60**	.14	.48

Step 2		.10**					
Pre-course task GSQ		.23	.23	2.79 [†]	.07	.39	
Pre-course GWSE		.24	.20	2.48 [†]	.05	.43	
Post-course interpersonal GSQ	Learning	.13	.12	1.50	-.04	.30	
Post-course task GSQ	Learning	.16	.16	1.72	-.03	.35	
Post-course GWSE	Learning	.05	.04	0.47	-.16	.26	
Post-course ATWG	Learning	-.02	-.04	-0.54	-.10	.06	
Transfer intention	Learning	.13	.21	2.71 ^{††}	.03	.22	
Step 3		.04 [†]					
Pre-course task GSQ		.19	.19	2.41 [†]	.04	.35	
Pre-course GWSE		.15	.12	1.35	-.07	.36	
Post-course interpersonal GSQ	Learning	.09	.09	1.09	-.08	.27	
Post-course task GSQ	Learning	.17	.17	1.83	-.01	.36	
Post-course GWSE	Learning	-.02	-.02	-0.23	-.24	.19	
Post-course ATWG	Learning	-.05	-.10	-1.26	-.14	.03	
Transfer intention	Learning	.08	.14	1.54	-.02	.18	
Follow-up GWSE	Behaviour	.19	.17	1.77	-.02	.41	
Follow-up ATWG	Behaviour	.05	.10	1.29	-.03	.13	
Transfer opportunity	Behaviour	.03	.06	0.78	-.04	.10	
Transfer effort	Behaviour	.06	.12	1.39	-.03	.15	

Note. GSQ = The Groupwork Skills Questionnaire (GSQ) is from Cumming et al. (2014); the Group Work Self-Efficacy (GWSE) measure is from Riggs, Warka, Babasa, Betancourt, and Hooker (1994); the Attitude Towards Working in Groups (ATWG) measure is from Chapman and Van Auken (2001); [†] $p < .05$, ^{††} $p < .01$, * $p < .0071$ (adjusted alpha), ** $p < .001$; superscript after variables denotes the associated level of the Kirkpatrick (1994) model. *B* = unstandardised beta coefficient; β = standardized beta coefficient.

Behaviour change. The overall model was significant, $F(11, 137) = 31.59$, $p < .001$, and accounted for 72% of the variance (adj $R^2 = .70$). The control variables at Step 1 accounted for a significant amount of variance ($R^2 = .16$), with pre-course task GSQ and course evaluation emerging as significant and positive predictors ($\beta = .23$ and $.31$). The addition of the learning variables at Step 2 contributed additional variance, $F_{\text{change}}(5, 141) = 4.58$, $p = .001$, but none of the individual variables emerged as significant predictors. The additional predictors in Step 3 explained the majority of variance in behaviour change, $F_{\text{change}}(4, 137) = 51.74$, $p < .001$, with transfer effort emerging as a significant and positive predictor ($\beta = .74$).

Follow-up interpersonal GSQ. The overall model was significant, $F(10, 138) = 9.59, p < .001$, and accounted for 41% of the variance ($\text{adj } R^2 = .37$). The control variable at Step 1 accounted for the majority of variance ($R^2 = .24$), with pre-course interpersonal GSQ emerging as a significant and positive predictor ($\beta = .49$). The addition of the learning variables at Step 2 offered a near significant contribution, $F_{\text{change}}(5, 142) = 3.00, p = .013$, with post-course interpersonal GSQ emerging as a significant and positive predictor ($\beta = .30$). The additional predictors at Step 3 also explained a significant amount of variance in follow-up interpersonal GSQ, $F_{\text{change}}(4, 138) = 5.58, p < .001$, with follow-up ATWG and transfer effort emerging as significant and positive predictors ($\beta = .21$ and $.30$).

Follow-up task GSQ. The overall model was significant, $F(11, 137) = 8.71, p < .001$, and accounted for 41.2% of the variance ($\text{adj } R^2 = .36$). The control variables at Step 1 accounted for the majority of variance ($R^2 = .27$), with pre-course task GSQ and pre-course GWSE emerging as significant and positive predictors ($\beta = .39$ and $.26$). The addition of the learning variables at Step 2 offered a significant contribution, $F_{\text{change}}(5, 141) = 4.46, p = .001$, with post-course GWSE and transfer intention emerging as near significant positive predictors ($\beta = .20$ and $.21; p = .014$ and $.008$). The additional predictors at Step 3 offered a significant contribution at the traditional $.05$ level, but with the Bonferroni adjustment applied this was interpreted as non-significant, $F_{\text{change}}(4, 137) = 2.53, p = .043$. None of the individual predictors in Step 3 were significant.

Factors predicting Results (Level 4). HMR assessed the ability of behaviour variables (follow-up GSQ, GWSE, and ATWG) and the additional predictor variables (transfer effort and opportunity) to predict variation in key results measures (academic benefit, non-academic benefit, group project grade, and overall year grade), whilst controlling for demographics, pre-course measures, reaction variables, and learning variables (Table 6.4).

Table 6.4
Summary of the hierarchical regression analysis when predicting Results (Level 4)

	ΔR^2	<i>B</i>	β	<i>t</i>	95% Confidence Interval	
					Lower bound	Upper bound
<i>Academic benefit</i> ^{Results}						
Step 1	.17**					
Course evaluation ^{Reaction}		.54	.41	5.39**	.34	.74
Step 2	.17**					
Course evaluation ^{Reaction}		.14	.10	1.21	-.09	.36
Post-course interpersonal GSQ ^{Learning}		.33	.13	1.55	-.09	.74
Post-course task GSQ ^{Learning}		.18	.07	0.85	-.24	.60
Post-course GWSE ^{Learning}		-.06	-.02	-0.26	-.49	.38
Post-course ATWG ^{Learning}		.11	.09	1.08	-.09	.31
Transfer intention ^{Learning}		.52	.38	4.35**	.29	.76
Step 3	.10**					
Course evaluation ^{Reaction}		.09	.07	0.80	-.13	.31
Post-course interpersonal GSQ ^{Learning}		.09	.04	0.42	-.34	.52
Post-course task GSQ ^{Learning}		.19	.08	0.90	-.22	.60
Post-course GWSE ^{Learning}		-.13	-.05	-0.56	-.61	.34
Post-course ATWG ^{Learning}		.07	.06	0.69	-.13	.27
Transfer intention ^{Learning}		.44	.31	3.72**	.20	.67
Follow-up interpersonal GSQ ^{Behaviour}		.21	.09	1.03	-.19	.60
Follow-up task GSQ ^{Behaviour}		.11	.05	0.54	-.29	.51
Follow-up GWSE ^{Behaviour}		.07	.03	0.30	-.38	.52
Follow-up ATWG ^{Behaviour}		.37	.29	3.93**	.18	.55
Step 4	.24**					
Course evaluation ^{Reaction}		-.02	-.02	-0.27	-.19	.15
Post-course interpersonal GSQ ^{Learning}		.22	.09	1.28	-.12	.55
Post-course task GSQ ^{Learning}		.10	.04	0.59	-.22	.41
Post-course GWSE ^{Learning}		-.21	-.08	-1.15	-.58	.15
Post-course ATWG ^{Learning}		.01	.01	0.18	-.14	.17
Transfer intention ^{Learning}		.12	.09	1.25	-.07	.32
Follow-up interpersonal GSQ ^{Behaviour}		-.02	-.01	-0.15	-.33	.28
Follow-up task GSQ ^{Behaviour}		-.07	-.03	-0.41	-.38	.25
Follow-up GWSE ^{Behaviour}		.03	.01	0.18	-.31	.38
Follow-up ATWG ^{Behaviour}		.23	.18	3.13*	.08	.37
Transfer opportunity ^{Behaviour}		.08	.07	1.24	-.05	.20
Transfer effort ^{Behaviour}		.78	.64	9.36**	.62	.95

<i>Non-academic benefit</i> ^{Results}						
Step 1		.12**				
Course evaluation	Reaction		.47	.34	4.38***	.26 .68
Step 2		.15**				
Course evaluation	Reaction		.10	.07	0.76	-.15 .34
Post-course interpersonal GSQ	Learning		.64	.24	2.79*	.19 1.10
Post-course task GSQ	Learning		-.07	-.03	-0.30	-.53 .39
Post-course GWSE	Learning		.19	.08	0.90	-.23 .60
Post-course ATWG	Learning		.03	.02	0.28	-.19 .25
Transfer intention	Learning		.51	.35	3.88**	.25 .77
Step 3		.10**				
Course evaluation	Reaction		.00	.00	0.001	-.24 .24
Post-course interpersonal GSQ	Learning		.36	.14	1.52	-.11 .83
Post-course task GSQ	Learning		-.02	-.01	-0.09	-.47 .43
Post-course GWSE	Learning		-.09	-.03	-0.33	-.61 .43
Post-course ATWG	Learning		.05	.04	0.45	-.17 .27
Transfer intention	Learning		.46	.32	3.56**	.20 .71
Follow-up interpersonal GSQ	Behaviour		.46	.19	2.10 [†]	.03 .90
Follow-up task GSQ	Behaviour		-.01	-.003	-0.04	-.45 .43
Follow-up GWSE	Behaviour		-.32	-.12	-1.29	-.81 .17
Follow-up ATWG	Behaviour		.31	.24	3.03*	.11 .51
Step 4		.30**				
Course evaluation	Reaction		-.13	-.09	-1.45	-.31 .05
Post-course interpersonal GSQ	Learning		.50	.19	2.87*	.16 .85
Post-course task GSQ	Learning		-.13	-.05	-0.77	-.46 .20
Post-course GWSE	Learning		-.17	-.06	-0.90	-.55 .21
Post-course ATWG	Learning		-.01	-.01	-0.13	-.17 .15
Transfer intention	Learning		.08	.06	0.81	-.12 .29
Follow-up interpersonal GSQ	Behaviour		.19	.08	1.18	-.13 .51
Follow-up task GSQ	Behaviour		-.21	-.09	-1.27	-.53 .12
Follow-up GWSE	Behaviour		-.36	-.13	-2.00 [†]	-.72 -.004
Follow-up ATWG	Behaviour		.15	.11	1.97	-.001 .30
Transfer opportunity	Behaviour		.07	.06	1.11	-.06 .20
Transfer effort	Behaviour		.93	.73	10.63**	.75 1.10

Note. [†] $p < .05$, ^{††} $p < .01$, * $p < .0071$ (adjusted alpha), ** $p < .001$; superscript after variables denotes the associated level of the Kirkpatrick (1994) model. B = unstandardised beta coefficient; β = standardized beta coefficient.

Academic benefits. The overall model was significant, $F(12, 136) = 22.70$, $p < .001$, and accounted for 66.7% of the variance ($\text{adj } R^2 = .64$). The control variables at Step 1 accounted for a significant amount of variance ($R^2 = .17$), with course evaluation emerging as a significant and positive predictor ($\beta = .41$). The addition of the learning variables at Step 2 offered a significant contribution, $F_{\text{change}}(5, 142) = 6.99$, $p < .001$, with transfer intention emerging as a significant positive predictor ($\beta = .38$). The behaviour variables at Step 3 offered more

significant contribution, $F_{\text{change}}(4, 138) = 5.86, p < .001$, with follow-up ATWG emerging as a significant and positive predictor ($\beta = .29$). The additional predictors at Step 4 accounted for the majority of variance in academic benefits, $F_{\text{change}}(2, 136) = 48.96, p < .001$, with transfer effort emerging as a significant and positive predictor ($\beta = .64$).

As the effect of course evaluation (entered in Step 1) was no longer significant after transfer intention was added in Step 2, and the effect of transfer intention was no longer significant after transfer effort was added in Step 4, the potential for mediation was explored. Results of the mediation analysis confirmed the mediating role of transfer intention in the relationship between course evaluation and academic benefit ($B = .25$; $CI = .14$ to $.41$; Figure 6.3a). Transfer effort was also confirmed to mediate the relationship between transfer intention and academic benefit ($B = .52$; $CI = .36$ to $.71$; Figure 6.3b).

Non-academic benefits. The overall model was significant, $F(12, 136) = 22.85, p < .001$, and accounted for 66.8% of the variance ($\text{adj } R^2 = .64$). The control variables at Step 1 accounted for a significant amount of variance ($R^2 = .12$), with course evaluation emerging as a significant and positive predictor ($\beta = .34$). The addition of the learning variables at Step 2 offered a significant contribution, $F_{\text{change}}(5, 142) = 5.77, p < .001$, with post-course interpersonal GSQ and transfer intention emerging as significant positive predictors ($\beta = .24$ and $.35$). The behaviour variables at Step 3 offered more significant contribution, $F_{\text{change}}(4, 138) = 5.50, p < .001$, with follow-up ATWG emerging as a significant and positive predictor ($\beta = .24$). The additional predictors at Step 4 accounted for the majority

of variance in non-academic benefits, $F_{\text{change}}(2, 136) = 62.11, p < .001$, with transfer effort emerging as a significant and positive predictor ($\beta = .73$).

Similar to the model for academic benefits, course evaluation (entered in Step 1) was no longer a significant predictor of non-academic benefits when transfer intention was added in Step 2, and transfer intention was no longer a significant predictor when transfer effort was added in Step 4. Mediation analysis conformed that transfer intention mediated the relationship between course evaluation and non-academic benefit ($B = .23$; $CI = .11$ to $.41$; Figure 6.3c), and transfer effort mediated the relationship between transfer intention and non-academic benefit ($B = .57$; $CI = .39$ to $.77$; Figure 6.3d).

Group project grade. The overall model was significant, $F(14, 80) = 4.48, p < .001$, and accounted for 44% of the variance ($\text{adj } R^2 = .34$). The only significant variance predicted was at Step 1 ($R^2 = .37$), in which students who were older ($\beta = .25$), female ($\beta = .50$), and doing degree in mechanical engineering ($\beta = .78$), had higher grades. The addition of the learning variables at Step 2 did not contribute towards the variance explained, $F_{\text{change}}(5, 86) = 0.43, p = .83$, nor did the behaviour variables at Step 3, $F_{\text{change}}(4, 82) = 0.82, p = .52$ or the additional predictor variables at Step 4, $F_{\text{change}}(2, 80) = 1.18, p = .31$.

Overall year grade. The overall model was not significant, $F(15, 108) = 1.66, p = .07$, and neither were any of the individual steps nor individual predictor variables.

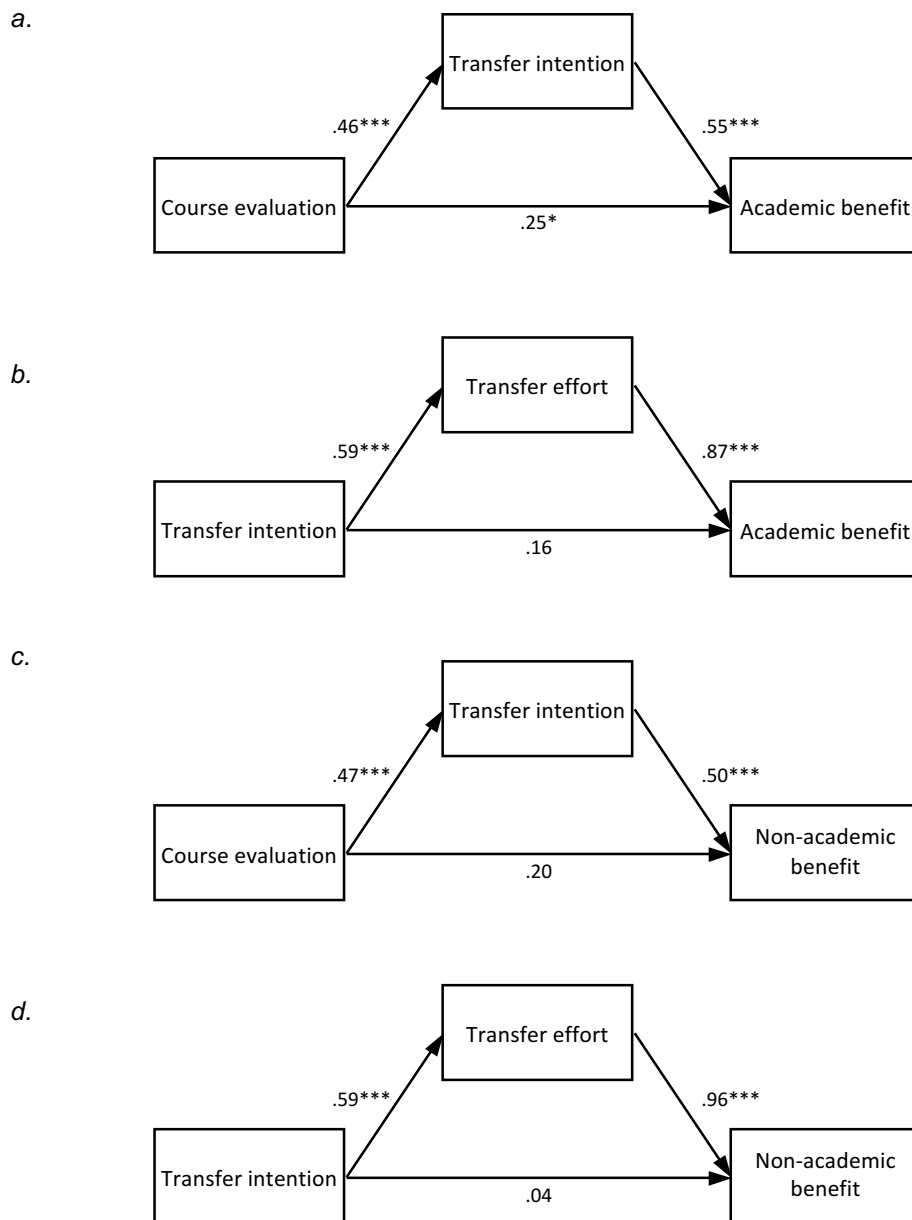


Figure 6.3. The mediating role of (a) transfer intention in the relationship between course evaluation and academic benefit, (b) transfer effort in the relationship between transfer intention and academic benefit, (c) transfer intention in the relationship between course evaluation and non-academic benefit, and (d) transfer effort in the relationship between transfer intention and non-academic benefit. Unstandardised beta weights are presented. * $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The present study demonstrated that OAE participation was associated with lasting effects on Level 3 of the Kirkpatrick Model (Behaviour) in terms of attitudes and self-efficacy towards groupwork and perceived behaviour change. However, there was evidence of a significant drop off from post-course to follow-up, particularly in the use of interpersonal groupwork skills. The majority of students also perceived some academic and non-academic benefits following OAE (Level 4), although regression analysis did not find any of the variables predicted academic group project grades or overall year grades.

In terms of processes, students with more positive attitudes towards groupwork reported more interpersonal groupwork skill use, and greater academic and non-academic benefits at follow-up, whereas those with greater groupwork self-efficacy reported using more task groupwork skills. This finding is in line with our findings in Chapter 5 (Cooley, Burns, & Cumming, under review). Academic and non-academic benefits were also positively predicted by both transfer intention and transfer effort; in turn, transfer effort was predicted by transfer intention, and transfer intention was predicted by course evaluation (Figure 6.3).

Although previous studies have shown OAE to lead to better academic performance compared to control groups (e.g., Gass, 1986), the present study did not support this premise. However, qualitative data in Chapter 4 did show that some students perceived benefits to their academic performance, through improvements to social skills, social support, and integration among peers following OAE (Cooley, Cumming et al., 2015). It is likely that there are other, perhaps stronger, predictors of academic grades at play than those measured in

the present study, such as intelligence, engagement, learning styles, or previous academic performance. Another possibility for the lack of relationships found between the variables measured in the present study and academic groupwork grades could be that group assessments often only credit the resulting piece of work (i.e., the performance outcome) rather than the group processes that led to it (Maiden & Perry, 2011). This may lead students to prioritize the outcome itself, rather than focus on effective group processes. As a result, other determinates of academic performance may override group processes and effective groupwork behaviour may not translate into good marks. This possibility raises the need for assessments to incorporate aspects that explicitly require effective group processes, in order to encourage further groupwork development.

The drop off in the use of interpersonal groupwork skills at follow-up, and the positive influence of attitudes, self-efficacy, and transfer intention, are in line with the predictions of the model for optimal learning and transfer in Chapter 4 and the stages of the transfer process model (Foxon, 1994). These models suggest that transfer requires a conscious intention, effort, and deliberate practice from the learner before skills become embedded and used automatically. Without this, students have a tendency to regress back to their typical groupwork behaviour; in the present study, the level of task and interpersonal groupwork skills reported prior to OAE were stronger predictors of groupwork skill use at follow-up than scores reported after OAE. Further, the findings from Chapters 5 and 6 are also consistent with the theory of planned behaviour, which has shown attitudes and intentions towards a behaviour are more susceptible to change compared to actual behaviour (Ajzen, 2011).

These psychological theories can provide guidance when designing opportunities and interventions to facilitate transfer. For example, positive attitudes can be promoted by helping students see the importance, relevance, and satisfaction behind working well in groups (Ajzen, 1991). The theory of planned behaviour also posits other predictors of intention not included in the current study, but which could be targeted, such as subjective norms and perceived behavioural control (Ajzen, 1991). Further, self-efficacy can be promoted by helping students to internalize their accomplishments during OAE, discover their personal strengths, and understand how to apply learning in future groupwork (Bandura, 1977). Focusing on these areas should then lead to greater motivation to transfer learning and an increased likelihood of behaviour change. The model for optimal learning and transfer (Chapter 4) also emphasises that the positive attitudes and self-efficacy toward groupwork need to be enforced in both the OAE and transfer context. In the present study, although the instructors encouraged transfer during OAE, few students were given formal support after returning to university in how to recognise opportunities and apply the skills they had developed. This could be achieved through prompting, follow-up workshops and activities, continued reflection, and general support and mentoring provided by peers and academic staff (Cooley, Cumming et al., 2015 - Chapter 4).

