THE IMPORTANCE OF EMOTIONS IN CREATING

LASTING IMPACT AND LEARNING

THROUGH EXPERIENTIAL OUTDOOR EDUCATION

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A thesis submitted in part fulfilment of

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ABSTRACT

The motivation for this research arose from my experiences in education outdoors and through conversations with colleagues and students, which suggest that the outdoors is a high impact learning space. People generally remember their experiences at outdoor camps fondly, in detail and with an element of satisfaction. There is some research to support this but most of it is not conclusive enough to support long term educational planning. This thesis is a research project on the long-term impacts of education in the outdoors. It is looking in particular at the learning of theoretical concepts in an outdoor setting using experiential teaching methods, which aim to stimulate high emotional engagement. The thesis is underpinned by a qualitative methodology using emergent theme analysis of the participants constructed memories and learning. The data collected was analysed using both manual and Nvivo techniques to search for emerging emotions themes. These were then unpacked further in relation to Scherer's Geneva Emotions Wheel. The research influenced the ongoing development and delivery of the engaging sessions. The research design used in depth interviews with 13 graduates from a course, which had utilised the engaging outdoor and experiential methods. The time since the participants had the experiences was between 1 and 15 years before the interview. The interviews were conducted in a way, which initially minimised any prompting of memory so that the participants' unsolicited narratives of their experiences and emotions at the time could emerge.

Some expected themes emerged resolutely in many stories, such as enjoyment, excitement and interest. There was also an observable difference between the interesting and enjoyment experiences, with interest being something that grew out of an enjoyable experience. It was remarkable that theoretical learning had been recounted as much as practical learning. An unexpected theme was the occurrence of negative emotions such as frustration and annoyance, but there was a strong trend of adapting to these with emotion regulation skills. A significant occurrence was the many vivid and strong memories of recalled experiences that had had a high learning impact, named in this thesis as "High Impact Learning Moments". These seemed to link both emotions and cognition into a memorable and deep learning experience. A model is presented to use as a reflection tool for all learning moments, as the data suggested that there is a strong connection between the emotions and learning. Conclusions are presented and recommendations for future research suggested. Finally, the exciting implications of embedding these engaging methods into practice is illuminated. This research lends further weight to the power of emotional engagement in learning experiences in the outdoors and is a small contribution to the growing body of research on the emotions and learning.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1   INTRODUCTION

Overall Aims

The overall aims of this study are to increase our knowledge of the role of the emotions in learning and to explore whether experiential learning in the outdoors can play a part in engaging the emotions in learning and creating lasting impacts. The main research focus is to investigate the self-reported memories of graduates, from a number of learning experiences on a specific tertiary course. The course is part of a polytechnic-based bachelor's programme on sustainability and outdoor education. The researcher will unpack the experiences in relation to emotional engagement in learning. The findings will create a platform and knowledge base for future research and practice.

Introduction and Background from the Researcher: Why I am interested in this area of research?

The rationale behind the project is that I have been using experiential methods both indoors and outdoors over the last 25 years, with positive feedback as measured by student evaluation summaries and sessions. This work has included traditional outdoor pursuits, but in the last 15 years, it has included the broader aspects of experiential outdoor education and outdoor learning such as awareness of self, society and of sustainability concepts. A further extension of my teaching has been my search for exciting and engaging teaching methods, set in an outdoor setting, in order to generate interest in theoretical material, which students could perceive as boring. Student feedback has portrayed these sessions as memorable and hence the sessions have become a prominent focus in my study

My teaching has included the teaching of theoretical educational concepts, through using a notion of place and the outdoor setting as an inspiring learning environment and through utilising experiential teaching methods. With these, I aimed to engage a learner's interest and emotions in the topic. Such methods and concepts find resonance with deep teaching methods, which have proliferated in the literature over the last 20-30 years, (Entwhistle, 1979; Biggs & Moore, 1993; Moon, 2005). These holistic teaching methods are prevalent in outdoor education and outdoor learning (Cooper, 1998; Knapp, 1998; Jarvis, Holford & Griffin, 1998; Higgins, 2000; Mortlock, 2000; Straker, 2004), and have strong links with experiential education (Greenaway, 1993; Schoel & Stratton, 1990; Schoel, Prouty & Radcliffe, 1998; Frank, 2001).