These theories also support the present findings that improved attitudes and intention do not always translate to a change in behaviour, and suggest that behaviour change is dependent on an individual's ability to generalise learning across contexts (Cooley, Cumming et al., 2015 - Chapter 4), and then self-regulate, overcome habits, and exert control over the behaviour (Ajzen, 2011).

Students may also face interpersonal barriers to transfer, such as a lack of group commitment, group fractionation, task disorganization, and conflict, which could prevent them from applying effective groupwork skills (Paul, Mohiyeddini, Bray, Michie, & Street, 2008). More support is needed to help students overcome these potential barriers to transfer, and turn their intentions to transfer into actual behaviour change. Implementation intention planning is one approach that could be used at the end of a course, which involves considering potential barriers in advance and creating detailed plans for how to overcome them (Gollwitzer, 1999).

The present study also demonstrates the utility of the Kirkpatrick model for both intervention design and evaluation. According to the model, course designers should consider how to ensure that their training is well received, in terms of enjoyment and satisfaction (Level 1); that learning takes place from pre- to post-course (Level 2); that behavioural changes are encouraged after students return from OAE (Level 3); and that key long-term results are identified in advance and promoted at follow-up (Level 4). In terms of evaluation, the present study demonstrates how questions can be aimed at each of the four levels to gain a thorough understanding of the course success. However, this approach would necessitate the development of a selection of questionnaire scales that cover each of the four levels. Chapters 5 and 6 used a varied selection of scales that may be useful in future research. However, previously validated scales were not available for all variables of interest. Whilst many of these scales were supported by extensive psychometric validation, other more bespoke scales and single item measures were created in the present study and require further development and validation. For example, a multidimensional questionnaire is needed to measure

generic aspects of transfer, such as perceived behaviour change, transfer impact, opportunity, intention, and effort. Further, as the present study used self-reported perceptions to evaluate each level of the Kirkpatrick model, future research could include more objective indicators such as behavioural observations both during OAE and when students return to university.

Conclusion

Chapter 6 demonstrates that a 3-day OAE course provides transferable benefits for university students, although there was evidence of a drop-off in outcomes from post-course to follow-up. Transfer was optimised in students who reacted positively to the OAE experience, had a favourable attitude and self-efficacy towards groupwork before, during, and after the experience, and who displayed an intention and effort to transfer what was learnt. Further research is now required to investigate pre- and post-course interventions that target these different areas and facilitate learning and transfer.

GENERAL DISCUSSION

General Discussion

This thesis reviewed the literature exploring the role of OAE in higher education to develop groupwork (Aim 1; Chapter 2). It found evidence for potential benefits of OAE, yet at the same time highlighted a lack of previous studies and systematic evidence. This review set the stage for the following four empirical studies (Chapters 3-6). These assessed both outcomes of OAE (Aim 2) and the processes underpinning these outcomes (Aim 3) across all four levels of the Kirkpatrick model, using novel methods (Aim 4).

In the first of these studies (Chapter 3), a video diary room method was developed to explore students' learning experiences whilst immersed in OAE. This study focused on initial reactions to OAE and learning from pre- to post-course (Levels 1 and 2 of the Kirkpatrick model). In Chapter 4, a more extensive qualitative study assessed all four levels of the Kirkpatrick model. Data was collected using a video diary room, focus groups, and 1-to-1 interviews, which incorporated the perspectives of students, academic staff, OAE instructors, and alumni of OAE who had since entered employment. To triangulate these findings further, Chapters 5 and 6 took a quantitative approach, with Chapter 5 measuring initial reactions and changes to groupwork skills, attitudes, and self-efficacy from pre-to post-course (Levels 1 and 2 of the Kirkpatrick model). Chapter 6 explored the extent to which the outcomes of OAE transferred back to university in terms of changes in behaviour and results (Levels 3 and 4 of the Kirkpatrick model).

Evidence of Outcomes at Level 1 and 2: Reaction and Learning

Evidence in support of Level 1 (Reaction) was found in both the qualitative and quantitative data. During OAE, students responded positively to the activities, environment, and the instructors, which was evident in their descriptions of their affective (i.e., emotional reactions such as enjoyment and excitement) and instrumental reactions (i.e., utility judgements such as perceived learning and course relevance). At the end of OAE, students reported high scores for enjoyment, instructor evaluation, and overall course evaluation. These positive reactions remained strong over time, with former students often describing OAE as their favourite and most vivid memory of higher education. These findings support the studies identified in the review in Chapter 2, which measured positive reactions shortly after OAE (e.g., Elkin, 1991; Prince & Dunne, 1998), as well as a longitudinal study by Gass, Garvey, and Sugerman (2003), which found positive reactions to remain years later.

These Level 1 findings alone may justify the inclusion of OAE in higher education, due to its effect on students' satisfaction with their degree course and the wider implications this has on student recruitment and retention (Elliot & Healy, 2001; Schreiner, 2009). Although retention was not measured in the present study, a previous study has found degree programmes that include OAE to have lower attrition rates than those without (Gass, 1990). The positive reactions measured also have theoretical implications, whereby the fun and engaging nature of OAE is likely to stimulate a deeper engagement, increased effort, curiosity, well-being, and social development (Deci & Ryan, 1985; Ryan & Deci, 2000; Yerkes-Dodson, 1908), which may explain the range of learning outcomes demonstrated.

With regard to the Level 2 learning outcomes, the qualitative data in Studies 3 and 4 revealed that students felt they had improved interpersonal groupwork skills (e.g., being better able to express ideas, communicate in a supportive manner, foster team spirit, cooperate, and resolve conflict), task groupwork skills (e.g., being better able to manage a group, allocate group roles, bring out the best in people, and reflect on group performance), knowledge of groupwork (e.g., personal strengths and weaknesses and what constitutes effective task and interpersonal group behaviour), and attitude towards groupwork (e.g., a new appreciation of groupwork, realising a need to change certain behaviours, and becoming more confident in group situations). In addition, students also reported developing better relationships between staff and their peers, and ended OAE feeling more mentally prepared and supported in future challenges. Some of these outcomes were quantified in Chapter 5, with significant improvements found in interpersonal, but not task, groupwork skills, attitudes towards groupwork, and groupwork self-efficacy. Scores in these areas were already high at baseline, and so these increases were small in absolute terms, but meaningful with regard to their effect sizes. Some of the learning outcomes demonstrated in the present thesis have been found previously, as outlined in Chapter 2 (e.g., Elkin, 1990; Prince & Dunne, 1998; Juriza et al., 2011; Rushmer, 1997; Mazany et al., 1997; Ferguson et al., 2001). However, the present study confirms these findings with more robust evidence, such as by using more valid and reliable questionnaires based on theoretical constructs, mixed methods, and appropriate analysis of both quantitative and qualitative data.

The lack of improvement measured in task groupwork skills was unexpected, especially as the qualitative themes in Chapters 3 and 4 suggested a number of task skills were developed in students. However, as discussed in Chapter 5, it is possible that students became more aware during OAE of what constitutes effective task groupwork skills, due to not having received prior training. As a result, scores reported at the end of OAE may have been made through a more critical lens than those before, which has been observed in previous life-skill interventions (Holland, 2010; Woodcock, Duda, Cumming, Sharp, & Holland, 2012). Previous research has also indicated that students typically use more interpersonal groupwork behaviours during higher education compared to task groupwork behaviours (Cumming et al., 2014), which may explain why this effect was not observed in the interpersonal scale. Further research is required to tease out whether or not the lack of improvement in task groupwork skills was in fact down to measurement issues and not simply due to a 3-day OAE course being ineffective in developing task groupwork behaviour. This research could include observational measures taken before, during, and after OAE, which are then compared to the self-reported measures of groupwork skills to see if a discrepancy exists. Alternatively, the self-reported measures could include retrospective assessments of groupwork skills, which are completed after students have finished OAE, to see if these differ from their prior self-assessments.

Previous critiques of OAE have however, suggested that compared to an individual's prior experiences, the relatively short duration of an OAE course may be insufficient to result in changes to groupwork behaviour (Brookes, 2003). In response to this suggestion, the Level 2 evidence within the present thesis

indicates even if not all students experience a change in their behaviour during OAE, the majority end OAE in a favourable position for future behaviour change (i.e., the experience may act as a turning point due to changes in perspectives). That is, a short OAE experience was long enough to improve students' awareness of strengths and weaknesses, create a desire to change certain behaviours, establish a greater support network between academic staff and students, and improve attitudes, self-efficacy, and knowledge towards groupwork. These important outcomes support the theory of transformative learning (Mezirow, 1991), whereby students' previous assumptions of groupwork were often challenged during OAE, resulting in the emergence of new feelings and perspectives. These new perspectives open up the potential for OAE to act as a 'turning point' in the student experience (Gotlib & Wheaton, 1997; Furman & Sibthorp, 2012). This theory proposes that, due to these short-term outcomes, students may return to university on a different trajectory through their subsequent groupwork experiences, which they may not have taken without having experienced OAE. These improved trajectories may help to reduce the negative groupwork experiences sometimes reported during academic groupwork within higher education (Burdett, 2003; Hillyard et al., 2010; Pfaff & Huddleston, 2003).

Evidence of Outcomes at Level 3 and 4: Behaviour and Results

Evidence that learning during OAE transferred to university was found in the present thesis with regard to both cognitive transfer (i.e., skills being retained and applied during future academic groupwork) and situative transfer (i.e., new attitudes and awareness of groupwork changing the way students interact with

their environment back on campus). In Chapter 4, the student, staff, and alumni perspectives all supported evidence of such transfer. Whereby the themes developed across these perspectives revealed more effective group behaviour, and peer groups became more open, engaging, and supportive of each other. Students also maintained a more positive attitude towards groupwork, and were more willing to cooperate with greater confidence and assertiveness. As a result of these behavioural changes (Level 3), the themes within Chapter 4 also revealed degree cohorts to have become more integrated, and some students felt that the skills, knowledge, and attitudes developed during OAE, together with the increased social support, had contributed towards their perceptions of academic success in their degree (Level 4). Further down the line, the alumni participants provided accounts of OAE benefitting their employment after graduating, in terms of enabling them to demonstrate their awareness of groupwork skills, which helped in interviews, group assessment days, and in their transition into workplace teams (Level 4). This evidence in favour of transfer supports previous qualitative studies in higher education, which have provided some suggestion that OAE improves academic groupwork (e.g., Elkin, 1990; Prince & Dunne, 1998; Rushmer, 1997).

However, whilst Chapter 4 provided numerous accounts of transfer success, it also identified occurrences of transfer failure, where the occasional student reported that their development ended upon departure of the OAE centre. The quantitative study in Chapter 6 also suggested that not all students experienced transfer. That is, the descriptive statistics indicated that students experienced some degree of behaviour change and both academic and non-academic benefits following OAE. However, scores for interpersonal groupwork

skills, attitudes, and self-efficacy, all decreased significantly at follow-up, although remained significantly higher than baseline. In addition, none of the outcomes measured had any relationship with academic grades.

This drop-off identified in Chapter 6 was in contrast to previous quantitative studies, which found increases in skills and attitudes to remain elevated, or even further increased in follow-up measures (Harun & Salamuddin, 2010; Odello, Hill, & Gomez, 2008; Vlamis, Bell, & Gass, 2011). Meta-analyses have also provided contrasting evidence, with Hattie and colleagues (1997) showing effect sizes to increase in follow-up measures taken after OAE, and Gillis and Speelman (2008) finding the opposite. This difference between the two meta-analyses could be due to differences in samples and types of OAE, with Hattie and Colleagues including all types of OAE (e.g., outdoor centred, expedition, and sailing) and Gillis and Speelman focussing on ropes courses. As a result, Gillis and Speelman also had a smaller sample size of 12 studies that included a follow-up measure, compared to the 27 studies analysed by Hattie and colleagues.

Taking into account these different findings, the use of OAE in higher education should be encouraged as the present thesis demonstrates the potential for providing a wide range of transferable benefits for students. Aside from student satisfaction, transferrable groupwork skill development, student integration, and employability skills feature repeatedly as crucial areas of development in higher education (Bennett, 2002; Prichard et al., 2006; Roberts, 2009; Stevens & Campion, 1994). Therefore, the potential of OAE to promote all these areas at once and develop the 'whole student' makes it a highly valued aspect of higher education.

However, as demonstrated in the present thesis and in the mixed findings from previous studies, transfer following OAE cannot be assumed to occur automatically. Instead, successful learning and transfer is influenced by a series of contextual and personal characteristics, which may explain the mixed findings between studies. However, as previous studies typically favour outcome measures rather than measuring processes, these particular characteristics are relatively unknown and have been referred to as the 'black box' within OAE literature (Allison, 2014; Ewert & Sibthorp, 2014; Sibthorp, Furman, Paisley, Gookin, & Schumann, 2011; Cooley, Burns et al, 2015). As a result, one of the most novel contributions of the present thesis is its focus on the processes behind learning and transfer. In relation to the third aim of the thesis, all four studies investigated these processes and in doing so, provide practical recommendations for how learning and transfer can be optimised when incorporating OAE into higher education, as outlined in the following section.

Processes

In seeking to understand the processes behind what enabled some students to experience OAE at a deeper level than others, the process themes identified in the present thesis were used to construct, and test, the model for optimal learning and transfer (MOLT; Cooley, Cumming et al., 2015). Within the model for optimal learning and transfer (Figure 4.1), reaction and learning (Level 1 and 2) were influenced by the *preparation* before OAE, a selection of *learner characteristics*, and key elements of the *learning context*. Behaviour and results (Levels 3 and 4) were in turn influenced by key elements of the *transfer context* and another set of

learner characteristics. The following sections refer to each of these areas in turn along with the theoretical and practical implications they have.

The processes behind Reaction and Learning.

Preparation. Based on the qualitative analysis in Chapters 3 and 4, the preparation before OAE was vital in promoting a positive reaction to OAE and successful learning. Firstly, they revealed the importance of tailoring courses to the group of students taking part. For example, it was apparent that different degree programmes had different learning objectives (e.g., some were predominantly groupwork skills focused and others were more focused towards promoting integration among new student groups). There was also evidence of different experience levels between student groups, which affected how challenging and novel they found OAE. It was therefore recommended in the model for optimal learning and transfer (Chapter 4) that a *needs analysis* is conducted prior to OAE, with the aim of tailoring the activities, course objectives (e.g., team building for academic groupwork, student integration, general groupwork skills, or internationalisation), and level of challenge to the group taking part. As identified by the instructor perspective in Chapter 4, if the instructors are aware of the groups' needs (e.g., learning objectives and level of experience), they will be better able to adapt their instructing style to suit and ensure students are optimally challenged.

Chapter 4 also identified that *group formation* may affect the learning outcomes of OAE. Organisers need to be conscious of how students are distributed when a larger cohort is split across multiple OAE courses, and also the

formation of smaller groups within each of these iterations. For example, it was observed during this thesis that cohorts who were allowed to self-select their groups often divided into groups of likeminded individuals who often shared national and ethnic identities, backgrounds, working styles, interests, and/or capabilities. This tendency has been previously demonstrated in studies in higher education (e.g., Halualani, Chitgopekar, Morrison, & Dodge, 2004; Hills & Thom, 2005; Pritchard & Skinner, 2002). However, the themes within Chapters 3 and 4 revealed that more diverse groups led to greater improvements to intercultural groupwork skills, knowledge, and attitudes. These benefits resulting from diverse groups have also been previously observed in higher education (Summers & Volet, 2008) and may be more likely to occur when students are randomly allocated into diverse groups (Burns, Cumming, Cooley, & Holland, 2012; Pritchard & Skinner, 2002). For degree courses that use OAE for team building purposes, where the aim is to prepare student groups for working on an academic project on their return from OAE, it may be beneficial to remain in those groups during OAE. However, in courses that aim to develop generic groupwork skills that can be transferred to different groups, or when the aim is to orientate students into their degree cohort, it may be more effective to randomly allocate students to groups and change those groups throughout OAE.

A final aspect of preparation involved *priming students* to ensure they approach OAE with a positive frame of mind. The diary room in Chapters 3 and 4 revealed students to arrive at OAE with different levels of awareness of why they were attending, varied preferences and attitudes towards groupwork, and different intentions regarding what they hoped to get out of the experience. When relating

this finding to self-determination theory (Deci & Ryan, 1985), it appears students' motivations for attending ranged from being intrinsic to externally regulated. Those who appeared intrinsically motivated spoke of enjoying the opportunity and having an interest in the course objectives, whereas those at the externally motivated end of the spectrum spoke of attending simply to comply with their school's wishes. Although enjoyment did appear to be a precursor to behaviour change, the literature around self-determination theory demonstrates how behaviour can also change by more extrinsic motivators (i.e., integrated, identified, and introjected regulators like awareness, personal importance, and self-control; for a review see Ryan & Deci, 2000).

In Chapter 4, these differences in motivation to attend were felt to impact reaction and learning, with those students who were more sold on the idea of OAE arriving with more enthusiasm, which resulted in more engagement, self-reflection, behaviour change, and realisation of new learning. Further to this, the quantitative study in Chapter 5 revealed that learning outcomes and intention to transfer these outcomes were positively predicted by baseline groupwork skills, self-efficacy, and attitudes towards groupwork. Theoretically, these findings are aligned with the theory of planned behaviour (Ajzen, 1991), which proposes that the successful development of a given behaviour is influenced by a person's attitude, self-efficacy, and intentions towards developing the behaviour. These belief systems can also be likened to Dweck's theory of the growth mindset (Dweck, 2006). Dweck and colleagues have found that students who believe that their intellectual qualities, abilities, and personality can be developed (i.e., possess what is referred to as a 'growth mindset' or an 'incremental theory') have greater resilience when

faced with academic and social challenges, smoother transitions through academia, and greater completion rates, compared to those students who believe qualities are fixed and unchangeable (i.e., possess a 'fixed mindset' or an 'entity theory') (Yeager & Dweck, 2012).

The priming prior to OAE should involve giving students clear explanations for why they are attending the course, the expected outcomes, and addressing any concerns students may have (e.g., not being able to swim, sleeping arrangements, dietary needs etc.). Educational information about groupwork and the benefits of OAE could also be delivered in the form of a video, workshop, or briefing, to instil a greater belief in the importance of groupwork and increase students' awareness of their existing groupwork abilities they could build upon. Based on the theory of planned behaviour (Ajzen, 1991) and self-determination theory (Deci & Ryan, 1985), the aim of this priming should be to encourage positive attitudes, self-efficacy, intrinsic motivation to attend, and intentions towards developing groupwork.

Manipulating these belief systems may promote behaviour change during OAE (Ajzen, 1991). However, limitations within the theory of planned behaviour would suggest that whilst the theory is useful for predicting intentions and behaviour, these predictions are more superior in self-reported measures than for observed measures (Armitage & Conner, 2001). In addition, intentions often only predict a small degree of variance in behaviour and so there are other factors involved, especially when there is a time lag between measuring intention, its predictors, and the actual behaviour taking place (Sutton, 1998). Despite these considerations, it was apparent from this thesis that students who arrive at OAE

with more positive attitudes, self-efficacy, and intentions towards developing groupwork may be more likely to display the other beneficial learning characteristics observed in this thesis.

Learner characteristics. The key learner characteristics are encompassed within the second element of the model for optimal learning and transfer (Chapter 4). Here, data from all four perspectives revealed that reaction and learning was greater in students who *recognised opportunity* (i.e., were aware of what, and how, learning could occur during an experience, and how learning may provide future benefits), were physically and psychologically *engaged* (i.e., willing to embrace challenge, push themselves, be persistent, and make an effort to be an active participant), and who were *open to new experiences* (i.e., curious, adventurous, and able to find personal meaning in new experiences).

As well as being affected by preparation (see above), it is possible that the students' personality types and learning approaches may also affect these learner characteristics. For example, being open-minded and conscientious are considered to be two of the five core personality traits (McCrae & Costa, 1987; McCrae & Terracciano, et al., 2005), which may relate to the learner characteristics of *openness to new experiences* and *engagement*. In addition, students learning approach (i.e., deep, surface, or strategic) may influence their motivation to seek out understanding and new knowledge in a broader range of subject areas to what they are specialising in during university (Marton & Saljo, 1976; Entwistle, Tait, & McCune, 2000), which may relate to the concept of *recognising opportunity*. Whilst these characteristics were not empirically

measured in the present thesis, the qualitative data in Chapter 4 supports their benefit.

Academic staff and instructors therefore need to be aware that students who present with these different learning characteristics may need different levels of prompting and support to yield the same benefits from OAE. For example, Chapters 3 and 4 showed that instructor support was highly valued by students in helping them to discover meaning behind activities and how learning is applicable to future groupwork. Although these learning characteristics may differ between students in whether they are 'traits' or 'states' (see Chen, Gully, Whiteman, Kilcullen, 2000) as well as whether students have a growth or fixed mindset (Dweck, 2006), it is possible that, along with the support received from peers, academic staff, and instructors, the unique elements of the OAE learning context may also encourage development of these beneficial learner characteristics.

Learning context. The third, and largest set of processes, describe the key characteristics of the learning context found within OAE to facilitate learning. Chapter 3 first revealed how learning occurred as a result of the novel and challenging environment and the sense of risk and natural consequences, which encouraged students to get involved, work together, and draw from a range of coping methods (e.g., leadership, communication, role allocation, trust, humour, previous knowledge, emotional control, improvisation, reflection, and planning).