Deep teaching is conceptualized here as the style of teaching a teacher uses, to facilitate Biggs and Moore's (1993, p. 312) deep approach outcomes, for the students they work with. These can be

summarised as being relevant; having high conceptualisation requirements; involving metacognition; and resulting in enjoyment and investment of learning time from the students. This method has close parallels with recent findings in cognitive neuroscience about how the human brain operates, especially in relation to the emotions, curiosity, interest, enjoyment and engagement; and how deep teaching can activate a neural pleasure pathway (Gardner, 1983; Hannaford, 1995; Goleman, 1996; Caine, Caine, McClintik, & Klimek, 2005, Immordino-Yang & Damasio, 2007; Fischer & Immordino-Yang, 2008; and Allen, McKenna & Hind, 2012). Through my previous compilation of evidence for my teaching, which includes course evaluations, reflection sessions, student comments and my own reflections in a diary, I have come to consider that this is a very powerful teaching method. I have noticed that the learning resulting from this teaching method is frequently at a deeper level (as described by Moon, 2005; Biggs & Moore, 1993) and appears to be more long-term than other learning I have observed.   It also appears that values-based learning (Barnes, 2000; Higgins, 2000; Mortlock, 2000), aimed at attitude shift, which is a significant part of outdoor, environmental and sustainability education, may be strongly supported by these teaching methods. In this context, values-based learning is learning that engages a student in values based experiences which allow them to form their own values and to be aware of others values, and if relevant, to take action.

 I think this topic is worth researching because it will further knowledge on whether any of the educational methods that aim to engender emotions, curiosity, interest, enjoyment and engagement do actually enhance learning, and how this can apply in the tertiary sector. The research will explore if sessions designed to ignite these aspects have any lasting impact. It will allow for crystallization (Richardson, 1997) and commensuration of several research paradigms. These include postmodern constructivism in sociology/educational theory, positive psychology and postpositive cognitive neuroscience from the biological side of the learning spectrum. Usha Goswami (2004), states; "It seems timely, therefore to consider how we might implement our increased understanding of brain development and brain function to explore educational opportunities." It is believed our brains make neuron connections as a result of our experiences (Hannaford, 1995, Goswami, 2004) and our experiences in educational institutions are a significant part of this connection process. The outdoors provides a rich learning environment and time spent outdoors will contribute to the connection process outlined above. This research will provide insights into why the outdoors is an important learning space and it aims to support the place of education outdoors in regular educational practice.

The Emergence of the Research Exploration and Methods

This research is an exploration into the perception and memories of a group of learners who participated in an outdoor programme. This group of learners has spent a considerable proportion of their learning time in the outdoors. In order to gain insights into the participants' learning, this research explores emotional engagement. It does this by examining their retrospective perspectives of the impact on their learning, of their cognitive and/or emotional engagement in outdoor experiential activities. Their memories were obtained through narrative, reflection notes and semi-structured interviews. The underlying theme is to determine whether there was emotional engagement in the learning. For the purposes of this research, emotional engagement is defined as the immersion of a learner's feelings in the topic of study, (Hannaford, 1995; Immordino-Yang & Damasio, 2007) alongside their cognitive or behavioural engagement in the learning activities. Engagement is defined as active interest in a topic or activity (Cambridge Dictionary, 2016). The expectations of this research are that more positive emotions (Frederickson, 2001) like feeling happy and relaxed by being in an outdoor setting (Straker, 2004), or like feeling interested and curious due to exciting delivery in inspiring locations, (Kahu, Stephens, Leach & Zepke, 2015 p. 487) will be elicited from memory. However, negative emotions have also been recounted. There is research evidence that some anxiety is facilitative for learning (Carter, Williams & Silverman, 2008). In the environmental context anger may be a catalyst for improving eco literacy (Goleman, Bennet & Barlow, 2012). A small incidence of negative emotions did emerge during the interviews and these will be discussed. However, as an underpinning construct for the sessions to be explored was positive psychology, the interviews followed the threads on positive emotions.

Definitions of Terms

Each of the disciplines that inform this study have their distinct discourse and vocabulary. Terms used in this study are defined in Appendix 1.

A Brief Overview of the Purpose of each Chapter

The next Chapter (2) " Literature Review" presents a literature review of a broad range of connected literature from the domains of psychology, emotions, education, learning and experiential methods in the outdoors. It finishes with a detailed review of the models that have been used to support the analysis of the data.

Chapter 3 "Methodology" details the methodology, and includes theoretical underpinnings, research design and ethical considerations. Procedures are described including data collection and analysis methods, and authenticity is investigated.

Chapter 4 "Initial Findings" covers the results and initial findings and it is followed by 4 chapters (5-8) which provide a comprehensive synthesis of each of the emerging themes to reveal significant points of interest. All of these findings chapters present the results and discuss them in relation to the models and the literature. They all start with a table of recurring themes using a manual concept count and an Nvivo word count. They examine the observations according to the emotions experienced at the time, the learning that came out of the session and how the graduates are applying that learning now. Chapter 5 analyses the positive emotions including enjoyment excitement and passion. Chapter 6 analyses the negative emotions, which were evident including fear, boredom, apprehension, frustration and annoyance. Chapter 7 differentiates interest emotions from enjoyment emotions and further unpacks interest, curiosity, mystery and surprise.

The final analysis Chapter 8 " High Impact Learning Moments" reveals fresh insights on high impact learning moments and culminates with a model, which will aid reflection on these and other learning.

The whole thesis culminates in a conclusion (Chapter 9), which presents the importance and relevance of the findings, observes the strengths and limitations of the study and states recommendations for future research and practice.

CHAPTER 2   LITERATURE REVIEW

This review will bring together diverse areas of literature such as educational theories, experiential education, outdoor education, positive psychology, and cognitive neuroscience, all of which are defined in Appendix 1. These subject areas all make links to cognition, emotion and memory in learning situations in their discourse. The themes that emerged from the data resonated with this diversity in literature, because memory and emotions were involved during the recall interviews. Memory and emotions are studied in both psychological and educational fields. It is the bringing together of different fields of study that can result in the construction of fresh ideas and new applications.

Emotions and Learning

The study of emotion has evolved considerably over the last 30 years. One of the most important findings is that feeling, thinking and doing are all inextricably linked (Hannaford, 1995; Winston, 2004; Immordino-Yang & Damasio, 2007). Learning springs out of feeling, thinking and doing and has been defined in many ways. A simple definition comes from the Cambridge Dictionary (2019) and is, "The process of getting an understanding of something by studying it or by experience." This expands on the more dated view of learning, which was more about knowing something. Bloom extended this in 1956 with a taxonomy of learning, which included knowledge, skills and attitudes, the latter of these having subtle links to emotions. This was developed further and exemplified by the New Zealand Curriculum document (2007), which identifies a much broader range of learning encounters and teaching methods and including self management, which is emotion related, and elements of learning for the future. Contemporary New Zealand outdoor education literature highlights a contestation of terms around learning in the outdoors (Irwin, Straker & Hill, 2012) and extends the curriculum aims to education for a sustainable and more equitable future. All of these developments have lead to more acknowledgement of the emotions in the learning process.