In Chapter 4, these environmental characteristics were categorised into seven key elements: *removal from norms; learning through experience; progressive challenges; having a social element; support; guided reflection; and*

enjoyment. These environmental characteristics firstly have implications for the location of the learning experience. Researchers have previously debated the necessity of OAE taking place in a remote outdoor environment, with some suggesting that indoor adventure training (IAT) can offer the same benefits at lower cost in and around the classroom (DuFrene, Sharbrough, Clipson, & McCall, 1999; Broderick & Pearce, 2001). However, data in the present thesis would argue against this proposition, whereby important characteristics of OAE may be lost if students took part in a local environment that is familiar to them, where their home comforts are close by.

Instead, the themes within Chapter 4 demonstrated that taking students away from campus into a remote, novel environment, where they had to live and work together, contributed to the challenge, reduced distraction from day-to-day norms, disruption of previous hierarchies and segregations, removal from comfort zones, increased social proximity, and made for more memorable and enjoyable learning. Due to the outcomes of OAE often being attributed to these elements of the learning context, Chapter 4 supports the notion that learning was benefitted by high arousal and being in the 'stretch zone', thus offering support from some of the arousal related theories outlined at the beginning of the thesis (Figure 1.1; e.g., Prouty et al., 2007; and the Yerkes & Dodson law, 1908). Indeed, the students who benefitted most from OAE appeared to be those who were most challenged by the experience. For example, in Chapter 4, when probing a participant on why they felt they had developed group problem solving skills, they would typically respond by highlighting the activities that most challenged their ability to problem solve. The students who were very familiar with the activities and environment

were often less open to new ideas and new learning, and therefore the experience appeared less transformative. This finding also supports transformative learning theory (Mezirow, 1991), in suggesting that learning is facilitated through novel experiences that challenge previously held assumptions and encourage new perspectives. It also reinforces the need to tailor courses to ensure as many students as possible reach their optimal level of arousal and enter their stretch zones, whilst being mindful that doing so does not lead to some individuals becoming panicked and debilitated.

In support of experiential learning (Dewey, 1938) and the experiential learning cycle (Kolb, 1984), the four perspectives in Chapter 4 also highlighted the benefits of experimenting with and mastering new behaviours, in an environment where students' receive immediate feedback from instructors, peers, the natural environment, and time spend in reflection. The guided reflection led by the instructors was most effective when it was focused not only on what was being learnt, but also on how learning could be applied outside of the learning context. This focus in the reflection may help to strengthen the link between 'abstract conceptualisation' and 'active experimentation' in the experiential learning cycle (Figure 1.2), which could also be likened to strengthening the intention - behaviour gap within the theory of planned behaviour (Ajzen, 1991).

The processes behind Behaviour and Results.

Learner characteristics. After OAE had finished, another set of learner characteristics was identified in Chapter 4 for students most likely to transfer their learning back to university. These were students who had an ability to *generalise*

learning across contexts (i.e., identify similarities between OAE and the transfer environment), partook in *thoughtful and effortful practice* (i.e., made a conscious effort to remember learning and practice using it afterwards), and who continued *self-reflecting* (i.e., reflecting back on what was learnt and comparing it with present experiences). In identifying these beneficial learner characteristics, the ability to transfer can be thought of as a skill, which some students may display a natural tendency towards, and others who require more external support in the transfer process. This idea of transfer being a skill has been previously discussed within the context of educational psychology,

Because the skills emphasized in career preparation often cannot be used in a real work setting exactly as they were learned in a school setting, persons of all ages need skills to help them transfer what they know and modify it to fit the new situation. What are these special kinds of skills? They are ones that help people move through life “in the fast lane,” enabling them to deal with the many changes from one context to another ... Such skills have been called “transfer skills” ... We are expected to have them, even though we are rarely taught or trained in them (Kirby, 1979, p 1).

Individual differences in this transfer skill could be related to students' learning approaches, as well as their ability to self-regulate learning. According to self-regulation theory (Zimmerman & Schunk, 2001) and the theory of deep, surface, and strategic learning approaches (Entwistle et al., 2000; Marton & Saljo, 1976), students with a deeper and more strategic learning approach and the ability to self-regulate may be more likely to absorb knowledge, monitor their learning, and look for ways to apply it in the future (Murphy & Tyler, 2005; Sibthorp et al., 2015). A recent study in OAE suggests that OAE may be a potential vehicle for fostering this type of self-regulation (Sibthorp et al., 2015), which opens up a possibility for OAE being used a tool to develop the ‘transfer skill’ in students.

In support of Foxon's (1994) stages of transfer model, these learner characteristics also demonstrate that conscious effort, intention, and deliberate practice are needed in the initial stages of transfer, before transfer becomes automatic. In Chapter 6, transfer intention and effort frequently predicted transfer. Some evidence was also found to suggest that without this effort, behaviour is at risk of regressing back to how it was prior to OAE, as demonstrated by the pre-course scores occasionally being stronger predictors of follow-up behaviour than post-course scores. These findings highlight the importance of the transfer context being designed in a way that prevents regression and nurtures transfer. One approach could be to ensure academic staff acknowledge and positively reinforce instances of transfer success.

Transfer context. Along with having the desirable learner characteristics, the transfer context was found to have a considerable influence on transfer success. Chapter 4 outlined the components of the transfer context that most facilitated transfer. These were the provision of *transfer opportunity* for students to apply and further develop what they had learned, such as providing academic groupwork opportunities; *challenging students* to use the skills learned, such as by ensuring positive group behaviours are required and acknowledged within academic groupwork; providing *informal prompting* to students to help them recognise opportunities to transfer and to stimulate reflection; organising a *follow-up activity* to reinforce learning; and encouraging students to *support* each other in continued practice. This need for continued practice as a way of embedding and further developing the learning that OAE may have started is in concordance with

the experiential learning cycle (Kolb, 1984) and turning point theory (Gotlib & Wheaton, 1997). That is, OAE may have provided the initial stimulus, or turning point, for groupwork development, but further practice and application is required after the experience has finished before lasting effects occur.

Overall, the model for optimal learning and transfer (Chapter 4) is an empirically supported model that provides a series of practical recommendations for supporting all four levels of the Kirkpatrick model. As suggested in the model for optimal learning and transfer, the processes underpinning outcomes at the reaction and learning levels may subsequently facilitate outcomes at the behaviour and results levels. The present thesis provides qualitative and quantitative evidence that suggest positive relationships do exist between each of the levels, whereby a student who reacts more positively to an experience and has a greater perception of learning, is more likely to experience behaviour change and results. However, it is also important to note that Chapters 5 and 6 did not detect correlations across all variables at each of the levels, which suggests that the levels of the Kirkpatrick model can occur in isolation to one another; for example, a student who fails to detect learning immediately after OAE, may still achieve transferrable benefits should they receive appropriate support in the transfer context.

Advances in Methods

Due to the practical challenges of evaluation in a real world context (Gray, 2014) and the difficulty in measuring the theoretically complex concept of transfer (Brown, 2010), the fourth and final aim of this thesis was to progress existing

methods of training evaluation. In response to this aim, a number of methods were advanced in the present thesis. The first of these was the video diary room in Chapter 3 (Cooley, Holland et al., 2014), which yielded in-depth responses and rich themes as a result of participants' willingness to engage with the method (Cooley, Holland et al., 2014; Cooley, Cumming et al., 2015). The approach was informal, yet personal, and the absence of a researcher gave control to participants in how much time they spent talking and reflecting on their answers. This absence of the researcher may also have contributed towards the open and honest responses received from participants, possibly due to a reduced fear of judgement, in a way that would typically require extensive rapport building between researcher and participant in a more conventional 1-to-1 interview. The speed and efficiency of the semi-structured video diary room allowed large numbers of entries to be collected quickly and with minimal disruption to participants immersed in their experience.

Chapters 3 and 4 not only demonstrated the benefits of a video diary room, but also advanced the method by adding a semi-structured component by using a series of open-ended questions to guide the broad topics discussed. This helped to overcome previous limitations identified by two studies that used a more unstructured form of video diary room (Buchwald et al., 2009; Noyes, 2004). Since developing the semi-structured video diary room in Chapter 3, the method has been used to address a number of other research areas. These areas include the impact of OAE on internationalisation in higher education (Burns, Cumming, Cooley, & Holland, 2012; Cooley, Cumming, Holland, & Burns, 2013), transferable skill development in students who take part in extra-curricular activity (Novakovic,

2014), elite athletes' use of mental imagery prior to a sporting event (Newell, Williams, & Cumming, in prep), youth development during tall ship sailing expeditions (Gunnell, Hurst, & Cooley, 2014), and mental skills training in homeless youth (Cooley, Holland, Quinton, Burns, & Cumming, 2014; Cumming, Cooley, Holland, Quinton, & Burns, 2015). Collectively, these studies demonstrate that the semi-structured video diary room is effective in different populations and contexts, and can be used in cross-sectional, longitudinal, case study, and mixed-method designs.

In addition, this thesis also provides further validation of the groupwork skills questionnaire (GSQ) as well as developing new measurement tools. The GSQ was previously developed by our research group (i.e., led by the first author and assisted by Cooley) to measure task and interpersonal groupwork skill use in higher education, and previously underwent a series of psychometric tests for validity and reliability (Cumming, Woodcock, Cooley, Holland, & Burns, 2014). In Chapter 5, a confirmatory factor analyses revealed an acceptable model fit across most of the psychometric indices when, for the first time, the GSQ was used to assess change before and after an intervention. This finding contributes to the evidence base for the validity of the GSQ, and demonstrates that the GSQ can also be contextualised to a specific situation by changing the general stem from "When working in groups I tend to..." to a specific stem such as "When working in groups during OAE, I..." (Appendix 3.1). The GSQ is therefore recommended for assessing groupwork development during OAE. In addition to the GSQ, a 4-item scale for measuring transfer intention following a course was developed and received preliminary validation in Chapter 5 (Appendix 3.1). Other novel items

were also designed in Chapter 6 to measure perceived behaviour change, perceived benefits, transfer opportunity, and transfer effort, which may be useful in future research and course evaluations (Appendix 4.1).

A final methodological innovation in the present thesis was the approach to using the Kirkpatrick (1994) model. The Kirkpatrick model had previously been used only to measure outcomes at each of the four levels (i.e., summative measures) and not the processes behind these outcomes (i.e., formative measures; Bates, 2004). In response to criticism of the model being an ‘outcome only’ approach to assessment, Kirkpatrick and Kirkpatrick (2015) adapted the original model and released the ‘new world Kirkpatrick model’, which includes a recommendation for assessing the processes (termed ‘required drivers’ in the new world model), which reinforce, encourage, and reward transfer behaviour in the transfer environment. In the present thesis however, the inclusion of processes is taken a step further, whereby process measures are included at all four levels of the model, not just with regard to behaviour (Level 3).

In addition to measuring outcomes and processes, the present study also demonstrates how the Kirkpatrick model can be applied using mixed-methods. Traditionally the levels of the Kirkpatrick model, particularly Levels 3 and 4, are assessed through objective and quantifiable indicators (Alliger et al., 1998; Praslova, 2010). These objective measures may be achievable in organisational contexts where transfer involves clear and specific behavioural outcomes such as reduced error and job performance, with Level 4 measures such as cost savings, customer satisfaction, and profitability (Alliger et al., 1998). However, in educational studies, transfer is often less specific and more difficult to quantify

(Praslova, 2010), such as the transfer of group behaviour and the resulting impact on learning experiences in the present thesis. In this case, qualitative approaches were found to be invaluable in uncovering nuances that would be difficult to predict and quantify using questionnaire scales. In Chapter 4, the novel approach to applying qualitative methods across all four-levels of the Kirkpatrick model showed, for the first time, how the Kirkpatrick model can be applied using qualitative methods alone.

Over and above this more novel approach to using qualitative methods for each level of the Kirkpatrick model, the thesis as a whole applied both quantitative and qualitative methods to increase the reliability of findings. The epistemological and methodological stance taken has been aligned with a pragmatic and action research approach. For example, multiple perspectives were obtained from different stakeholders to triangulate findings and increase trustworthiness (i.e., when all methods/perspectives concur, we can be more confident in the knowledge discovered). These stakeholders were involved throughout data collection and analysis, and findings were fed back during instructor and staff workshops, which enabled more immediate changes to provision and provided another way of cross checking and validating the data (i.e., respondent/member checking; Lincoln & Guba, 1985). Overall, the present thesis demonstrates a novel, systematic, and effective approach in using the Kirkpatrick model to assess outcomes and processes using mixed methods.

Limitations

The first limitation to highlight is with regard to the review in Chapter 2. Although elements of this review adhered to that of a systematic review, such as having clear aims, inclusion criteria, outlining keyword search terms, and conducting a rigorous literature search of different bibliographic databases, there were also elements of the review that could have been more systematic and transparent. For example, a clear PICO statement was missing, as well as a flow chart outlining how many studies were extracted from each database. Studies could also have been appraised using a recognised quality assessment scale (e.g., the Newcastle-Ottawa Scale), with a second assessor, and data could have been extracted using a pre-determined data extraction form (Kitchenham, 2004; Joanna Briggs Institute, 2013). Such approaches would have improved the transparency and reproducibility of the review.

With regard to the studies that followed Chapter 2, a recent review by Scrutton and Beames (2015) critiqued the methods used by studies in OAE and identified a series of common strengths and weaknesses. Based on this review, the methodological strengths of the present thesis were the sample size, which was larger than what is typically considered adequate for quantitative studies (i.e., >100; Scrutton & Beames, 2015); the use of established, or tailor-made, questionnaires that are tested and demonstrated to be valid and reliable; the inclusion of baseline measures; and adequate and transparent reporting of data and statistical analyses.

However, the review did also identify some limitations that could be directed at the present thesis. For example, the studies in this thesis did not have a control

group who did not attend OAE. However, Scrutton and Beames (2015) point out that where control groups are impractical or impossible, studies are still of value and a lack of control should not be deemed a limitation. Indeed, the applied nature of the present thesis made a control group impractical; instead, validity was increased by triangulating data with multiple perspectives, mixed methods, and the use of second coders and peer debriefing during the analysis of the qualitative data (Hastie & Hay, 2012). As a result, the outcome of this rigorous investigation of OAE is in line with advice from Anderson and colleagues (2002), who said “the aim of evaluation in practice is not to generate knowledge by proving cause and effect between the support [intervention] and the outcome, but to provide comprehensive information to document the degree of effectiveness and facilitate improvement” (p.437).

Another limitation was the use of a convenience sample of participants who happened to be taking part in OAE at the time of the studies and who were willing to participate. This form of sampling can result in sampling bias and jeopardise external validity (Brandl-Bredenbeck & Kämpfe, 2012; Creswell, 2009). For example, students who agreed to take part may have been those who reacted more favourably towards OAE, and the effects found in the degree subjects included (i.e., mainly engineering and business students) may not be the same in other student groups who attend OAE. However, these risks were reduced by the compulsory nature of many of the OAE courses, the high percentage of students who agreed to participate in the research (79%), and the relatively low dropout rate from pre-to post-course in Chapter 5 (4%). The dropout was unfortunately higher for the follow-up measure in Chapter 6 (29%); however, it should be noted

that this was because not all students were present in the lectures where follow-up questionnaires were administered, rather than selective decisions by students not to participate in the follow-up. The risk of sampling bias was also reduced in the qualitative data collection by using purposive sampling when recruiting for diary room entries. Purposive sampling involved the researcher observing participants during OAE, taking note of different experiences, reactions to the activities, personality types, and demographics, and ensuring that a heterogeneous sample of participants were invited into the diary room that reflected the differences observed. For example, sampling included students who appeared to be enjoying OAE and working very well in their group, as well as those students who appeared less comfortable. Essentially, the goal of purposive sampling was to ensure the sample represented, as much as possible, the range of potential participants within the research setting (Hastie & Hay, 2012). In addition, the inclusion of process measures strengthens the design in helping to explain how and why outcomes came about, rather than just showing that outcomes do occur (Hayes, 2013). However, despite the benefits of the video diary room, the understanding of processes was limited within this method due to the researcher not being present to probe responses. This limitation supports the suggestion that the diary room would perhaps be most effective when implemented alongside other methods that enable entries to be followed up (Cooley, Holland et al., 2014).

Another potential limitation identified in OAE studies is the timing of pre- and post-course measures. It has been advised that the emotions experienced by participants immediately before and after OAE may distort responses, and that questionnaires should ideally be administered at least a week before and after a

course (Hattie et al., 1997; McEvoy, 1997; Scrutton & Beames, 2015). Whilst this was not the case in the present thesis (i.e., questionnaires were completed on the coach to the centre and at the end of the course), clear and non-biased instructions were given by an investigator who was independent from the OAE provider, and who asked participants to answer honestly and accurately, which would reduce the risk of bias (Cumming, 2013). In addition, the qualitative data allowed responses to be triangulated and for the immediate reaction and learning responses to be reassessed at follow-up, with the benefit of hindsight.

A final limitation experienced during this thesis resulted from the practicalities of data collection, whereby the majority of data was collected concurrently over a 3-year period. As a result, although the studies follow on from one another, each was designed and conducted before the data from the previous study had been fully analysed. Ideally, if time had permitted, it would have been more effective to fully analyse the qualitative studies in Chapters 3 and 4, before designing the multi-scale questionnaires for use in the quantitative studies in Chapters 5 and 6. Had this been the case, the questionnaires could have been more specifically aligned with outcomes and processes identified in Chapters 3 and 4, which would have tested their validity even more rigorously.

Future Research

The present thesis prompts a number of new and exciting areas of research, some of which are already underway and others that are potential ventures for the future. Firstly, another area of research stemmed from the diary room study in Chapter 3, after students discussed a number of benefits to working in multicultural groups. This particular finding led to a grant from the Higher

Education Academy to conduct a mixed method and case study design research projects (Burns, Cumming, Cooley, & Holland, 2012; Cooley, Cumming, Holland, & Burns, 2013). Preliminary evidence has so far revealed a unique exposure to multicultural groupwork provided by the OAE activities and living arrangements, which is an exposure that students' often avoid or fail to experience during higher education (Halualani et al., 2004; Hills & Thom, 2005). These interactions led to the development of skills, attitudes, and understanding specific to working in diverse cultural groups, as well as improved integration and sense of belonging among home and international students. Future research is now required into how OAE courses could be adapted to exploit these benefits further, such as more focused group reflections, and adapting activities to change the cultural dynamics in groups (e.g., providing activity sheets only in a foreign language). Another unexpected finding revealed in Chapter 3 was the positive impact of OAE on intrapersonal outcomes, alongside the more intended benefits to groupwork (i.e., interpersonal outcomes). Within the theory of multiple intelligences, interpersonal intelligence is referred to as being 'people smart' and intrapersonal intelligence as 'self smart', both of which form a key part of an individuals overall emotional intelligence (Gardner, 1999). A specific focus on the development of intrapersonal intelligence and the broader concept of emotional intelligence was beyond the scope of this thesis, but would be an interesting area for future research in higher education. Emotional intelligence is considered to be an important contributor towards group success and may therefore play an important role in groupwork development (Druskat & Wolff, 2001).

A second area in need of further research is the use of pre- and post-course interventions to aid learning and transfer. In the present thesis, what students brought with them to the learning experience (i.e., their prior experiences, thoughts, and feelings), together with their mindsets after the experience (i.e., their attitudes, transfer intentions, and transfer effort), had a profound impact on course reactions, learning, and subsequent transfer. This finding supports organisational research showing pre-training and follow-up activities to be strong predictors of training success (Gist, Stevens, & Bavetta, 1991; Richman-Hirsch, 2001), yet these areas typically receive little attention compared to the training course itself (Brinkerhoff, 2006; Kirkpatrick, 2015). In another study conducted alongside this thesis, the effects of a pre-course educational video were tested on students attending OAE (Cooley, Cumming, & Burns, in prep). The video was developed based on the theory of planned behaviour (Ajzen, 1991) and was found to significantly improve learning intentions in students who viewed it before attending OAE compared to controls. However, more research is needed to develop and test other pre- and post-course interventions, such as workshops, follow-up activities, continued reflection, mentoring, and prompting, and the effect these may have on areas such as intentions, attitudes, self-efficacy, transfer effort, and transfer success.

Third, many of the findings from this thesis are now being applied to a different population in a programme of research focused on disadvantaged youth (Cumming et al., 2015; Cooley, Holland, Quinton, Burns, & Cumming, 2014). Here, many of the principles of the model for optimal learning and transfer are being used to create a novel training programme called Mental Skills Training for

Life (MST for life), currently being implemented at the Charity, St Basils. During a 10-week programme based in Birmingham, youth aged between 16 and 22, who are housed in supported accommodation, take on a series of challenging, experiential activities and workshops, before embarking on a 3-day residential at the Raymond Priestley Centre. The programme is designed to promote the discovery of strengths and social belonging, develop skills and mental techniques in areas such as groupwork, self-regulation, and goal setting, and raise aspirations, self-confidence, resilience, and well-being.

Other areas of future research surround the methods used in the present thesis. As my research focused heavily on self-reported measures of groupwork, there remains a need for more objective indicators of group performance. In response to this need, another study was conducted alongside this thesis that further develops the groupwork skills questionnaire (GSQ; Cumming et al., 2014) into an observational tool for assessing and reflecting on groupwork (Cooley, Cumming, & Burns, in prep). In this study, groups of students were video recorded whilst working on different problem-solving activities. A panel of trained observers watched the recordings back and scored each participant using the GSQ. The observers' scores were then compared to the participants' self-reported scores taken at the end of the activity. So far, the study has shown the observational GSQ to have high inter-rater reliability when used across multiple observers and also demonstrates that students who have received no formal groupwork training tend to score themselves more favourably on the GSQ compared to scores given by trained observers. Based on these findings, it would be of interest to investigate further the potential for using the GSQ as an

observational tool for assessing changes in groupwork following an intervention such as OAE. It would be of particular interest whether these observed scores would also reveal a drop-off at follow-up and a lack of change in task groupwork skills, as recorded in the self-report measures in the present thesis. Future research would also be valuable in assessing the potential for using the GSQ as a self-reflective tool for students during a training course. That is, the items within the GSQ could be used to structure reflective discussions, and students could score themselves to help identify their strengths and weaknesses. Similarly, there is also a need to further validate the video diary room method in terms of its potential for use as a learning tool. The space and time students were given in the diary room to consider their responses encouraged reflective learning and could be used as a supplement to the group reflection typically found in OAE.