Lazarus (1991) viewed emotions as a salient component of adaptation and developed a theory of emotion (p. 819). He posited that when we examine adaptation, the more advanced species have moved away from reflexes and towards greater dependence on the emotions. He also acknowledged that the emotions were more influenced by sociocultural interpretations (p. 820). Lazarus' Cognitive – Motivational- Relational theory of emotion posits that adaptation could result from our experiences, which generally include some level of lived emotions. Lazarus refers back to human

evolution and identifies that a much greater and variable range of learning can result from emotions compared to that, which can result from reflexes or psychological drives. Adaptation in Lazarus's theory is related more to coping strategies than to learning new knowledge but it is still showing a change in observable behaviour, which is congruent with the term learning. The work of Lazarus (1991, p. 826) proffers a useful classification of emotions, which divide them into a range of negative ones including, anger, anxiety, sadness, guilt, shame, envy, jealousy and disgust; and a range of positive ones such as, hope, happiness, pride, gratitude, love and compassion. The work also identifies pre emotions such as anticipation, curiosity, interest, alertness, surprise and amazement, which are often precursors to stronger emotions. The aim of the experiential lessons in this study was to arouse interest and curiosity using anticipation and surprise as tools. Therefore, pre-emotions are very significant in this research. Later authors (Pekrun, 1992; Scherer, 2005), call all these concepts emotions, so in this study they are not referred to as pre-emotions.

 Schutz and Pekrun (2011) extended the interest on emotions in education. Their research has clearly emphasized the importance of emotions in the educational setting. They have shown how emotional experiences direct our actions and affect our learning and performance in educational settings. Furthermore, they note the influence of emotions on the personal growth of both teachers and students. They support this with reference to numerous studies, which provide evidence that the effect of emotions on teacher's and student's performance and engagement, are crucial to the agency of their institutions and indeed to society at large (p. 13). More recently, Pekrun and Stephens (2012) also supported this notion stating: "Over the past 10 years, however, there has been growing recognition that emotions are central to academic strivings" (p. 3). For example, Fiedler and Beier (2014) describe studies that identify the influences of emotional states on cognitive and motivational functions. One of these was by Ainley and Ainley (2011), which found a close relationship between children's enjoyment of and interest in learning about science.   This research conributes to the raplidly growing body of literature around the emotions and learning.

Emotions and Educational Theory

 Early and traditional educational theory emphasised cognitive and behavioural aspects of learning more than the emotions (Watson, 1913; Skinner, 1938, cited in Boeree, 1998). It has taken significant time for education researchers to start addressing the *emotions* in relation to *learning*. Humanists such as Maslow, (1943) and Rogers, (1969) acknowledged the emotions, but made more links with self-esteem than learning. Maslow's "Hierarchy of needs" is a renowned model, which has self-esteem as one of its higher order needs (Maslow, 1968). Rogers identified the concept of self-

actualisation (Rogers, 1969) and the work of both these authors has had an influence in relation to transformative learning (Mezirow, 1991). This has an objective of enlightening individuals' thought patterns, so that they challenge the current assumptions on which they act and, if they find them wanting, they change them. This includes a mental shift as well as a behavioural one. The hope of transformative learning is that better individuals will build a better world (Christie, Carey, Robertson & Grainger, 2015 p. 12). The relevance of transformative learning to the topic of this study is that it acknowledges mental and behavioural shifts. In Transformative theory, these shifts have been precipitated by disorientating dilemmas. This study endeavours to add engaging and interesting experiences to the disorientating dilemmas, which puts an interesting shift on transformative learning, bringing more resonance with positive psychology. The feeling of this disorientation may involve emotion. For example, Brookfield (1995), cited in Christie, Carey, Robertson & Grainger, 2015. p. 14) alerted theorists to the affective aspect of the dissonance and posited a need for some emotional intelligence training to be embedded within transformative learning. There is evidence that some teaching in the sustainability dimension uses disorientating dilemmas. Irwin, Straker & Hill, (2012) note that although the daunting statistics about the state of the planet may be true, using them in an education context may empower the learners to change or cause them to give up. This research aims to balance both approaches of positive and deficit psychology in order to broaden the discourse and even out the practice. As is the case with positive psychology in general, this balance favours the positive approach but does not discount the negative (Fredrickson, 2001).