Finally, whilst most of the questionnaires used in the present thesis had been developed and validated in previous studies, scales for assessing the transfer process were lacking in the literature, and hence bespoke items were developed for use in the present thesis. Future research is needed to develop a multidimensional questionnaire for assessing the transfer process. This questionnaire could tap generic aspects of the transfer processes, such as a subscale measuring perceived transfer outcomes (e.g., behaviour change, benefits within/outside of the transfer context, and overall impact of transfer) and transfer processes (e.g., transfer intention, opportunity, effort, ability to generalise learning, and transfer support). Such a questionnaire would enable providers and evaluators to determine transfer success and the areas for improvement following a learning experience.

Conclusion

In summary, this thesis offers support for a number of benefits of OAE when used in higher education, adding to the evidence base of OAE in a specific area that was in need of more rigorous investigation. The thesis also contributed to the theoretical literature by exploring some of the personal and environmental factors underpinning OAE, which provide some support for a number of theories commonly used to explain its benefits. Presenting these contributing factors in the model for optimal learning and transfer (MOLT) offers a unique, accessible, and empirically supported model that can be used in the design of future training courses. In addition to contributing to the field of OAE, the present thesis also promotes innovation in the way evaluations are conducted.

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**APPENDIX 1.1. Participant information sheet
(adaptations used in Chapters 3 to 6)**

**Assessing Transferable Skills in Higher Education
*Participant Information Sheet***

We would like to invite you to take part in a research study evaluating the transfer of skills learned at the Raymond Priestley Centre back to University life.

What is the purpose of the study?

Courses have been run for many years, with the aim of developing generic skills, such as teamwork, project management, and presentation skills, that can be transferred to academic or employment domains. This study will examine the individual and situational factors that influence how well this skill transfer occurs. This understanding will help us to further develop training courses in the future to ensure that the skills learned are effectively transferred to other areas of a student's life, such as their studies.

Why have I been invited and do I have to take part?

We are recruiting students who attend training courses as part of their undergraduate or postgraduate programmes. After reading this information sheet, you can ask any questions about the study. If you agree to take part, we would like you to complete the consent form. There is no compulsion to take part.

What will I have to do?

Main study

You will be asked to complete questionnaires before, and immediately after, the course. In two to six month time, you will then receive a questionnaire via email or in a lecture. We would also like to access your academic records in your school/department, to investigate whether skills learned at Coniston are related to any objective measures of academic performance (e.g., your year mark). We are asking your explicit permission to do so on the attached consent form.

Additional options

During the course, you may also be asked to discuss your experiences by making video diary entries; this will not be on all courses, and will not be compulsory. A diary room will be set up where you can privately share your thoughts about what you have learned on the course. We will provide you with some prompt cards to give you some ideas of what you might like to discuss, but it is really your opportunity to tell us what you think. A camera will be set up in the room to record your diary entry. It will be secured in such a way that all you will need to do is hit record, to start your entry, and stop, to finish. No students will have access to "rewind" or "play", and will therefore be prevented from viewing your entries.

We may also invite you to participate in a group interview once you are back on campus. If you choose to participate in the interview, it would last approximately 60 minutes and involve you discussing the skills you learned on the training course and the extent to which you have been able to use these skills in academic and employment situations. During this interview, your conversation will be audio and video recorded. The purpose of these recordings is to facilitate the analysis of what is said during the interviews and will only ever be heard by the researchers. To aid recall of your experiences of the training course during the group interview, we will take photographs with your permission. The photographs will be taken to depict you and other participants engaged in activities occurring during the course (e.g., group discussion). These photographs will be printed by the researchers and shown to only those who participate in the group interview.

Can I withdraw once the research has started?

You may withdraw at any time, without any explanation or negative consequences. If you choose to withdraw from the study please contact Sam Cooley (contact details provided below) to inform us of your decision. The deadline for withdrawing from the study is 3 months after the final (online) questionnaire or group interview (whichever comes last) has been completed. If you choose to withdraw, your data will be destroyed and not included in the study.

What will happen to the results of the research study?

By participating in this study, you are also agreeing that your results may be used for scientific purposes, including publication in scientific journals, so long as your anonymity is maintained. There are no known risks associated with participation in this research.

In accordance with the Data Protection Act (1998) raw and processed data from this investigation will be kept for a period of ten years following completion of the study. Questionnaires and computer files containing processed data will be kept securely in a locked filing cabinet and will only be accessed by the study investigators. After this time period, all the data collected (including photographs, audio and video files) will be destroyed.

Our overall findings will be used to improve training courses in the future, and will be published in scientific journals. You will not be individually identified in any publication. A brief summary presenting the results and findings will be available upon request at the end of the study.

Further information and contact details

For further information, please contact:



If you have any further concerns about your study skills and personal development, please see your personal tutor within your school/department and/or the University of Birmingham's already existing resources for study skills and academic support (<http://www.as.bham.ac.uk/support/study.shtml>).

APPENDIX 1.2. Consent form (used in Chapters 3 to 6)

**Assessing Transferable Skills in Higher Education
Participant Consent Form**

*****VERY IMPORTANT***** Create your unique participant number below

Your date of birth: Your number of brothers and sisters:

D D M M Y Y

	Tick to consent
I confirm that I have read and understand the information sheet, and have had the opportunity to ask questions to my satisfaction.	
I understand that my participation is voluntary and that I am free to withdraw at any time before the deadline described on the information sheet without giving any reason or my rights being affected.	
I give consent for the data that I provide to be used for research purposes.	
I give consent for the investigators to access my academic progress records.	
I understand that any data collected about me will be kept confidential.	
I agree to take part in the above study.	

*First name:

*Surname:

*Date:

D D M M Y Y

*Signature: _____

*Email address:

(Preferably your University email address - We will use this address to send the follow up questionnaire and to invite you to a group interview)

APPENDIX 1.3. Demographic questions (used in Chapters 3 to 6)

Demographic Questionnaire

*******VERY IMPORTANT******* Create your unique participant number

Your date of birth: Your number of brothers and sisters:

D D M M Y Y *For example: 0 2*

A. Age: _____ Years

B. Gender: Female Male

C. Ethnic group (Please tick the box representing your ethnicity):

- White British White European White Other
 Mixed Asian or Asian British Black or Black British
 Chinese Other ethnic group

D. Is English your first language? Yes No

(If no, please state your first language: _____)

E. Degree course:

F. School/Department:

G. Status: Home/European student International student

H. For Home students, what is your parent's postal code (if your parents have different postal codes, please write the one where you spent the most time):

APPENDIX 1.4. Detailed thematic map

The course experience: A detailed thematic map, showing theme names, definitions and example quotes from Chapter 3

First level themes	Second level themes	Third level themes
<p>Individual preconceptions The preconceptions students bring to the experience</p>	<p>Motivation for attending Mixed reasons for attending the course</p>	<p>Compulsory The course is part of their degree <i>"I'm here today because we have to do it in year three, I'm not really sure why."</i></p> <p>Preparation for future academic work Developing project groups <i>"We are here because we need to do a robot project in our groups umm the same groups as we are going to be in the [OAE course] so it is a preparation for the group job in the robot making literally."</i></p> <p>Improving groupwork skills Opportunity to develop important groupwork skills <i>"It's not just for a module or something but maybe important for your future life so this is a good opportunity for me to improve my ability to communicate with others and to build a good relationship with say, with a stranger, to improve the performance of our team in the future."</i></p>
	<p>Positive affect Feeling excited to be on the course</p>	<p>Positive affect Feeling excited to be on the course <i>"I am quite excited about doing most of the tasks."</i></p>
	<p>Preferences for groupwork Mixed preference for groupwork</p>	<p>Enjoys groupwork <i>"I like being part of a team."</i></p> <p>Preference for independent learning <i>"Personally I prefer to work by myself independently by myself to solve some problems."</i></p>

Information from peers

Feelings towards the course are influenced by previous students

What to expect

Information about the course and the activities

"I've been told little bits from previous students what it's going to be like."

Positive views

Sharing of positive feelings towards the course

"I have heard something from the others which have come to [the outdoor pursuits centre], it is very interesting -- a beautiful place."

Past experiences

Mixed experiences of OAE

Previous experience

Some previous experience of OAE

"I've done something similar to this in school so I'm pretty sure I know -- I'm pretty sure I know what's going on and what sort of tasks we'll be doing, because I'm sure it's pretty similar."

No previous experience

No previous experience of OAE

"This is my first course study outside, outdoors [at the outdoor pursuits centre], so I think it's great."

Concerns

Worries and reservations towards the experience

Personal safety

Causing harm to oneself

"Other than safety, falling off a cliff or something."

Environment

Uncomfortable weather conditions

"That the water is going to be cold, and that's about it. Getting muddy and yeah that's it."

Physical exertion

Feeling tired due to the workload

"When they are like, come on [the course], I'll be like oh my god ok. Just I thought it would be like tiring. I knew it's not going to be boring but, not really looking forward to it."

Being amongst others

Working and living with others

“My main concern would be whether I get on with my team mates because if I didn’t I’d find it quite a hard, hard couple of days.”

Lack of pre-course information

Not knowing what to expect

“I don’t get detail information for this activity I think this is what I’m concerned and maybe most of the time people will be afraid of what they learn something new. So maybe it is important to give some more information about activities beforehand. I think that is important.”

No concerns

No concerns expressed

“I don’t really have any concerns about the course.”

<p>Outcome expectations What students hope to take away from the experience <i>“We have got a lot to learn on this course.”</i> <i>“To be honest I don’t think I’ll learn much.”</i></p>	<p>Groupwork skills Developing groupwork skills <i>“I am [here] so I can improve my teamwork skills”</i></p>	<p>Cooperation Being able to work effectively with others <i>“I guess we are going to improve the umm - being a part of a group and we are going to improve how to cope with each other very well and how to divide the duties with each other and really how to tolerate others opinions and how to make something work even if we are not so friendly or if you are not having the same idea about something.”</i></p>
		<p>Leadership Ability to lead a group <i>“I hope to improve my leadership skills within a team.”</i></p>
		<p>Communication Increased speaking and listening skills <i>“Build up my communication, get my point across, be able to understand what people are trying to say and so on, that sort of thing.”</i></p>

<p>Enjoyment Having a fun and pleasant time</p>	<p>Enjoyment Having a fun and pleasant time <i>“I think it will just be a good laugh.”</i></p>
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	<p>Improved peer relationships Developing existing friendships and making new ones</p>	<p>Improved peer relationships Developing existing friendships and making new ones <i>"Hopefully make a few more friendships."</i></p>
	<p>Benefit to future behaviour Expectation beyond the course</p>	<p>University Benefits to their academic experience <i>"By doing this trip it will hopefully enhance my team working skills so it will make my studying better."</i></p> <p>Employment Benefits to future employment <i>"Well, I hope to learn to gain some skills for in team working, hopefully learn some skills that will help me stand out when it comes to getting a job. Basically what's going to help me get a job at the end."</i></p>
<p>Key elements of the experience Aspects of the experience that participants reported as particularly meaningful</p>	<p>Interesting and enjoyable activities Enjoying the tasks and working with others</p>	<p>Interesting and enjoyable activities Enjoying the tasks and working with others <i>"I had canoeing and building up a raft and practice it, but unfortunately some of us dropped into the water. It was really funny."</i> <i>"Did a lot of teamwork, a lot of activities, so we need to work together like, build a boat and blind climbing and something, some interesting activities."</i></p>
	<p>Challenging Activities were demanding and testing</p>	<p>Physically demanding A test of physical fitness <i>"At the last day at [the outdoor pursuits centre], just exhausted."</i></p> <p>Intellectually demanding A test of problem solving ability <i>"Really using you know a bit of intellect, thinking about it at the same time as doing the physical work."</i></p>

Language barriers

A test of communication

“And in the last two days I have had to get them to communicate with me somehow and some of their English is really poor but, I’ve had to make it work and I have to find a way to communicate with them and what it is they need or want or think or suggest and I have had to find a way to get them to tell me what they think is wrong with things, what they suggest. So that has been tricky but it has been interesting breaking down that language barrier.”

Frustrating

A test of patience

“Our raft was really solid and we worked well together. It got a bit stressful towards the end but it was fine... We did the crate stacking which didn’t go very well, no one was really listening to each other and we all got a bit frustrated.”

Sometimes unachievable

Occasionally too difficult to complete in the allocated time, provided experiences of failure

“Second day didn’t go so well, we didn’t really finish any of the tasks... and then we did the orienteering competition. It was going ok we found a couple of points and things but then we hit some ones we couldn’t do, we thought never mind let’s just enjoy the scenery and go for a walk like we’re probably not going to find these other points we haven’t really got the time to go looking for them let’s just enjoy the walk, if we come across some other points great, if we don’t never mind. We came back a little bit late but we enjoyed our day.”

Revealed weaknesses

The challenging activities showed areas in need of support and/or improvement

Individual weaknesses

Individuals who require extra support

"The amount of balance some of the people on my team have got isn't amazing. Well, I don't mean that in a derogatory way it's just not their thing, I'm sure given the choice they wouldn't do it to themselves. But, they haven't got loads of balance; they haven't got loads of dexterity."

"The blind fold climb, I wasn't very confident at that, but once you do it --It's not the heights, I didn't like doing it really."

Group weaknesses

Group processes that could be improved

"The overall design of the raft wasn't great so it didn't do very well. There you go, no one's fault really just the team, team lack of foresight I suppose."

"We did the crate stacking which didn't go very well, no one was really listening to each other."

Environment

The outdoor environment added to the experience

Novel

A new experience for many students

"This is the first time I have been to the western forest since I am from Malaysia... I think it's very interesting just walking around and see the beautiful scenery."

Perceived risk

Heightened awareness due to a sense of danger

“So, the exercises. First one involved crossing, basically an adventure course. A lot of ropes and planks and things like this. The prospect of falling with a harness on you. And that was fun... Individuals would have to be looked after by the rest of the team, which was good because you have to rely on your team mates to actually stop you from falling off this plank, which was high up in the air, and that is a good exercise for trust and all that. And very enjoyable.”

Natural consequences

Consequence to group failure provided by the natural environment

“I think when we did rafting, because we think and make a boat, but it doesn’t work, it didn’t work because we didn’t work well and we didn’t think well so we fall in the sea.”

Time outside of activities

Time spent during housekeeping duties and free-time added to the experience

Importance of duty rotas

Rotas added to the learning experience
“Half past 7 out of bed and showered, into breakfast in quite a slow routine to be honest but it is good because it is all the teamwork aspects that are going on concurrently... If we were not given a duty rota or anything, the place would rapidly descend into just rubbish and chaos. There would be no cleaning done at all so, it is good to start thinking about what is necessary in a business or an environment like that in order to keep things running smoothly and that is rotas and everyone doing their part.”

Free-time

The free-time also provided meaningful experiences

"I think the most meaningful experience has been last night's social, going to the pub. Umm the whole of our team went along. We all had umm a really good laugh just umm sharing experiences and stories."

"I guess it has sort of taught me to be a bit more accepting, understanding sort of like appreciating what other people's views are. I would say that's though come about just as much in living with people and having to do cleaning with the people as much as having to do the particular tasks."

Overcoming the challenge

A variety of interpersonal and intrapersonal methods were used to overcome the difficulty of the activities

Interpersonal support

Support gained from the interaction with others

Groupwork

Group members helping each other and working together

"Every member in the team put some contributions to the final answer and they help each other."

Leadership

Group members taking a lead

"Because I have done it before I proposed idea and we went with it and it worked really well and everyone was really happy about it and we kind of went... I enjoyed that but that again comes back to the leadership aspect."

Communication

Sharing ideas to overcome problems

"When we make some mistakes and we usually have a discussion and we listen to others ideas and chose the best one. It is a very good way to learn knowledge and to go forward to what we want."

Role allocation

Organising roles to suit individuals strengths and weaknesses

"We chose people who maybe had much better balance to carry the water and the other two to support... So being clean, clear headed and allocating different jobs to better suited individuals I think, helped nicely there."

Trust

Depending on others for support

"We just do some adventure and I never did it before, it's first time I did a lot of things, but I really learnt a lot, because I just trusted my team members."

Humour

Putting difficulties into perspective through light heartedness

"A bit of humour has certainly helped me to overcome a few things."

Instructor support

Using the instructors as a source of emotional, intellectual and physical support

"The [instructors] that are taking us are really, really friendly, really helpful, quite insightful about stuff. They realise where certain weakness are and strengths are in the group. They also help out with that quite well. So if we are not sure about what someone should be doing, they are quite helpful with maybe this is somewhere you can be working on."

Intrapersonal support

Support gained from the self

Application of previous knowledge

Use of knowledge and skills gained from prior experiences

"I feel as though I really achieved something because I used a lot of the skills I've already learnt through military training as well and brought them into this."

Emotional control

Controlling emotions and being self-motivated

"...I have had to keep my head cool."

"I usually speak to myself that you can do it, you can win, because you have the ability."

Improvisation

Having to act fast due to time restrictions and environmental constraints

“Improvisation happened quite often, especially because we were trying to do things quickly and we have not got time to stop and think about it. Especially on the high wire ropes.”

Reflection

Changing behaviour based on previous activities during the course

“Yesterday I felt that I kind of look back and regretted being quite so loud and overbearing whereas today I kind of was, I made sure I took a step back.”

Planning

Identifying potential barriers and solutions

“Trying to kind of foresee difficulties and overcoming them before they get to them.”

Reflection on the experience How students felt towards the course as a whole	Positive and memorable An expectation of fond, lasting memories	Positive and memorable An expectation of fond, lasting memories <i>“Well, in a nut shell, the best experience of my life.”</i> <i>“Had a lot of fun so that is an experience I will keep forever.”</i>
	Exceeded expectations Surpassed initial expectations	Exceeded expectations Surpassed initial expectations <i>“Well [the OAE course] has been good to be honest with you, honestly I thought it was going to be an inconvenience but, I liked it I liked it, it was good.”</i>
	Sense of achievement Success in the activities provided a sense of accomplishment	Sense of achievement Success in the activities provided a sense of accomplishment <i>“We had just built this raft and I wasn’t sure about how well it was built but, from an engineering perspective I kind of felt that I had followed the rules and that the person who was kind of taking the design charge was pretty confident, so I was confident as well. And then when we got out there and it worked and we beat the other team quite convincingly, that was really great to see. I really, really enjoyed that.”</i>

Thoughts on transfer

Seeing the similarities between different contexts and the value in transferring skills

Thoughts on transfer

Seeing the similarities between different contexts and the value in transferring skills

"...it has been interesting breaking down that language barrier because you know I'm in a group with these people and if nothing else have a project to do with them in march."

"Well, in the future employment that's vitally important when... You can't be a leader when you first come to a company... some people will change to leaders, that's life. We should be adaptable to any situations, that's what I learnt."

APPENDIX 1.4. Continued

The course outcomes: A detailed thematic map, showing theme names, definitions, and example quotes from Chapter 3

First level themes	Second level themes	Third level themes
<p>Interpersonal Outcomes involving interaction with others</p>	<p>Groupwork Development of groupwork skills and positive attitudes <i>"I think the best experience was to know and to learn how actually a team works, which means we have to work as a team with several members. This is a really useful and significant skill in our future career, either in academic area or in the industry areas."</i></p>	<p>Communication Understanding the importance of, and increasing, one's ability to listen and communicate effectively with others <i>"I learnt to listen to others, not always listen to myself."</i> <i>"Number one definitely, it improves my teamwork, my communication skills with other people."</i></p> <p>Leadership Developed own leadership style and knowledge of the qualities associated with a successful leader <i>"Well I have learnt how to sort of step back. Normally, I take a leadership role in project stuff and I really found that taking a step back is a different perspective on stuff."</i> <i>"...you know you are more likely to work for somebody if you are enjoying their company and getting along well. I think you are more likely to do as they have asked even if it does not suit you very much."</i></p> <p>Team spirit Fostering supportive environment through trust, self-sacrifice and motivating others <i>"Well, about this part what I learnt most is about the sacrifice because at the second day, when our boat tried to land, our ship stuck in a rock under the water, so we can't land it. Two men of our group, they just walk into the water and pull our ship to the land. So they got whole trousers wet and pretty cold. They just sacrifice for our whole group. That's what I really think is impressive, what I should learn from that."</i> <i>"Firstly, you should trust to your team members. You should trust them to help you fulfil the job also, you can guide a lot from that because you should give faith to your team members and also you should do a good job by yourself."</i></p>

Group reflection

Ability to reflect “in action” and reflect “on action” during groupwork

“It’s been good to have a kind of analytic approach to that, with kind of the whole team involved and as well with people observing us. Our leader telling us what we’ve been doing, what he’s been seeing. So that’s been good, kind of being able to reflect on what we’ve done, brainstorm what would have been better.”

“It’s quite useful to step back and look at a situation sometimes. Have someone, if they’re not doing anything, step back and think about the whole situation, rather than what they are actually doing. I learnt that with the crate thing, I was doing the rope to stop [group member] from falling. Because I wasn’t involved in making the crates, I could have a bit more of an input in to from that angle, stepped away from it, I could tell whether it was going to work or not.”

Team roles

Understanding the importance of, and identifying, different team roles

“I think I have learnt that some people... well it has become very clear that some people do not like to voice their opinions and are very passive, and I think a team does need people like that so that they can come up with the ideas but they still need someone to put them across.”

Cooperation

Ability to compromise and work with others cohesively

“It is impossible to walk across a seesaw unless the other two are supporting either end, and literally everyone was getting involved. So what I have learnt so far is everyone in the team is a useful asset and it is very much worth investing in using your resources, human resources.”

Functioning of intact groups

Benefits to the functioning of groups returning to university to work together on projects

“Next term we will build a robot. It is a big project. It will be hard. So I can hardly do it only by myself. [the OAE course] taught me that you can ask your partner, you can cooperate and you can achieve more.”

Improved relationships
Making friends and gaining support from those around you

Peer group
Developing friendships and social support with other students

"We knew much more people that I used to know before travelling here, like before coming here, I had about ten friends, twelve friends from the school. Now I almost know everyone by name."

"I meet some new friends. When I'm in school, I meet some difficulties or problems, I can ask them for help."

Student and staff

Getting to know lecturers better and building supportive links

"And one of the things I enjoy the best, finding that didn't know our lecturers were, found out they were very good guys. They really care for us and are here to help us, not to only provide us with exams and they are here to help us and we have good time together... Our relationship was just entering the lecture, taking some information, getting out. Now know them personally, they are very good guys."

Internationalisation
Promoting, valuing and learning to work effectively in a multicultural environment

Internationalising groupwork
Changing cultural beliefs about the benefits of team work and developing students ability to work in multicultural teams

"In China I usually have fewer time, or fewer chance to cooperate with others. We usually study by ourselves, but [on this course] I have found that teamwork is very important."

"Just more of an in depth knowledge of how to work in a, in a, especially in a multinational group."

Overcoming multilingual challenges

Increased frequency and effectiveness of cross-cultural communication within multilingual groups

"I think it is difficult for many people from different countries to work here at first, but then I found if you really want to communicate with others, it will be easy."

"...communication is pretty critical...my mother language is not English and I have quite difficulty in understanding others, other I mean, British people and speak, communicate with them, and this a little bit challenge to me. And I think. Personally, I improve a little bit of communication skills, not only from the speaking language or from oral speaking but we use other postures or body language or just write it down on paper, that's a good way to communicate with each other."

Reduced cultural divide

Started to value and increase integration and recognition of more to do

"I think there is segregation in our year and its wrong and it would be nice to break it down a bit more."

"I think I gained experience from collective living life, daily life with other local British students, I think that's very precious experience to me."

Intrapersonal

Outcomes to do with the self

Mental toughness

Capacity to deal with challenges

Persistence

Not giving up when faced with difficulties

"And I learnt to never give up. I know no matter what happens in academic work also in life in other and maybe work in future, we will meet a lot of difficulties but to make sure we never give up. And this time I learnt a lot and I never give up, I really fulfil any jobs and overcome any difficulties. So I think I learnt from myself is never give up."

Self-confidence

Having faith in oneself

"I learnt is have faith. Because we just do some adventure and I never did it before, it's first time I did a lot of things, but I really learnt a lot... I think I just can fulfil my job, I have faith in myself that I really did everything and I overcome every difficulties."

Bravery

Standing up to your responsibilities despite low confidence

"Firstly bravery, you know there is just one girl in our team and we always fulfil a job just by our group, if I can't do it our team will fail. So although I am a girl, I should always think I should be brave. So I think being brave is the most important thing I learnt."

Adaptability

Ability to cope when entering a new environment or situation

"[I learnt] adaptability to new environments."

Task management skills

Ability to carry out tasks effectively

Planning

Understanding why and how to plan

"You have got to plan things. I mean a couple of instances especially yesterday where we just dived into challenges and you had to plan half way through and we did not use planning time efficiently, so, don't be afraid to use all the time and all the resources you have got."

Problem-solving

Using previous knowledge and creativity to solve a problem

"I learnt how to think by myself and use my knowledge in practice to solve my problem."

"We should always be creative in our, even in our life, not only just need to be creative in our course. That's what I learnt."

Time management

Ability to complete tasks within a given timeframe

"I learnt communication and time management were the two things that really struck through... It taught us to keep an eye on the time, also it's quite useful to step back and look at the situation sometimes."

Self-awareness

Awareness of own areas in need of improvement

Self-awareness

Awareness of own areas in need of improvement

"I have learnt that I can get incredibly grumpy if things aren't going my way, incredibly grumpy and that I find it very difficult not to snap at people. I probably need to learn... I wasn't aware of that, I thought I was quite chilled out but apparently not. Probably rein that in a bit."

Physical activity
Involvement in
exercise and sport

Exercise

The course provided immediate bouts of exercise

"I think that's a part of the like exercise, daily exercise. I went a long time without exercise so it's really tough weekend for me."

Outdoor recreation skills

Practical skills required to take part in outdoor pursuits

"I have survivor skills in the forest."

Motivation

Intension to take part in new sports and increase physical activity in the future

"...the first thing that I really wanted to do, was rowing...I really liked it, maybe I will continue the rowing in the future."

"Maybe before I came here, I'm a little bit lazy. I don't want to go a long way or want to do some other hard works. But in [the OAE course] I find hard working is sometimes is funny which I can learn a lot of things when I do some hard work, cooperate with others and making new friends. So, I think after I go back from [the OAE course] I will not be lazy anymore."

**APPENDIX 2.1. Focus group protocol: Student perspective
(attendees)**

***The development and transference of teamwork skills
from outdoor education to academia***

Interview Guide – Student Focus Group

Focus group number: _____

Date: _____

Time Began: _____ Time Ended: _____

Number of participants: _____

Discussion facilitator: _____

Other researchers present: _____

<i>Participant details</i> (from left to right around the table)			
<i>Participant number</i>	<i>Name</i>	<i>Sex</i>	<i>School</i>

Section #1 (Not Recorded)

Thanks for agreeing to participate in this focus group. The purpose of this study is to gain a better understanding of the transfer of teamwork skills from an outdoor pursuits setting to work setting following the completion of your degree course.

There are no right or wrong answers, both positive and negative comments are important. Of course, what you say and how much you want to say is up to you. You should not worry about what you are expected to say and whether you are on the right track.

So that I do not miss any of your comments, I would like to record our discussion. I have asked your permission to do this, as it will make our research more accurate and easier to carry out. So that there is no interference in the recording I would be very grateful if you could turn off any other electronics or software that might interfere with the recording.

I should point out that your contribution will be kept confidential, and that any of your comments that are published will not contain your name. The interview will last for approximately **1 hour**. During this time, I would like to explore a number of topics. If you have any questions about the research project I will be more than happy to answer these at the end of our discussion.

Just before we start, I would just like to tell you a couple of simple guidelines. They are important so that we get the best possible discussion, the best possible recording, and so that we keep everybody happy.

- 1) Please speak freely – all of your opinions are important!
- 2) Please make sure that you allow others to speak, you do not talk at the same time, and do not interrupt others.
- 3) Please turn off your mobile phone completely.

Section #2: Introduction

1. Please could you take turns in introducing yourself and to say what degree course you are studying?

Section #3: Going to RPC

2. What were the main reasons that your schools sent you to the Raymond Priestley Centre?
 - a. Were these made explicit?
 - b. Did you agree with these reasons?
 - c. Did you achieve these outcomes?
3. What were your expectations of the course?
 - a. What did you hope to gain from the experience?
 - b. Did you have any worries?
4. Please look through the following photographs. Select a photograph that represents a meaningful experience that you had on the course? Take your time to look at the details of what is happening in the photos and people's faces.
 - a. Take turns in explaining your experience (show each person's photo on the projector so that the others can provide input).
 - b. What did you learn from this?

Leave photographs on the table and invite the group to use the photos as they wish to help answer the following questions.

5. Thinking back, what particular skills did you either learn or develop at the centre?
 - a. Were there any specific teamwork skills?
 - b. Were there any other general benefits you gained from the course?
 - c. Which experiences taught you the most?
 - d. Did you have any negative learning experiences or experiences that you didn't find particularly useful?

- e. Is there anything that the centre did to encourage you to take the skills away and use them in other areas of your life? E.g. academia and employment.

Section #3: Transferring skills to university

- 6. Since you have returned to University, how well do you remember what you learnt on the course?
 - a. Have you used any of the skills you learnt since returning?
 - i. Have you used any teamwork skills you learnt, since returning?
 - ii. Has anything prevented you from using the skills since returning?
 - iii. What teamwork opportunities have you had since returning, where you have been able to practice the skills?
 - b. Has anything helped you to develop and apply these skills since returning?
 - I. Is there anything that you think would help you to use the skills you learnt when returning to academia?
 - II. Have your schools made any attempts to assist you in using the skills learnt?
 - III. Are there any particular situations that prompt you to revisit the experience and what you learnt?
 - c. Do you expect to use any of the skills you learnt in your future studies?
 - i. How do you think the experience will go on to help you at university?
 - ii. Are there any skills that you learnt that you feel you still need to improve on?
 - d. Are there any other benefits of the course that you have experienced since returning?
 - I. Have you noticed any changes in yourself since returning?
- 7. Have you noticed any differences or changes in your peers since returning?
 - a. Have you noticed any differences between those who went on the course and those that didn't?

8. Do you think the experience will help you when you enter employment?
 - a. How do you think the experience will help you?
 - b. How important do you think groupwork skills will be in securing a job?

Section #4: Advice to current University of Birmingham RPC students

9. What advice would you give to students who want to get the most out their RPC experience?
10. What advice would you give to students on how to make sure they use the skills they learnt when they return from the centre?

Section #5: Video diary room

11. Did any of you see the diary room entries taking place on your course?
 - a. What encouraged you to take part in an entry (if one or more took part)?
 - b. What discouraged you to take part (if one or more saw it but didn't take part)?
 - c. Did taking part change your experience of the course in anyway (if one or more took part)?

*****Recorder Turned Off*****

Section 6: Closing

I would like to again thank you for participating in this interview and remind you that any comments that you made will remain confidential and for research purposes only. The recording will go on to be transcribed work form. If there are any comments you wish to be withdrawn or amended please let me know before leaving.

General Reflections about the Interview/Interviewee:

**APPENDIX 2.2. Focus group protocol: Student perspective
(non-attendees)**

The use of teamwork skills in academia

Interview Guide – Student Focus Group

Focus group number: _____

Date: _____

Time Began: _____ Time Ended: _____

Number of participants: _____

Discussion facilitator: _____

Other researchers present: _____

<i>Participant details</i> (from left to right around the table)			
<i>Participant number</i>	<i>Name</i>	<i>Sex</i>	<i>School</i>

Section #1 (Not Recorded)

Thanks for agreeing to participate in this focus group. The purpose of this study is to gain a better understanding your thoughts and experiences of groupwork whilst at university.

There are no right or wrong answers, both positive and negative comments are important. Of course, what to say and how much you want to say is up to you. You should not worry about what you are expected to say and whether you are on the right track.

So that I do not miss any of your comments, I would like to record our discussion. I have asked your permission to do this, as it will make our research more accurate and easier to carry out. So that there is no interference in the recording I would be very grateful if you could turn off any other electronics or software that might interfere with the recording.

I should point out that your contribution will be kept confidential, and that any of your comments that are published will not contain your name. The interview will last for approximately **1 hour**. During this time, I would like to explore a number of topics. If you have any questions about the research project I will be more than happy to answer these at the end of our discussion.

Just before we start, I would just like to tell you a couple of simple guidelines. They are important so that we get the best possible discussion, the best possible recording, and so that we keep everybody happy.

- 1) Please speak freely – all of your opinions are important!
- 2) Please make sure that you allow others to speak, you do not talk at the same time, and do not interrupt others.
- 3) Please turn off your mobile phone completely.

*****Recorder Turned On *****

Section #2: Introduction

1. Please could you take turns in introducing yourself and the course that you are from?

Section #3: Groupwork skills

2. How often do you take part activities as part of a group?
 - a. How much of your course requires groupwork?
 - b. Are you involved in any non-formal group work e.g. with friends, societies?
3. How important do you think groupwork skills are?
 - a. How important are groupwork skills at university?
 - b. Do you think groupwork skills will be important in your careers?
 - c. How much of your career do you think will involve working in a team or group?
4. How do you feel about working in groups?
 - a. What do you like about groupwork?
 - b. What do you dislike about groupwork?
 - c. Would any of you prefer to work alone than in a group, why is this?
 - d. Would any of you prefer to work in a group, why is this?
5. How do you feel about your ability to work in groups?
 - a. How successful have your previous groupwork experiences been?
 - b. Have you ever been taught how to work well in a group?
 - c. Do you know what skills are required to work well in a group?
 - d. Do you feel you have a range of groupwork skills?
 - e. Do you think your ability to work well in groups could be developed further? How?

Section #4: The Raymond Priestley Centre

- 6. How were you informed of the Raymond Priestley Centre course?
 - a. Where you aware of the course?
 - b. How was the course described to you?
 - c. What were your expectations of the course?

- 7. What were your reasons for not attending the course?
 - a. Do you feel you missed out on anything from not attending? Why?
 - b. Do you think you missed out on any learning experiences? Why?

- 8. How do you think your peers who went to the RPC found the experience?
 - a. What do you think they learnt?
 - b. Have you noticed any differences in them since they returned?
 - c. Have you noticed any differences in their groupwork?

*****Recorder Turned Off *****

Section #5: Closing

I would like to again thank you for participating in this interview and remind you that any comments that you made will remain confidential and for research purposes only. The recording will go on to be transcribed work form. If there are any comments you wish to be withdrawn or amended please let me know before leaving.

General Reflections about the Interview/Interviewee:

APPENDIX 2.3. Interview protocol: Alumni perspective

Influence of an outdoor pursuits course for the development and transference of teamwork skills for the workplace

Interview Guide - Alumni

Participant ID Number:				
Date of birth:	<input type="text"/>	<input type="text"/>	<input type="text"/>	# (of siblings) <input type="text"/>
	D	M	Y	

Date: _____

Time Began: _____ Time Ended: _____

A. Age: _____ Years

B. Sex: Female Male

C. Ethnic group: White British White European White Other
 Mixed Asian or Asian British Black or Black British
 Chinese Other ethnic group

D. Year that you went to Coniston: _____

E. Number of visits to Coniston: _____

F. Degree Course: _____

G. Year of Graduation from Birmingham University: _____

H. Current occupation: _____

I. Time in workforce: _____ (years)

J. Highest academic qualification: Undergraduate degree
 Postgraduate

Section #1 (Not Recorded)

Thanks for agreeing to participate in this interview. The purpose of this study is to gain a better understanding of the transfer of teamwork skills from an outdoor pursuits setting to work setting following the completion of your degree course.

There are no right or wrong answers, both positive and negative comments are important. Of course, what to say and how much you want to say is up to you. You should not worry about what you are expected to say and whether you are on the right track.

So that I do not miss any of your comments, I would like to record our discussion. I have asked your permission to do this, as it will make our research more accurate and easier to carry out. So that there is no interference in the recording I would be very grateful if you could turn off any other electronics or software that might interfere with the recording.

I should point out that your contribution will be kept confidential, and that any of your comments that are published will not contain your name. The interview will last for approximately **30 minutes**. During this time, I would like to explore a number of topics. If you have any questions about the research project I will be more than happy to answer these at the end of our discussion.

Section #2: Going to RPC

1. How well do you remember the RPC course?
 - a. Can you remember the activities?
 - b. Can you remember the skills promoted?

2. What was the aim of the outdoor course when your degree sent you to the RPC?
 - a. Were these made explicit?

3. How were these skills emphasised throughout the course?
 - a. By RPC or University staff?
 - b. Planned outdoor activities/chores?
 - c. Unplanned teachable moment?

4. When you went to RPC, what was the make-up of the group?
 - a. Demographics, nationality, etc
 - b. Do you feel this influenced your experience of RPC?
Positive/negative?
 - c. Did you learn anything particularly due to the group make-up?

5. Did you learn any other transferable skills?

Section #3: Transferring Skills to university

1. Do you feel the teamwork skills learnt at RPC help you complete your degree at Birmingham?
 - a. What skills specifically helped you?
 - b. Example situations (e.g., course work, dissertation, etc)

2. Was there anything in particular that helped develop and apply these skills when back at university?
 - a. Experience at RPC or the University of Birmingham?
 - b. What support were you provided?
 - i. RPC Staff

ii. University Staff

Section #4: Transferring Skills to the work place

6. Did the teamwork skills developed at RPC help you to secure your current job?
 - d. How did they help you?
 - e. How did you demonstrate them?

7. How important do you feel teamwork skills are in the workplace?
 - f. How much do potential employers emphasis teamwork skills when you were being hired?

8. How often do you use your teamwork skills while at work?
 - g. Specific examples? (Interpersonal vs. task skills)
 - h. What skills are most important when working in groups?
 - i. How did RPC help you develop these skills?

9. Do/did you ever reflect upon your time at RPC?
 - j. Skills learnt?
 - k. Challenges it presented?
 - l. How to work in teams?

Section #5: Thoughts for current University of Birmingham RPC students

10. In the current climate do you think sending students to RPC is worthwhile?
 - a. Why/Why not?

11. What advice would you give to students who want to get the most out their RPC experience?

12. What advice would you give to students who want to transfer their teamwork skills learnt at RPC to their university degree?

13. What advice would you give to students who want to transfer their teamwork skills learnt at RPC to the work place?

*****Recorder Turned Off*****

Section 6: Closing

I would like to again thank you for participating in this interview and remind you that any comments that you made will remain confidential and for research purposes only.

After the interview has been transcribed word-for-word, would you be willing to review and confirm that it reflects what we discussed today? At this time, you will have an opportunity to make any edits or clarifications you think are necessary to the interview transcript. By verifying its accuracy, you will help ensure the quality of our research and establish that the data is credible for publication purposes.

- Yes
- No

If so, what format would you like to receive this transcript?

- Hard copy (by internal mail)
- Electronic copy (email attachment)

General Reflections about the Interview/Interviewee:



APPENDIX 2.4. Interview protocol: Academic staff perspective

Factors affecting the transfer of life skills from an outdoor pursuits setting to academia

Interview Guide - Academic Staff

Participant ID Number ____ / ____ / ____ - ____ D M Y # (of siblings)

Date: _____

Time Began: _____ Time Ended: _____

A. Age: _____ Years

B. Gender: Female Male

C. Position Lecturer Senior Lecturer Reader Professor

Other: _____

D. Years of experience teaching UG/PG students (including current year):
_____ Years

E. Member of Higher Education Academy No Yes, as Associate

Yes, as Fellow

F. PGCert completed No Yes, Module 1 only Yes, Complete

Section #1 (Not Recorded)

Thanks for agreeing to participate in this interview.

The purpose of this study is to gain a better understanding of factors affecting the transfer of life skills from an outdoor pursuits setting to academia.

So that I do not miss any of your comments, I would like to video and audio record our discussion. I have asked your permission to do this, as it will make our research work much easier. I should point out that your contribution will be anonymous and kept confidential, and that any published research will contain changed names.

The interview will last for approximately **one hour**. During this time, I would like to explore a number of issues on this topic. If you have any questions about the research project I will be more than happy to answer these at the end of the session.

***** Recorder Turned On *****

Section #2: Opening Questions

1. Please could you introduce yourself and explain your staff position at the University of Birmingham.
2. How many times, including this one, have you accompanied students to the Raymond Priestley Centre to attend an outdoor pursuits course?
3. What is your role as a staff member while at the Raymond Priestley Centre?

Section #3: Key Questions

4. What are the main reasons your School brings students to the Raymond Priestley Centre?
 - a. Probe: Does this happen on an annual basis?
 - b. Probe: Are these reasons made explicit to the Centre when you book the course?
5. From your perspective, what do your students learn from their participation on the Raymond Priestley Centre course?

- a. Probe: Are there any other benefits for the students (e.g., social, psychological, health)?
 - b. Probe: What changes do you notice in your students after they return from the course? (If more elaboration is needed, ask “Could you give some examples?”; You might need to bring this question back to the “learning benefits” if interviewee is focusing mostly on social/personal benefits).
 - c. Probe: Do certain types of students seem to benefit more than others? Why do you think this is the case?
6. From your perspective, to what extent are students able to transfer what they learnt on the Raymond Priestley Centre course back to their degree course?
- a. Probe: What opportunities do they have in their degree course to apply what they learnt?
 - b. Probe: What aspects of what they learnt seem to transfer (e.g., specific skills)? (If more elaboration is needed, ask “Could you give some examples?”)
 - c. Probe: What factors do you think affects whether student transfer what they learnt or not?
 - d. Probe: What specific attempts are made by the School to help students make the transfer?
7. Does your school set specific learning outcomes for the Raymond Priestley Centre course?

If the answer is yes, ask:

- a. Probe: What are these learning outcomes? Would we be able to have a copy?
- b. Probe: How are the students made aware of these learning outcomes?
- c. Probe: How are these learning outcomes formally assessed by the School?
- d. Probe: To what extent do you think the students achieve these learning outcomes? How do you know?
- e. Probe: Why is an outdoor pursuits course chosen as the way to achieve these learning outcomes in your students?

If the answer is no, ask:

- a. Probe: What is the reason for not having learning outcomes?
 - b. Probe: How do you think learning outcomes would be beneficial to the students?
8. What do you think the role of an outdoor pursuits course should be in Higher Education?
- a. Probe: How important is an outdoor pursuits course to the educational experience of students?
 - b. Probe: Is the Raymond Priestley Centre Course good value for money?

Section 4: Ending Questions

The interviewer provides a brief summary of the aims of the interview

9. Is there anything we have missed?
- a. Probe: Would you like to raise anything else at this point?

***** **Recorder Turned Off** *****

Section 5: Closing

I would like to again thank you for participating in this interview and remind you that any comments that you made will remain confidential and for research purposes only.

After the interview has been transcribed word-for-word, would you be willing it to review and confirm that it reflects what we discussed today? At this time, you will have an opportunity to make any edits or clarifications you think are necessary to the interview transcript. By verifying its accuracy, you will to help ensure the quality of our research and establish that the data is credible for publication purposes.

If so, what format would you like to receive this transcript?

- Hard copy (by internal mail) Electronic copy (email attachment)

General Reflections about the Interview/Interviewee:

APPENDIX 2.5. Interview protocol: Instructor perspective

Factors affecting the transfer of life skills from an outdoor pursuits setting to academia

Interview Guide - Instructors

Participant ID Number:				
Date of birth:	<input type="text"/>	<input type="text"/>	<input type="text"/>	# (of siblings) <input type="text"/>
	D	M	Y	

Date: _____

Time Began: _____ Time Ended: _____

A. Age _____ Years

B. Sex: Female Male

C. Ethnic group: White British White European White Other
 Mixed Asian or Asian British Black or Black British
 Chinese Other ethnic group

D. Current Position: _____

Trainee Full time Part time Contracted

E. Years working at the RPC (including current year): _____ Year(s)

F. Years spent instructing outdoor pursuits (including current year): _____ Year(s)

G. Years spend instructing team skill activities (including current year): _____ Year(s)

H. Highest academic qualification: GCSE or similar A-level or similar
 Graduate degree Postgraduate

Section #1 (Not Recorded)

Thanks for agreeing to participate in this interview.

The purpose of this study is to gain a better understanding of factors affecting the transfer of life skills from an outdoor pursuits setting to academia.

So that I do not miss any of your comments, I would like to video and audio record our discussion. I have asked your permission to do this, as it will make our research more accurate and easier to carry out. I should point out that your contribution will be kept confidential, and that any published transcriptions will not contain your name.

The interview will last for approximately **30 minutes**. During this time, I would like to explore a number of issues on this topic. If you have any questions about the research project I will be more than happy to answer these at the end of our discussion.

*******Recorder Turned On*******

Section #2: Opening Questions

1. Please could you introduce yourself and explain your position at the Raymond Priestley Centre.

2. How regularly do you instruct students at the centre?
 - a. Probe: Do you have any activities you specialise in or are you an instructor for all the activities?
 - b. Have you had specific training in facilitating group work courses or leading reflections?

3. How would you describe your style of instructing?
 - a. Probe: To what extent do you stick to a fixed session plan or do you change your plans during the session?
 - b. Probe: To what extent do the students determine the activities and how they do them?
 - c. Probe: Can you give any examples?

- d. Probe: How do you think this affects the students learning experience?

Section #3: Key Questions

- 4. From your perspective as an instructor, what do students generally learn from their participation at a Raymond Priestley Centre course?
 - a. Probe: What specific skills do students learn?
 - b. Probe: What about teamwork skills?
 - c. Probe: Are there any other benefits for the students (e.g., social, psychological, health)?
 - d. Probe: Is there something about being in an outdoor pursuits setting that makes it better than other settings?
 - e. Probe: Do certain types or groups of students seem to benefit more than others? Why do you think this is the case?
 - f. Probe: What advice would you give students on how to maximise the benefits they get from the course?

- 5. To what extent are you aware of the schools' objectives of their particular course?
 - a. Probe: To what extent do you think the students are aware of the course objectives?
 - b. Probe: Do you think it is important for this to be explicit?

- 6. What changes, if any, have there been to the courses during your time at the centre?
 - a. Probe: Can you give examples of how this has changed the course?
 - b. Probe: Has the change been more to do with the aims of the course or the method of delivery?

- 7. These courses aim to develop skills that can be transferred from the Priestley centre to other environments such as back at university or in employment settings. What, if anything, do you do as an instructor to encourage this transfer?
 - a. Probe: Do you have any suggestions for what the centre or the schools could do to aid this transfer?

Section 4: Ending Questions

- 8. Is there anything we have missed?
 - a. Probe: Would you like to raise anything else at this point?
 - b. Are there any questions or topics you would like to return to before we finish?

*****Recorder Turned Off*****

Section 5: Closing

I would like to again thank you for participating in this interview and remind you that any comments that you made here today will remain confidential and for research purposes only.

After the interview has been transcribed word-for-word, would you be willing to review and confirm that it reflects what we discussed today? At this time, you will have an opportunity to make any edits or clarifications you think are necessary to the interview transcript. By verifying its accuracy, you will help ensure the quality of our research and establish that the data is credible for publication purposes.

If so, what format would you like to receive this transcript?

- Hard copy (by internal mail)
- Electronic copy (email attachment)

General Reflections about the Interview/Interviewee:

APPENDIX 2.6. Detailed thematic map

The course outcomes: A detailed thematic map, showing theme names, definitions, and example quotes from Chapter 4

Kirkpatrick level	First level themes	Second level themes
<p>Reaction How satisfied students were with the outdoor adventure education (OAE) experience.</p>	<p>Affective A positive emotional response to OAE. <i>Student</i> – “I wish I could come back again. But it’s only a once in a lifetime experience” <i>Alumnus</i> – “I think pretty much everyone that I knew that went with me to [OAE] said they had a great time.” <i>Academic</i> – “At the end of the day when they get back they all say ‘that was good’. Even if on the way down they weren’t too sure.” <i>Instructor</i> – “people have been scared and intimidated by the experiences but they’ve finished it and gone ‘that’s brilliant!’”</p>	<p>Location A positive reaction to the environment and the centre. <i>Student</i> – “it’s a good day, I like the environment, I like the centre, the facility and the lake as well.” <i>Alumnus</i> – “The place was amazing, that was the first impression I got. It was very good to do it in a different place.” <i>Academic</i> – “Seeing another part of the UK which they may not have otherwise seen ... that’s an additional benefit.” “seduced by the lake or the scenery or the surroundings.” <i>Instructor</i> – “it can open up a whole different world to them. It still surprises me the number of people who haven’t experienced an environment outside of their own particular sort of home environment and getting out and seeing a different place.”</p> <p>Activities A positive reaction to the activities. <i>Student</i> – “I’ve had a really good time, I’ve done some really enjoyable activities” <i>Alumnus</i> – “I remember the activities quite well ... A lot of them were kind of physical activities so working as a team to complete an obstacle course, ropes; for example, like ropes up in the trees, we build a raft and spent a day orienteering so rowing and then walking around ... it was really good fun.” <i>Academic</i> – “Canoeing—some of the kids [students] this is a really fun activity and also we have a lot of foreign students who are quite frankly scared to go on the water—and so giving them the opportunity to be on the water cause if you grow up in some countries you don’t have this opportunity” <i>Instructor</i> – “you get them up on the high ropes and they hate heights and you think okay just get up on the tower and see how you feel, and then all of a sudden they’re bombing around</p>

the course and they're back there and they're shaking but they're just so excited that they've challenged themselves."

Social interaction

Students enjoyed having an opportunity to socialise with each other.

Student – "I found my experience at [OAE] very exciting, interesting, enjoyable, especially as I was with people from lots of different nationalities, I got to work with them ... I make good friends with them."

Alumnus – "I quite like meeting new people so it was kind of wholly enjoyable from that aspect."

Academic – "there is definitely a high degree of socialisation that goes on ... they're just happy ... They've got photographs, they've got videos ... it's all up on the social sites as well."

Instructor – "one of the evenings at the end of Ramadan they [Muslim students] cooked a meal for the whole group. And yeah I think that's really something, like that's exactly what you want, you want everyone in the group to feel like we're here as a team, we're here as a posse and we've got to look after each other. And they felt so comfortable with the group of people that they were ... they wanted to bring the group into that kind of cultural kind of realm and introduce them to that and that's really heart warming to hear that that goes on outside of activities, you know not just during the activities."

Instrumental

A positive cognitive response, whereby attending OAE is considered advantageous.

Student – "I have found it very beneficial"

Alumnus – "I definitely think its worthwhile doing"

Academic – "There is no way he [head of department] is going to make us chop [OAE]... It's much too valuable"

Instructor – "having been

Perceived learning

A belief that students learn a lot from OAE.

Student – "it's been something that we have all learnt a lot from"

Alumnus – "Yeah I think definitely it feels that we improved [during OAE] and we learnt in [OAE]."

Academic – "[OAE] does what we want it to do"

Instructor – "if you're persistent enough then you can really learn something about yourself"

Developing groupwork

OAE was a useful method for developing groupwork.

Student – "I think it is a good place to practice my group working abilities with the other

here for a little while and realised a whole new set of things that outdoor education can give to people, like to do with the team building and the communication”

people, to, to, how to communicate with the other people in a group.”

Alumnus – “I think it's one of the best things about the course and it translates into sort of a practical experience, a sort of practical routine because there's no lab [back on campus] where you can demonstrate teamwork, there's no better lab than [OAE]. Teamwork and team skills and social skills and whatnot.”

Academic – “you put two people in a canoe and they work better together in the canoe. A canoe is a wonderful thing to teach teamwork”

Instructor – “Having been here for a little while and realised a whole new set of things that outdoor education can give to people, like to do with the team building and the communication”

Perceived long-term benefits

Perceived benefits for university and employment.

Student – “Just getting to know people, improving your social skills, I think that would help, especially groupwork at the University.”

Alumnus – “I don't think we would have had anywhere near as much success either in this [academic] project or other projects if we hadn't gone on [OAE]”

Academic – “I think the companies that came forward and said we need to do x y and z to prepare them for the working world-- this does that”

Instructor – “talking about transferable skills, all the things that happen out there on a canoe session when people are trying to swap over canoes and they have to work as a team to do that and things like this, all those things that are happening there are happening on research projects, they're happening in offices across the country, they're happening in football teams and the outdoors has so much to offer people in that kind of way.”

Value for money

The course outcomes are more valuable than the financial investment.

Alumnus – “it's a ridiculous opportunity to pass up on. Because these courses cost a fortune when you try to do it outside of university, you know, you're away for a week ... they cost thousands.”

Academic – “We are convinced it is worth more than the cost.”

“Having experience in the private sector ... It may appear an expensive headline figure to many educational establishments. But when you compare-- when you break it down to a per head costs and compare that to what you would be paying at more corporate focused outdoor centres it is very good value for money.”

Instructor – “I think when you look at what other people are charging. For example if you wanted to stay in a youth hostel [nearby the centre]. You could go and stay in the youth hostel for the same price that it costs to stay here, but you’re just staying in the youth hostel. So you haven’t got all the other things that we’re offering in terms of activities and learning skills, opportunities, all that sort of stuff.”

Learning

The extent to which students acquired skills, attitudes and knowledge from pre- to post-OAE.

Skill development

Becoming more proficient at performing a groupwork behaviour/skill.

Student – “the exercise built up our teamwork skills”

Alumnus – “there were obviously hard skills, you know, specific skills that you learnt and also all the soft skills that come with it with the teamwork and communication ... how to improve our teamwork”

Academic – “the psychological side of it as well sort of increases self confidence and social skills”

Instructor – “I’ve seen people come in here who are timid ... because of an awkwardness with their kind of social skills ... But then you see over time that they just flourish.”

Leadership skills

An improved ability to lead and manage group members.

Student – “I learned how to be a leader, or how to lead a group of people to work, and to achieve”

Alumnus – “I certainly wasn’t really aware of how to draw out the strengths that people have and I think that is something that those sorts of courses do teach you.”

Academic – “Other skills reported is leadership -- the program doesn’t specifically focus around leadership because that’s -- we have decided not to -- but they talk about having the opportunity to lead or to emerge as leaders within their groups and find that they can or cannot do it”

Instructor - “we try to emphasise and try to get them to learn are things like cooperation, empathy for one another, which are kind of tied together ... could you maybe try being a leader if you’re a bit shy, which I think the outdoor activities that we do are a perfect vehicle for that.”

Communication skills

Improved ability to share ideas.

Student – “The most important thing that I’ve actually learnt is communication skills ... being able to actually communicate with other people

in our team.”

Alumnus – “effective communication. So listening, being able to listen, knowing when to speak up”

Academic – “Based on feedback we collect, the reported learning is based around communicating effectively in teams.”

Instructor – “by the time we’ve got to the third activity you’re noticing that they’re picking things up and you know they may be not talking over each other or you know they’ve become better”

Cooperation skills

Improved ability to promote synergy in a group through collaboration and conflict resolution.

Student – “I learnt how to work with a team ... efficiently and effectively”

“You will know how to get on with your team members, how to work as part of a team and how to collaborate with each other. I think those kind of skills are what we call the transferable skills that can be transferred to be used in your practical job I think.”

Alumnus – “I learnt about how to work with different types of people.”

Academic – “in either structured or unstructured groups they would be able to perform, possibly better in some way or another”

Instructor – “how to deal with, not necessarily conflict situations, but how to deal with other people’s opinions ... they’ve got to come to meet a middle ground somewhere”

Task management skills

Improved ability to plan and foresee barriers, use initiative, and utilise available resources to solve problems

Student – “I learnt from these activities, maybe you will say you can do this activity in one hour but actually you can’t. That is like you do the exam revision and you said I can finish the revision for this course in three days but actually you can’t ... don’t be too confident about yourself.”

“using my initiative and then actually trying to solve problems”

Alumnus – “we didn’t quite follow the time schedule because we thought we still had a pretty long time afterwards ... we suddenly

found that we didn't have any time left for us to return so we had to move faster ... we had to think forward before we do things and think further so that we can keep everything control of time"

Academic – "it should have taught them something about time management, even project management"

Instructor – "the ability to sort of problem-solve, if you like, because they'll be set challenges which make them think"

Attitude development

A change in feelings/emotions towards groupwork

On-going change

Students develop an appreciation for the need to continue to work on, and improve, their groupwork skills/behaviour.

Student – "I need to learn to be more confident and to increase my English to express my ideas and be more, be more strong in the team."

Alumnus – "obviously I learnt things [during OAE], but I don't think you... I think you can say you're good at teamwork but I think you constantly evolve in that area."

Academic – "it should be gradual change-- you can't change the behaviours overnight-- what we hope we'll do is just let them recognise where they are"

Instructor – "it may not change them immediately, I think you have to be realistic about what a four day programme can achieve, but it may well challenge them and it may well make them think afresh. That's no bad thing if it starts a process of change then, all well and good."

Valuing others

Students see the value in working with others, being more tolerant and appreciating individuality.

Student – "working in groups, it's not really, it's way better than working alone because when you are working in groups you have different ideas from different people which you wouldn't have and this helps you, helps your group in general."

"Some people are more than they meet of the eyes. I mean you can't judge people by their appearance"

Alumnus – "I learnt to be a lot more accepting of different people's opinions."

“different people approach it in different ways and you have to understand what they are trying to do, I mean be a little patient and try to understand what their thought process is”

Academic – “your own norms of behaviour may be challenged and you are given alternatives and you soon realise that ok in this culture maybe I don’t need to behave in that way ... if you talk about male/female, in some cases males expecting to have to do more, more physical stuff and always wishing to support and help the females, in some cases the strong minded females put them straight. And that’s a learning experience for them.”

Instructor – “I think some people realise they don’t do a lot for other people. And so when they’re here and they’re asked to do the washing up sometimes that’s a shock to them because they don’t --. You know, that whole serving and having an eye out for other people and being thoughtful towards them often has, I don’t know, disappeared into a previous generation really”

Confidence

Developing feelings of confidence towards working in groups.

Student – “I would say that I definitely, definitely, definitely feel more confident when it comes to team building exercises.”

Alumnus – “It gave me more confidence to be able to say my ideas and stuff”

Academic – “I think they just become less shy”

Instructor – “it’s great to see those kind of light bulb moments when people go bloody hell I didn’t think I/we would be able to do that and you physically see it changing people, you know the old shoulders go back, the chin comes up.”

Knowledge development

Increased learning and awareness about different groupwork behaviours

Self-awareness

Increased awareness of own behaviour when working in a group setting.

Student – “it forces you into kind of a role that you might not be good at etc, it kind of helps you learn what you are good at and what you’re not.”

Alumnus – “when I had reviews people said ... I know you probably didn’t realise it but right then you were being quite negative or you know this kind of thing and I was like oh, that’s

interesting, I didn't know that about myself. So useful definitely."

Academic – "we give them the opportunity to become a little bit aware of who they are.

That's the main thing, it's the awareness"

"They learn not only what teams do and how they interact but how they interact and that's the key thing."

Instructor – "figuring out where you as an individual fit in that team, what positions do you find yourself comfortable in"

Effective task groupwork

Knowledge of goal directed and strategic groupwork skills and roles that contributes towards the management of the group, such as role allocation, leadership and how to communicate effectively.

Student – "[OAE] highlighted different things that you need to focus on like, communication, or like your team roles etc or structure or organisation and I think those sorts of things have really helped kind of make you realise, you know, how to, well how to obviously work better in a team, in a team working environment, but more specifically the factors of a team that are required, you know"

"it helped me to understand how to work in teams better and those things, focus, planning, execution, re-strategising"

Alumnus – "one of the things I did learn there was the fact that people have natural sort of almost like positions within a team"

"I became more aware of the differences in terms of communication and background and what it means to make communication more effective."

Academic – "we talk about team roles and the fact that teams need a mix of roles to succeed and realise they all have a role to play in what ever team environment they are in."

"Many report they realise how important it is to raise your point of view and to have your say and to contribute"

Instructor – "they get some degree of understanding about their own abilities but also the abilities of other people and what is sort of required for a team to work effectively. They get a better understanding of that; a team which just has one type of person in it wont be a particularly effective team but as soon as

they kind of realise 'well different people will bring different things to the table' and gaining that sort of understanding I think it really helps."

Effective interpersonal groupwork

Knowledge that an effective group requires trust, emotional support, cohesion and self-sacrifice for others.

Student – "This experience is very funny I think, it's the first task for our group and actually we did very well and we achieved the target very quick. But the problem is after we opened our eyes we found that there is a person missing ... and so although we have achieved the target very quick but we think we lose. So it occurred to me that we should have cared for everyone and don't be rushed into the success."

"as a team group, we should have open hearts to each other ... this will increase the relationship between the team members and after the increasing relationship between others, we can easily communicate during the work."

"If you want to get something, before that you needed to give something."

"I've realised that in a working group you need to trust your group members, you need to have trust, you need to believe in them."

Alumnus – "not everyone reacts well to just being told 'come on, you can do it', you have to kind of adapt your tone"

Academic – "They learn not only what teams do and how they interact, but how they interact and that's the key thing."

Instructor – "If they think anything that we've talked about here about being more considered, about listening to other people, allowing other people an opportunity, about being positive, being constructive. If they thought that none of that was of any relevance to them, then at some point they will come across a situation where they realise: 'Yeah – what I was listening to a week ago, two weeks ago, a year ago actually did have a lot of relevance'."

Implications of diversity

Learning about different cultures and how to work effectively in mixed groups.

Student – “you know some of the taboo’s, or you know some of the things that you should say or shouldn’t say, and you can also find some common grounds with people from different nationalities.”

Alumnus – “there were different nationalities so we always worked with different people from different countries so it was really nice because you understand better, work together as a team, as a group, different cultures and different ways to express yourself.”

“one really positive thing is some cultures are really sensitive and anything you may say, say a casual remark or a casual you know in asking someone to do something casually might be a mistake or being authoritative. So appreciating all that, cultural appreciation and getting work done out of different types of people, people from different cultures was something”.

Academic – “...communicating effectively in teams. So that’s a combination of language because we have a big international contingent – also appropriateness of communication – so what is appropriate styles, approaches, methods to use within a team.”

Instructor – “You’d get a group who were maybe speaking first languages, four or five different languages ... sometimes you know there’d be more Chinese students and they would speak in Chinese and try to explain points and things like this, but then they’ve got to take their ideas and communicate them to the rest of the group ... its like alright we can’t speak our first language, right how do we adapt to them, how do we explain to somebody who doesn’t speak our language either how we want things to go. And you know what; they displayed more or probably an equal if not more amount of all the best things of a team in terms of empathy and in terms of inclusion and things like this than any of the entirely English speaking groups. You know would that be the same in other activities that they take part in at other times on the campus? Probably not, you know, I find it difficult to see how they’d force themselves to do that or be forced to do that”

Behaviour	Transfer success	Transfer to academia
What changes	The degree to which learning affected	OAE benefitted students on return to higher education.

occurred as a result of OAE when students returned to university and/or employment.

students on their return from OAE.

Students – “Generally the skills can be transferred I think, so we can still apply the skills that we obtained at the [OAE] Centre to the [academic] assignments”

Alumnus – “Although you may be in a field directing people around with blindfolds on [activity during OAE], what you’re learning there actually can be applied to your work at university, it all comes in handy.”

Academic – “A few of the students that you see-- Definitely do-- And you can even see the change”

Instructor – “most of the time I think it does transfer [to higher education]”

Transfer to the workplace

OAE benefitted students when entering the workplace.

Student - “transfer for the job interview especially for the Assessment Centres. When you attend an Assessment Centre it is very useful for you to grasp these kinds of skills you have learnt in your teambuilding trip.”

Alumnus – “I don’t think I did [transfer the skills] back at Uni but I definitely do now I’m at work.”

“I could keep going on and on but yeah these are some of the things I think that are quite easily transferable from what I saw [during OAE] to what I’m doing on a daily basis.”

Academic – It does sometimes help very much when they are being interviewed for internships or jobs”

Transfer to personal life

OAE benefitted students in the personal lives.

Student – “I don’t need a group activity to apply these rules or skills. Even for some little things like I play sports, I play badminton with my friends and we always play double, so that is cooperation that I can use these skills or lessons or when I talk to my classmates or directors I learnt how to talk to people in those activities. I don’t think that we have to find something to apply these skills; it’s into our daily life.”

Alumnus – “Okay well in my personal life with friends say things... you know just like when you’re living in a shared house, in accommodation and stuff, there’s all sorts of possibilities for disagreements about bills or

cleaning duties or you know whatever and so yeah being able to explain to someone else who might... it might be a sensitive subject about something, if you're maybe accusing someone of being lazy or something like that, to be able to not get personal about it and explain the problem in a way that is kind of a little bit more objective and so they take it a little bit more objectively as well I think is a useful thing."

Academic – "There is one specific individual I can recall ... they reported a total lifestyle change ... in terms of eating, exercise, which they'd never done."

Transfer failure

Occasionally the outcomes found during OAE had no perceived effects on return from OAE.

Student – "I thought we'd end up working better than we have actually because before going I thought we'd... we haven't, since the thing, we haven't interacted that well as a group, so I thought we'd actually do better."

Alumnus – "the kind of work or the kind of research I was doing didn't involve many people, it was a lot of my own work. So I found that a bit difficult to apply all those learning points immediately after [OAE]."

"There isn't much difference [between those students who attended OAE and those that didn't] because we only have two days there and it will bring some benefits to us but they won't change us too much."

Academic – "some of the students don't follow everything through that they should."

Positive groupwork behaviours

Observed behavioural improvements in different aspects of formal/structured groupwork

Leadership

Improved leadership behaviours.

Student – "Sometimes when we're doing group work someone should stand out and take the initiative to... I mean to put a little more or a lot more effort than everyone else that can push the project forwards, otherwise the project will just stop there. Yeah that's how I experienced for my recent assignments, yeah."

Alumnus – "best skill would be you are able to listen first before saying something, you know especially when you're at the helm or when you're leading a team."

"In your job you're going to have different projects, different tasks and you need to be

able to lead it, you need to establish the milestones, the deadlines, you need to work with your team, to cooperate with your team to drive the performance of the team or the performance of the activities so yeah you can compare that activity in [OAE] with developing a project in your company. So yeah it's like to be successful as the leader is the same as doing an activity like at Coniston and doing a project, you can use all of that knowledge that you developed at [OAE]."

Communication

Improved ability to communicate, resolve conflict, and listen effectively.

Student – "I think maybe communication skills and how to talk with somebody maybe you are not familiar before and how to make friends with new people"

Alumnus – "I mean in terms of that specific skill that I said I picked up from [OAE], that's more to do with when there's disagreements about things."

Academic – "I think it's the talking and the listening ... they are much better at that ... that is what I observe."

Project management

Improved ability to manage work and time commitments and foresee difficulties.

Student – "Before I went there I think our project, I always think of the success, the prospect or anything good but now here I think of our project I think of anything that's bad, that would be difficult to cope with, that's a big change you know because we faced too much difficult situation there and I know that if I don't prepare for that its just a waste of time. Why not just be prepared so that will save you time."

Alumnus – "But yeah there were occasions when we would stand around and come up with an idea and just go for it straight away. And then afterwards when it hadn't worked, in the feedback sessions, I remember the bloke said, 'Well what could you have done differently? If you'd have just stepped back and made a plan and worked through it you might have realised that you weren't going to make it in that way'. So yeah actually thinking about it, it probably did have an impact on how I plan

things and how I organise.”

“I sort of went in [to my final year of study] with a very clear plan knowing all that stuff and was like, I will do this and then I will do that.”

Academic – “things like having individuals having handed in their first [dissertation] chapter, as they were nowhere near, and they credit attending the [OAE] program.”

Reflective skills

Increased engaging in reflective learning.

Alumnus – “that sort of ability of taking a moment, taking a step back and looking at the situation but also thinking am I reacting here like I should or am I just letting other, sometimes maybe negative things, come into this. So I mean like my own judgements and my own preconceptions.”

“Being able to take that step back and look at the situation and think am I just in a bad mood right now which is why I’m thinking that or is that actually the situation.”

Identifying roles

Students were more skilled and strategic at identifying others strengths and assigning appropriate roles.

Student – “Find out the individual’s shining points. Like we divided our assignments into different parts, everybody is responsible for only one part. Yeah our group there is a guy from Tai; he is very good at calculating so we told him to do the calculating part. So I think that is the lesson we learnt from OAE.”

“before each task we’d know each other’s strengths and weaknesses ... we might say you’re good at building circuits so you can do that, whereas you’re good at coding stuff so you can go and do that.”

Alumnus – “that’s something I’m more aware of and I think if you’re aware of people’s strengths and weaknesses it helps you as a team.”

Working with diversity

Improved ability to work with people of different nationalities, backgrounds, and personalities.

Student – “in your [degree] course there are international students, some from Middle East and with culture differences, how to manage to get closer... there are some things you cannot

say and you can get this precious information from this precious experience.”

Alumnus – “you’ve got to take different people’s kind of moods and... their approaches are different so you’ve got to treat everybody differently and you can’t just have a general approach to everybody, you’ve got to understand what they want and what their strengths are and how to work with them. You can’t just go in and expect every team to be the same... So I learnt how to deal with people on an individual basis I’d say.”

“Yeah being able to speak to other people but when you speak to somebody, being able to get an impression of that person’s personality, how they like to deal with things, how they like to be spoken to. And that’s one of the things I got directly from [OAE] is the different characters that you’ll come across in a team and how you might treat one person in your team differently to another, not in a negative way but just because that will get you better results.”

Academic – “One participant reports having two different supervisors in different countries and being able to facilitate them coming together for the benefit of the overall research project.”

Improved social interactions

Students became more open, engaging and supportive of each other.

Student – “it’s quite nice to know new friends, and also I have the impression that we can work with each other very well, we help each other.”

“Before a lot of people were kind of like a bit sort of quiet and weren’t really sure oh should I go up and talk to them but obviously through that people kind of are a bit more open to each other and it’s lot easier to even just say hi to someone you recognise, which didn’t really happen before [OAE].”

Alumnus – “Some of the people that were more quiet at the MBA ... I think that they after that experience were more open and were less quiet”

“She was delivered to University every day in a taxi ... bearing in mind she lived less than half a mile away... but [after OAE] was quite happy to amble along the street and engage in conversation”

Academic – “when you go into a lecture with say 125 students, that’s why you need 150 handouts because Fred is taking one for Jane because he can’t see her and she is coming in the back and taking one for him. You know what I mean. They are all covering for each other and helping each other. I think OAE begins and improves on that”

**Perspective on
groupwork**

Students approach group situations with improved attitudes

Willingness to cooperate

Students see the value of groupwork and are more understanding, trusting and tolerant of others.

Student – “during this term I’ve found there is group work. At first they were just complaining about that work and I tried to be passionate and energetic”

Alumnus – “Yeah I think it made me realise that I should perhaps give people a chance before I immediately cut them off and kind of try and speak to them and say like I’m sure there’s a perfect explanation as to why you’ve not turned up to this meeting but in the future can you let us know”

“It doesn’t matter if I’m not the person to do that job, I can pass it to my colleague and I can trust them to do it because then my job is just to check in two hours that its done. So especially for me because I’m a sort of recovering control freak.”

Academic – “they could rely on other people ...I’d also like to think they also trusted us as well.”

Confidence and assertiveness

Students approach group situations with more confidence and feel more able to contribute their ideas.

Student – “I feel a lot more confident in working with different cultures, and different people”

Alumnus – “it taught me a new type of assertiveness which is the ability to say no”
“Yeah it definitely gave me confidence after that weekend, yeah.”

“I’m more confident in handling a team, I’m more confident in a group; I’m more confident in, you know, taking things up in a group”

Academic – “I would think they would possibly just feel more comfortable in a group”

“Other things include confidence. Confidence to contribute within their research environment. Confidence to speak to their supervisor. In asserting their own rights, in asserting their own needs and requirements.”

Effective project teams

When groups returned from OAE to work on academic projects they transferred what was learned to help groups function effectively.

Student – “And I applied it into my project myself this year, this robot

project. Every individual should have some task and he should be wholly responsible for that task. He should think about some emergency, if things didn't follow his way what we should do and do a lot of jobs. So everyone is important, just don't miss anyone, just motivate them altogether, so cohesion, get everyone together yeah."

Alumnus – "when you came to do the project together you already knew each other and you had an idea of how each other worked and what your strengths and weaknesses were."

"it definitely kind of helped us to get to know people better and then work better as a group in terms of dynamics."

Results
The impact that any changes in learning and behaviour have had on the student experience.

Degree

Integrated cohort

A more integrated and socially supportive peer group.

Student – "I'd probably say that there's definitely kind of slightly better integration. I mean you can notice it between some people; they kind of get along quite a lot better especially with some of the international students"

Alumnus – "I think it broke up your little friendship group that you'd made in the first year and it just made them bigger, it made the whole year almost integrate."

Academic – "Some of them discover friends they didn't think they were going to make."
"they just become less shy and feel more part of the cohort rather than somebody from overseas"

Degree success

OAE helped students to complete their degree course.

Student – "Yeah if we hadn't met them [during OAE] we would not have known them when we started working together which would have made the project a lot harder."

Alumnus – "I could talk to different people and knowing different people's opinions who think very differently to you definitely helped my grades I think."

"it's helped us to achieve our objectives in the MBA."

Academic – "in first years that some of them perhaps I mean their 18 and their not as mature as you hoped they would be... I always think of it as the last dash at instill some sort of maturity in them."

Employment**Employability**

OAE allowed students to demonstrate that they had worked on their groupwork skills during higher education, which was useful in the written application, group assessment and interview stages of recruitment processes.

Student – “it can improve our CV because teamworking is very important for looking for a job, the employer; they are looking for the employee who has a good experience about teamworking.”

“There will be a stage in the employment is competency questions and you should give the real examples that demonstrate you have the key qualities they look for. So when I was doing the telephone interview with employer I did bring... I did get so many examples from [OAE]”

Alumnus – “I did use examples from [OAE] and the problem-solving and the teamwork within my CV when I applied for the job, so it did obviously have quite a positive effect for me getting that particular position.”

“[OAE] definitely helped when they asked when have you worked in a team, when have you acted as a leader, [OAE] was able to give me those experiences”

Academic – “it does sometimes help very much when they are being interviewed for internships or jobs because if employers heard about it. And they probably have they do things like ‘Did you go to Coniston’ and it’s sort of an easy way to get a student talking and whatever.”

Instructor – “So if they’ve come across in the interview or have been able to cite examples when they are asked in interview of things to do with their personal character then people will employ an attitude.”

Job performance

OAE gives students the skills required for a successful transition into the workplace.

Student – “they’re all skills you’d obviously want to bring into employment like teamworking and things like that”

Alumnus – “turned out to be quite useful in my job.”

“going about the job yes it’s helped me a lot.”

Academic – “I think the companies that came forward and said we need to do x y and z to

prepare them for the working world-- this does that-- this helps employees-- so yeah it's important-- I mean I wish I had a course like this when I was younger"

"It's a piece of the puzzle to make good technical managers"

Personal**Personal development**

OAE helped students develop as individuals with broader skill sets.

Student – "I think I have developed a lot"

Alumnus – "I do really think that the experience definitely has changed me."

"I'm sure it helped develop who I am"

Academic – "we've positioned it within a module we call Professional Skills so what we're saying is this outdoor pursuits course provides you with the sort of skills you need to successfully be in the profession"

Memorable experience

OAE added to students' overall satisfaction with their university experience.

Students – "It's a very good experience and memory of our life."

Alumnus – "I'm glad I did it, I'm happy and I think it completes the experience from [university]."

"It was quite an intellectual weekend, if you think I had four years at University, if you think of all the four years I had I do, I quite clearly remember certain aspects of that [OAE] course so they obviously did stick in my mind."

Academic – "you talk to most alumni about the MBA and it won't be long before [OAE] comes up.' As part of what they remember, and ninety nine point nine percent, it's fond memories."

"They'll all be around a fire, they've lit it themselves. I took them into [the local town] to get some supplies. And they're just happy. And that's an experience they will never forget."

Instructor – "The National Student Survey has a lot of good feedback from students that have been here saying that it stood out within three years of studying at Birmingham. They may have been here for three or four days and it's one of their top three memorable things. So it obviously made an impact on them."

APPENDIX 2.6. Continued

The processes: A detailed thematic map, showing theme names, definitions, and example quotes from Chapter 4

Kirkpatrick level	First level themes	Second level themes
Reaction & Learning	<p>Learner characteristics The learning experience depends on the individual having desirable attributes. <i>Student</i> – “it depends on the person as well. You could tell like some people kind of got more out of it than others.” <i>Alumnus</i> – “it’s all about having the right attitude” <i>Academic</i> – “I suspect as individuals they get a different amount from it.” <i>Instructor</i> – “it’s very much up to the students, it’s very much up to them to approach everything here in the best mindset.”</p>	<p>Recognising opportunity Students need to be aware of the opportunity to learn and the potential benefits for future experiences. <i>Student</i> – “I would recommend to be prepared, so kind of think about your teamwork skills, the skills you already have and the skills you want to practice during the whole course. If you take that in your mind during doing those activities to try to practice as much more skills as possible I think you will benefit more yeah.” <i>Alumnus</i> – “I can see like this course is very valuable but it might be a hard time to convince students to take it or take it seriously as well because they might not see the relevance but I think it is very relevant ... I don’t know, I think probably the reality of job hunting and getting a workplace, that experience makes me feel it’s very relevant to pick up those skills but how you communicate that to students I don’t know.” “sometimes hard for a student to see the value in these things” <i>Academic</i> – “those who take it kind of seriously will learn more” <i>Instructor</i> – “You definitely notice that if a student kind of believes in the course that they’re doing and believes that being here is for their benefit and then they seem to get more out of it ... some students are really either they don’t understand why they’re here or you know that kind of thing and then you notice that they don’t necessarily get as much from it because they don’t take part as such.”</p> <p>Engagement Students need to physically embrace the challenge, push themselves, be persistent and make an effort to be active participants in OAE. <i>Student</i> - “I’ve done a lot of things that I’ve never done before, just facing my fear of heights and getting out there and doing</p>

different things”

Alumnus – “I think to get involved because at Coniston they never forced you to do any of it, it was all optional but they encourage you to do it all. You could opt out, like you did not have to do high ropes if you didn’t want to. So as long as you get stuck in you will get a lot out of it I think.”

Academic – “If they engage they achieve quite a lot.”

“We’ve had extremes where physically a particular student couldn’t do many, if not most of the activities. I tend to find there are two reactions: One, I can’t do that, and therefore I’m not going to, and therefore I’m not going to be any part of any of it. The other reaction, which I respect, and I can think of one particular student a couple of years ago, who was simply physically too big to do most of the low ropes course, but he took on the role of motivating and encouraging the rest of his team even though from the sidelines. And that really impressed me because he was adapting and saying ‘well I can’t actually be part of the exercise but I can still be part of the team.’

Instructor – “I’ll have an idea about what I want to get done in the day but it’s their willingness to follow me.”

“It’s so easy to give up, but if you’re persistent enough then you can really learn something about yourself.”

Openness to experience

Students need to be curious and adventurous and absorb the new experiences and new learning.

Student – “think, not just enjoy, to think after each activity, to feel it”

Alumnus – “There’s always a mix of stuff which isn’t relevant and stuff that is relevant so I kind of approached it with an open mind just to sort of look out for the stuff that I could take and use and kind of ignore the rest.”

Academic – “those who are fairly adventurous will learn more”

“It’s hard to self reflect if you don’t have that curiosity, if you don’t have that curiosity level you’re not going to push it more”

Instructor – “they might be interested in some of the technical aspects of things, but m
“A good group for me is a group who are all

really just in tune with the whole experience and they have an open mind to it because mostly they've never done anything like this before so hopefully you want them to really want to explore their possibilities.”

Preparation

What is done before a course to ensure it meets the needs of the attendees and that the attendees are in an optimal mindset for development

Needs analysis

The activities, course objectives, and level of challenge need to be aligned with the group of students taking part.

Student – “I gained a lot because I think this program is carefully thought out”

Alumnus – “everyone who does those courses, they'll have a different expectation of it and different motivations to do what they do and I think the course should be tailored to those individual motivations.”

Academic – “I think the MBA is going to be much more overt about ‘these are the learning outcomes that will happen.’ And the MSc will be more about ‘well it's a nice, fun, bonding weekend away.”

Instructor – “it's good to know what people are after or what their school wants them to experience so you can use your style of instruction to emphasise those certain qualities ... otherwise we're guessing what they want, or they're guessing what we can provide. So there has got to be a discussion”
“Another factor that would attribute change would be appropriateness of activities for the group.”

Priming attendees

Creating an optimal mindset before students arrive. This is achieved by providing information about why they are attending and the expected course outcomes and ensuring students do not have any concerns

Student – “before we go we don't even know what we are going to do there, we just know we are going to stay in a village, like a place, for three days and nothing else.”

“before I went I don't know what I'm going to do, I know nothing about it and they sent us a sheet about the things that you should take like swimming suits, those kinds of things. It really scared some of my classmates because they don't know what I'm going to do and some of them can't swim”

Alumnus – “To be honest at the beginning not many of us wanted to go, we didn't really know what it was.”

“I didn’t really know if it was going to be catered towards people who were not outdoorsy or anything or I didn’t know... it was the unknown, so it was lack of information I suppose yeah.”

Academic – “these people did not know what to expect ... We gave them a little talk first, but they didn’t actually know what it was because we didn’t have films and things like that. So when they came down the drive and saw the lake and then were asked to get out and go into a boat ... They were unprepared for it.”

“I might joke in the lecture that we go up to Coniston and you know give you a box of matches and you’ve got to build a bridge across a river so that’s you know I just leave it at that. I never specify exactly what’s going to happen because especially if they sort of worry or think about it too much when they get here.”

Instructor – “So yeah if you get a group that have been well briefed and its been sold to them, they just hit the ground running that little bit quicker, they’re hungry for it rather than hesitant”

“it slows people’s willingness to just relax and trust and throw themselves into something if they’re not quite sure of how and why the process is being made available to them.”

Group formation

Where possible, groups should be randomly allocated for students to experience working with a range of cultures, styles and capabilities.

Student – “I think probably the language barrier was the biggest difficulty at first, as we, this is the second day, so we’ve not really had many other challenges, apart from when we at first started working as a group we kind of didn’t know how each other would take what we were saying, we were kind of a bit hesitant, and now we’ve kind of realised... we just have to speak clearly to each other and we’ve kind of gelled really.”

Alumnus – “I think that you know, really group with different nationalities, different physical capabilities, different genders and all these things it actually contributed to me learning for the team dynamic in a mixed group”

“I think that confidence grows the more different situations and different people and different experiences you have”

Academic – “Their sort of forced into interacting in teams of people who perhaps they wouldn’t normally sit with or talk to in a lecture”

Instructor – “it’s like alright we can’t speak our first language, right how do we adapt to them, how do we explain to somebody who doesn’t speak our language either how we want things to go.”

Learning context

Key factors within the environment that the course is conducted in.

Removal from norms

Taking attendees into a novel environment increases social proximity, alleviates distractions, disrupts previous hierarchies and segregations, takes attendees outside of their comfort zone, and makes learning more memorable.

Student – “we are not focused on study.”
“in the school we also have the team work but only to do the work and report and do the presentation. But here is different, we do a lot of different and more exciting activities.”

“it forced you to have to interact”

Alumnus – “when you’re in an academic situation you don’t have much chance to get to know people on different levels”

“I think that for me is a way to get people to engage and obviously that’s why people get sent [on OAE] in the first place because you can’t help but engage with it.”

“engineering is quite an intense degree and I’d say there’s quite a lot of sort of weird competitiveness that goes on within it and I think it was really great for the first thing that we did as a group to be at Coniston, you know and not in that sort of lecture room environment.”

“he would then lose the inhibitions and communicate orally simply because I suppose he didn’t feel the pressure as much.”

“[at university] we were quite active socially but again social activities in a particularly diverse cultural group can be - however hard you try to avoid it - exclusive.”

“drawing out those individuals who have skills that are not tremendously evident in the classroom”

Academic – They’ve worked very, very hard for six months. They’ve been under enormous pressure; they’ve got exams to come. And I think although some of them may not appreciate being bundled onto a bus in Birmingham with assignment deadlines, by the time they leave here, they get it. It’s made them relax.”

“it’s far enough away from [university] to seem like an adventure”

“Yeah and you need that unfamiliar context to shock them into teamwork-- If they are doing similar tasks that they do all the time they just get on with it-- if they are faced with a task they don’t know or they are not familiar with-- than that extreme brings out character traits”

“You take away a lot of the hierarchy because everybody has got stuck in and everybody is just as uncomfortable in the environment so it levels the playing field to a certain extent.”

Instructor – “They don’t really get to not be themselves; they’re engaged with the other people on their program all the time. Yeah ok you can wander off and there are breaks where they can escape -- but we’re not trying to make a pressure cooker situation of it all but they have to be far more genuine I think -- about who they are and what’s working and what’s not working for them”

“most people don’t do it or don’t do it very often [outdoor activities], so it’s a bit of an equalizer.”

“I think the fact that it’s a new novel environment just creates a lot of extra learning because it puts people outside of their comfort zone slightly so they’re either more aware of what they’re doing because their general perception is up because the environment is different and potentially challenging, which I think is a good place to be.”

“Having worked on some programs that are very similar in nature but delivered back in an academic environment, there’s a level of apathy that comes with participating in something new in an existing environment, it loses some of its kind of wow factor and specialness.”

Experiential

Opportunity to experiment and master new behaviours whilst receiving immediate feedback from instructors, peers and natural consequences. *Student* – “everyone got a chance to lead the group”

“it’s quite difficult. But I think it’s impressive to be able to do it.”

Alumnus – “it gives you the chance to experience different roles.”

Academic – “you can sit back and watch them fall in the water all the team building and all the theories come out.”

“It’s the challenge, it’s overcoming something. It’s falling in the water and realising you didn’t drown. So, probably the vast majority of people don’t overcome huge fears when they’re here but occasionally they will. How many of them have ever been on a seven mile walk? Not many I suspect, without signs, and GPS and --. Just, just a map.”

Instructor – “If they’ve constructed some device to go out on the lake and it’s a poorly planned, ill conceived operation the consequence is they will end up being in the lake and they’ll be soaking wet. Or you know if they’re trying to negotiate the ropes course and they don’t support their team mates properly then members of their team will be covered in mud at the end. So --. When we come to talk about that then you can ask the people who fell in the lake or off the crate tower --. I mean they’re all ok because it is all protected and stuff. You can ask them --. They can then say well: ‘I felt really let down by the rest of the team’. So the real consequences, something they’re able to go back and --.

The rest of the team usually feel bad about the fact that one of their team mates fell in the mud or ended up getting soaking wet.”

“people have the opportunity to take a leadership role, so I think that’s quite an easy one to transfer because then people have actually got evidence from here of what worked for them and what didn’t work for them, feedback they would have got from the group, feedback that they would have got

from us that they can then implement in the next situation.”

Range of progressive challenges

Activities designed to place a range of different demands on attendees, that become more challenging as the course goes on.

Student – “Well it was all kind of quite useful and they were all different tasks. I know people were saying like different tasks, they all had their individual sort of benefits that you gained and I know when we did a day long walk at the end, I think that kind of brought it all together and you had to use all of those skills in that, so they all kind of built up to that last thing”

“Well this first day was fine because everyone was just getting to know each other, delegating tasks and we just had 3 simple tasks so that was fine. Tomorrow when we’re doing the orienteering up the lake and and the land, it will be a lot more challenging... now we’re more comfortable with each other as a group, there will probably be some more conflict”

“one of our other members didn’t help with the washing up so I was rather annoyed, however, we have overcome it by assigning him other roles, i.e. bathroom duty so we worked round it and made sure everyone had their fair share otherwise it wouldn’t be very right”

Alumnus – “I’d say the chores were as important as the activities themselves because I was not used to the organised sort of chores that was going on there. And to do that on a large scale it took quite a lot of time and catering to you know to keep in mind that you need to serve a big group of 50 odd people sitting there so it needs to be on time ... so it was as important as the other activities themselves.”

Academic – “It just works, even if it was possible to take away the duty from the students I wouldn’t be in favour of it. I think it’s part of the experience of bonding in that team

and if there is going to be a problem, and there have been problems, to identify that individual and deal with him.”

“Because that task is outside of their comfort zone there is often a bigger potential for them to fall apart. Whereas I would expect any normal decent group to put in an [academic] assignment fairly easily”

Instructor – “If you give them all a blindfold it’s like them all being on a telephone conversation ... if they can’t see the reactions of the other people then that planning phase is very difficult for them. And they find it just takes a lot longer.”

“All the activities are geared towards instigating the same effect and that is to challenge and inspire and hopefully to change your mind or help you realise something about yourself which you didn’t know before.”

Social element

There needs to be a balance between time spent doing activities and down time for socialising and relaxing.

Student – “Because it was pretty exhausting after we did a whole day of hiking so we could play some of the games there at night and well I really liked that, I really liked that game ... That’s the time we enjoyed because we know each other a little bit more after the exercise ... the exercise built up our teamwork skills and this event got us to know each other more.”

Alumnus – “But yeah I mean from the bus trip to the courses, to the actual exercises but even just things like in the evenings, I mean we definitely went to the pub but I can’t remember whether we were supposed to have gone to the pub or not but we definitely did. I remember walking back in the dark and somebody actually tripping over a sheep... I think it helped with the bonding process.”

Academic – “He [the academic staff member] knows they have been out and about for 8 hours so he’s not going to give them 3 hours of lecture [in the evening]. He gives them enough lecture to reinforce what they’ve learned”

Instructor – “I’ve also seen groups come in that don’t organise any fun extra curricular

activities at all. You know we had one group who just had lectures afterwards in team building and things like this. Yeah it's good and it presses the point home a little bit more but I think there's definitely more scope should be allowed for fun things organised while you're here. You know you're in the middle of nowhere so you should really... there should be some kind of organisation for people to really enter into the sort of social spirit of things as well as the activities thing as well."

Support

The instructors, academic staff and mentors are needed to help students realise what they are learning and transfer it outside of OAE.

Student – "they [the instructors] are really friendly, they try to make me feel as, as ... belong as possible so I really appreciated that and, it was a good."

Alumnus – "They [mentors from the workplace] were the ones who said you know when you are in the workplace you can't just say 'stop doing that', you've got to be diplomatic"

"knowing the [academic staff] on a more personal level helped, so like helped me be able to approach them and say if you had a problem or if you needed ... like with my dissertation I picked the tutor who was on my [OAE] trip because I felt I could be quite honest and open with my thoughts and stuff." "You didn't have much of a chance to interact with them [academic staff]."

Academic – "they see that we're willing to be here. We're not in a double breasted suit, we haven't shaved that morning, and it's just seeing that you are a bit more human. You have a game of table tennis with them; have a game of pool with them. Difficult to quantify the benefit but I believe it's there."

"the representatives of a firm come along people from KPM and Deloits and PWC. The students find them very useful source of information."

Instructor – "they [academic staff] know probably better than the students do the course objectives, things that they're supposed to be here for. So they're there to help us reinforce those points and things." "some of the visiting members of staff are clearly very energised by experiencing the

environment themselves and are very active, they seem to be everywhere all at once and they're always talking to the students about what's just happened and helping to just reinforce those links back to the kind of real world. Which is great to see and others are... it almost seems that they're using it as a couple of days off, a couple of days away from the kind of pressure of the academic environment, which is great but also I think its also a slightly kind of missed opportunity as well."

"there's a link back down to University so they can actually see what we've done up here and which students have got involved and which students haven't got involved, how various groups have got on and so when they go down to University they can, maybe when a student comes to ask them something, they can kind of keep that conversation going down at University."

"Some lecturers come up and just sit in their room on their laptop you know, type on the laptop and see it as time to get some work done without interruption and some people see it as a bit of a holiday and go and head up The Old Man [hiking] or go and do something themselves and leave the students with us."

Guided reflection

Personal and group reflection should be encouraged before, during and after activities. It should be focused on how learning can be applied outside of the training context.

Student – "Before the activities the instructor told our group to write down all the things we think, we thought our group might need to have... And then after we finished the activities we went back to that room and take a look at the blackboard and the instructors asked us to think what we have actually achieved... we can learn stuff from this kind of process."

"I remember but after each activity the instructor gather our group and he have a book or a card with a red one and a black one so we will have to withdraw randomly one card and see whether its black or red and if its black we have to talk about weaknesses about teamwork and if red we have to say something positive about our work. And from that we have learned so much."

"she definitely did on each task say when you

go back and you're doing your project how will this help you and like asked us questions. And then she'd sum it up kind of thing, like you've used these skills, this will be good because you can do this on your project. So they did kind of relate it to our project and it does kind of make sense, it does."

Alumnus – "We got like a debrief each evening on what we maybe could have learnt in the day and how we could benefit from that in the workplace."

Academic – "continuously getting them to reflect. Maybe that's after every exercise. Maybe you suddenly stop in the middle of an exercise."

"They should be able to see the link between what they're taught [at university] and how it actually works when they are given a task"

Instructor – "maybe stop people even halfway through and go okay you know what just happened there, you know its that idea of freeze phrasing something and you can use that in the review"

"Everyone that is here has to have a degree and that's because we've been through that University, you can kind of relate to what they're going through. So we try to link back to the course they're doing."

"The activities are only a vehicle really, for the learning. And sometimes people get hung up on the success of the activity ... sometimes they do struggle to understand what made them successful. And then when they go and have another encounter with their project they haven't really learnt a lesson they can take away."

Enjoyment

Making the course enjoyable encourages engagement and learning and makes the experience more memorable

Student – "We are just having fun, so it is much more easier for us, for me to, to, join the group and I feel quite relaxed, so I think it's good things. And for me it's much more easier to open up through this kind of activity"

Alumnus – "I enjoy that kind of thing and also I went with my course friends that were close friends of mine, which was nice as well"

Academic – "I'm a great believer in laughter in the lecture room. Because you know what, they laugh about it, they remember it."

“if they don’t enjoy it, I gather people don’t learn when they’re not very happy”

Instructor – “Well I think that if fun isn’t in there then they don’t have an educational experience. They switch off.”

**Behaviour
& Results**

Learner characteristics

The personal attributes that make transfer more likely to occur.

Ability to generalise learning

Awareness of the similarities between OAE and the transfer environment.

Student – “going back to the University it’s absolutely another environment. So it is very difficult to compare what you gain ... So I think for me [OAE] is just a time for relaxing and playing and knowing the other people that’s all, not any things to do in the [academic environment].”

“I learnt from these activities, maybe you will say you can do this activity in one hour but actually you can’t. That is like you do the exam revision and you said I can finish the revision for this course in three days but actually you can’t.”

Alumnus – “have a team under me which has male, female, a pregnant lady, everyone and the team sort of expects equal amount of work to be done by all people which is clearly not possible. But I do relate to some of the things that I’ve seen. For example one of the big guys in my team was not able to do as well in the low ropes or whatever you call them. So I could relate that similar, not obviously similar but fairly similar situation with the pregnant lady in my team.”

“although it’s different environments, at the end of the day you’re all looking to try and achieve the same goal.”

Academic – “They’ve worked in groups for six months but doing entirely different things. And the responsibilities of producing a section of a report are very different to will you be there at quarter to eight to help us serve breakfast up? That’s quite a different notion to being part of a group isn’t it?”

“If you can think back and say ‘well I confronted it then.’ It really doesn’t matter that it’s a totally different task.”

Instructor – “That isn’t what their degree is going to be about. Building rafts or getting across muddy areas on our ropes course or whatever, but the skills they’ve used in terms of group working and problem solving and discussion of how to do things, and of

understanding a process and reviewing what they've done. All of those skills will transfer.”
“You know, they may have been constructing a raft out of barrels and planks, hopefully they see beyond that.”

Mindful and effortful practice

The ability to remember previous learning during OAE and recognise and seek out circumstances where it can be practised.

Student – “I don't need a group activity to apply these rules or skills. Even for some little things like I play sports, I play badminton with my friends and we always play double, so that is cooperation”

Alumnus – “I did make a conscious effort to remember it and actually practise using it afterwards. So I think if there's a way that it stuck after the course it was because I was kind of looking out for something like that.”

“if you keep practising something you just, you'll use it all the time then so it just becomes part of your repertoire really.”

“if you see that you can be a leader and you saw that you were a good leader why not to try to do that in your job or at the end of the MBA or in your personal life. So yeah try to make it the same thing that you did in Coniston in your life”

Academic – “Once these sessions are done to a student then it's done-- you know you move on and have other things you have to worry about.”

Instructor – “they've got to be looking for something. When they go back to their work as a student they've got to be looking for something”

Self-reflection

Continued practice of reflective learning to further develop and build on the learning during OAE.

Student – “you only discover the extent of this job only when you do similar work, i.e. you analyse previous experience and you can gain.... I have this memory and again extending from this memory I think I have developed a lot”

“Yeah I can remember those activities but with regard to skills, because I've never thought about it before, what I can remember is just those people and we do get a better relationship with each other, get to know more

about each other but with regard to skills I don't think I have particularly thought about it.”

Alumnus – “I remember that [learning during OAE] and how did you manage that or maybe if you made a mistake, how can you improve that mistake now, you know. So yeah always I can remember that and compare that with the experience that you are living now.”

Academic – “It's whether or not they click on this self reflection idea -- if they can do that and they take that on board and take on the concept that it's important”

“I mean most people don't want to do that. I mean self reflection is something that most people would rather not go through in life and just kind of fumble along as they are”

Instructor – “Then you start and get back down to University and do more learning and reflection and then you start to link it to what you're doing”

Transfer context

The transfer environment can be designed to promote transfer.

Opportunity

Learning is a continual process and students need to be given the opportunity to practice and further develop when returning from OAE.

Student – “I think we need to do more of these kinds of activities to get those ideas deeper inside our minds.”

“I think it's a long process and whether you have opportunity to work as part of a team or you have the opportunity to work in groups to finish one project. The more experience you have the more skills you will gain”

“they [academic staff] focus more on your individual study instead of group study.”

Alumnus – “[OAE] could be you know ahead in the [degree] course, you know it could have been a lot better for applying those things onto the course ... it was around April when most of the course was complete you don't have anymore groupwork.”

Academic – “When you're talking about a postgraduate degree in engineering or in the sciences it is an individual thing-- you do have to interact with people on the teams -- the work groups -- the post docs to get things done. But largely it is an individual type game. And with the masters students it is a bit late in their game for them to really implement much.”

“Because they're towards the end of the taught part, I suspect not very much in this

case because they don't really get the opportunity. They are not going to do much more team work."

"The third year gives them a group essay he's trying to build on the teamworking skills they got here at Coniston and he tries to evolve that into an academic thing by setting them group work to do"

Instructor – "I think there are quite a few courses which run at the end of the sort of academic year and whether that would be more valuable at the beginning of the year, I think they might go away with some great stuff but then it might be lost over the holiday period."

Challenge

Students need to be challenged in the transfer environment to use what they learned.

Student – "Well I remember what we have learned but I didn't know whether I should put it into practice because I don't think the situation in campus we need those kinds of skills to do things."

"I think because when we go to work then we will have to work with people we have never known before ... it will be more practical than in assignment at university when you choose a friend to work with"

Alumnus – "I think teamwork is invaluable in the job I do... you have to be able to communicate with so many different people in so many different ways, like phone, email, faxing... loads of different ways and you've got to be able to do it effectively."

Academic – "[Learning] may not come out fully for a month, or a year, or the next time they're in a really difficult situation."

"if you put them in more unlikely situations that's when they are more likely to recall whatever it was they got [during OAE] because [OAE] is an unusual situation and if they just go back into their academic mode of learning and how they behave with their peers colleagues, I don't think you would see much evidence of [learning] again."

Informal prompting

Students require prompting to help them remember and apply what was learned during OAE.

Student – "When we check out the photos, the

photos will remind us to remember all of the experience and the skills we learn I think”
“But I forgot everything, so it’s almost only until you pick up things similar that will remind you.”

Alumnus – “I didn’t [think about OAE] until I got this email [recruitment email] and then now I’ve been reminded of it, everything I do seems to be linked in. It just reminded me of what I’d learnt there. Because after three years I’d almost kind of forgotten parts of it”

Academic – “put some pictures up just to remind them what’s happened and then ask them—ok what have you done different—or what are they doing and how are they behaving differently since the return and ask for examples. If they are not doing anything differently then we ask then why is it ... has there been a barrier, or have they just not wanted to.”

Instructor – “it definitely helps to have some system in place whereby students are encouraged to think deeper about their experiences. There are methods of reflection where it’s like right, I mean you can reflect on the activity that’s just been but then reflection after reflection might reveal greater truths and might reveal something even further that you didn’t consider before. But if a student doesn’t have the environment or the instigation to do that they’re probably not going to do it themselves.”

“refer them back mentally or using pictures or video clips to when they were in the outdoor environment and just kind of get them to re-attach to either a behaviour or a feeling that they were experiencing here.”

“one thing I always like to do at the end of a course is to say you know why don’t you write a little email to yourself or put a message somewhere or write a letter to yourself about some of the things you’ve learned about yourself or about working as a team and draw on that at some stage in the future... trigger their memory later on you know if there’s this email that sits in your inbox or something that pops up in two or three months time.”

Formal follow-up

A follow-up activity, training session or mentoring would help students continued development and transfer of skills.

Student – “he did that [supported us] when we are in the Centre but after we come back the lecturer is finished so we can’t see him anymore.”

“the University should provide us more activities like she said and I think that the activities should be redesigned like we can amend the outdoor activities but we should add in some indoor activities and these activities should be specialised like four or five of us are from Business School, some indoor activities like... they should design like a business project for students who are from Business School.”

Alumnus – “The support was there on the weekend but I don’t remember anything in particular after the weekend.”

“I think activities, discussions, focused questions in a group environment upon return I think makes it more ... people are more inclined to engage I suppose.”

“it was just kind of expected that after we’d spent that weekend away that we would put the skills to use.”

Academic – “We don’t do enough [to encourage transfer]. I can’t put my finger on any specific strategy”

“If something was going terribly wrong [during academic groupwork] we can assist in that”

“We run a review session after each program. Which is 6-8weeks afterwards ... That follow-up session is specifically aimed at looking at impact. So we spend an hour—we have a bit of a review”

Instructor – “skills don’t transfer themselves, there has to be built into the system, i.e. at University, something that facilitates that to develop, that nurtures that”

Peer support

Individuals’ transfer is affected by the effort and engagement of other students.

Student - “I think it’s different in the nature of the activities because in the [OAE] Centre when everyone wants to try so they cooperate to make the team a success, but sometimes in assignments someone can be lazy and don’t want to do.”

“I think the situation here in the University and the situation in the [OAE] Centre is different because when you are there is someone watching your group, the instructor is

watching your group all the time and no one is like acting very bad in front of him. When actually we come back we're doing the robot project in the same group and two of our members just disappeared and we tried every way to get in touch with them but we failed all the time. So we have very limited human resources and we nearly not manage to finish our project so it's quite different."

"Well I don't know about them but I think the things they did [during OAE] compared to the things they did afterwards was much better because I think [during OAE] like when you did hiking you had to read a map and everybody was kind of just don't know how to read a map at first, so everybody had to figure out a way to do it, so its like something was chasing them, they had to do it. So then they are excited that potential abilities so... and under some certain conditions they might do it actually, they might actually have discovered a way or find a way to do things. But after we get back, because we can do the job on our own and they think we don't need their help and nobody's asking them to do it, so maybe they just chose not to do it and to have more leisure time playing other things."

Alumnus – "it requires group mentality and it's to a common goal"

Academic – "So you could design additional support networks in terms of reminders etc [to encourage transfer], but you know or maybe just even cohort support and I think in some cases where groups can stay in touch, they may well support each other to implement."

Instructor – "having the opportunity to kind of meet up again in those groups at a later stage after the [OAE] course might be of use and some students will do that anyway because they'll be working in project teams"

APPENDIX 3.1. Questionnaire scales (used in Chapters 5 and 6)

The groupwork skills questionnaire (Cumming, Woodcock, Cooley, Holland, & Burns, 2014)

Task groupwork skills = $(\text{Item2} + \text{Item4} + \text{Item6} + \text{Item8} + \text{Item10}) / 5$

Interpersonal groupwork skills = $(\text{Item1} + \text{Item3} + \text{Item5} + \text{Item7} + \text{Item9}) / 5$

Group work self-efficacy (McClough & Rogelberg, 2003)

Items 2, 3, 4, 6, 8, and 10 are reverse-scored. The items are then averaged to form a score for the scale.




Attitude towards working in groups (Chapman & Van Auken, 2001)

All items are averaged to form a score for the scale.




Course evaluation (Filak & Sheldon, 2008)

Both items are averaged to form a score for the scale.




Instructor evaluation (Filak & Sheldon, 2008)

Both items are averaged to form a score for the scale.



Course enjoyment (Ryan, 1982)

Items 3 and 4 are reverse-coded. The items are then averaged to form a score for this subscale.



Transfer intention (developed in Chapter 5)

The items are averaged to form a score for this subscale.

	Extremely unlikely				Extremely likely		
1. I intend to use the groupwork skills I developed during OAE when I next work in groups as part of my academic course.	1	2	3	4	5	6	7
2. I expect the groupwork skills I developed during OAE to benefit other groupwork experiences I will have as part of my academic course.	1	2	3	4	5	6	7
3. I plan to use the groupwork skills I developed during OAE when I next work in groups as part of my academic course.	1	2	3	4	5	6	7
4. I have planned how I will use the groupwork skills I developed during OAE for upcoming groupwork experiences.	1	2	3	4	5	6	7

APPENDIX 4.1. Additional questionnaire scales (used in Chapter 6)

Transfer effort (developed in Chapter 6)

The items are averaged to form a score for this subscale.

	Strongly disagree				Strongly agree		
1. I have achieved goals that I set myself after OAE to help me use the skills I learnt since returning.	1	2	3	4	5	6	7
2. I plan to use the groupwork skills I developed during OAE when I next work in groups as part of my academic course.	1	2	3	4	5	6	7
3. I still remember some groupwork skills I developed during OAE.	1	2	3	4	5	6	7

Transfer behaviour (developed in Chapter 6)

	Strongly disagree				Strongly agree		
1. I have used groupwork skills that I developed on the Raymond Priestley Centre Course.	1	2	3	4	5	6	7

Transfer results (developed in Chapter 6)

	Strongly disagree				Strongly agree		
1. My academic work has benefited from the groupwork skills I developed on the Raymond Priestley Centre Course	1	2	3	4	5	6	7
2. Other aspects of my life have benefited from the groupwork skills learnt at the Raymond Priestley Centre.	1	2	3	4	5	6	7

Transfer opportunity

Which types of groupwork activities have you been involved in during the last 12 weeks at University?

Academic: Group coursework/presentation
Lab/seminar groupwork Group study
Other academic groupwork _____

Non-academic: Work groups Society group activities
Group activities with friends
Other non-academic groupwork _____