Subsequently, Pekrun and Stephens (2012) have conducted and reviewed several research studies targeted at the emotions associated with academic endeavour and have quoted examples that show; "emotions are both experienced in academic settings and instrumental for achievement and personal growth." (p. 3). Their work focusses mainly on emotions linked to achievement in study, or fear of failure anxiety, and they state that most studies have explored these aspects and found that a positive emotional state is conducive to learning. In relation to the engagement of emotions in learning, which is the topic of this research, they quote studies (Helmke, 1993; Pekrun et al., 2002a, 2002b; Linnenbrink, 2007) that have found four benefits of task enjoyment (p. 9). These are the preservation of focus; the promotion of interest and intrinsic motivation; the development of flexible cognitive strategies and the enhancement of self-regulation in learning (Pekrun & Stephens, 2009, p. 9). This research investigates task enjoyment and the above benefits, but it will also acknowledge the broader range of observed emotions recounted by the participants.

Emotions and Positive Psychology in Learning

Positive psychology has emerged as a movement in the last 20 years. It supports the use of positive views to help develop resilience and enhance human functioning (Seligman & Csikszentmihalyi, 2000). Pekrun and Stephens (2012, p. 3) highlight the importance of positive emotions as part of the learning process and expand on their Control-Value Theory of academic emotions to suggest that training students in management of academic emotions is conducive to more success in academic strivings. Control- Value Theory is the comparison between the relative level of control the student has over the learning item (control), and the relative importance of the learning to the student (value). More relevant to this study is other research, which is covered in depth in Pekrun and Linnenbrink- Garcia's (2014) edited International Handbook of Emotions in Education. These authors have suggested that positive emotions do contribute to the enjoyment a student experiences when learning, and this can lead to enhanced interest (Aspinwall, 1998, Sheehan et al, 2009, Wigfield, Battle, Keler & Eccles, 2002, cited in Finch, Peacock, Ladowski & Hwang, 2014).

Positive psychology stimulates the building of resilience and outdoor programmes often promote that aim (Allen, McKenna & Hind, 2012). In biological terms, resilience is the learning resulting from a neural pathway being formed in the brain to be able to override responses to stress. Allen, McKenna and Hind do acknowledge that it is under medium levels of stress (or heightened awareness) that learning is enhanced the most, and this level of stress is more akin to excitement and engagement. Emerging neurobiological research indicates that in optimized conditions of stress, cortisol helps stimulate memory formation in the hippocampus. However, in prolonged highly stressful situations, cortisol can suppress or destroy memories by damaging glial cells in the hippocampus and amygdala (McEwen & Wingfield, 2003). They highlight that highly stressful activities result in reactions in the emotional circuits in the brain, causing a downshift to lower order thinking (survival). They contrast this with "thriving-related activities" which induce invigorating stress to allow access to existing memories and the creation of new ones. Thriving and flourishing are frequently used concepts in positive psychology and Mackenzie, Son & Hollenhorst, (2014) seek connections between positive psychology and experiential learning by relating to Seligman's (2011) "five pillars of positive emotion", through which experiential educators can "elicit positive emotions and engagement" (p. 78). This linking of positive emotions and engagement finds resonance with this research project, on the grounds that the possible links between enjoyment, engagement and memory will be explored. This is congruent with the link between positive emotions and enjoyment described earlier (Finch et al, 2012). Therefore, positive psychology has a strong link with this research because its intended focus is on positive experiences, thriving and flourishing, so aspects

such as dissonance, comfort zones and assignment anxiety, although evident, will constitute a smaller part of the research.

Emotions and Experiential Learning

Various manifestations of a range of experiential learning theories have been applied in outdoor learning since the days of Dewey (1916) and Lewin (1946, cited in Kolb, 1984). Kolb is a name often associated with experiential learning and he proposed one of the early experiential learning cycles (concrete experience, reflective observation, abstract conceptualization, active experimentation), which has been referred to by a considerable amount of experiential and outdoor education around te 1990's. The primary focus of this cycle was on action and reflection. The areas of learning that were emphasised, included personal development, critical thinking and the development of lifelong learning. The early learning cycles mentioned less about the emotions per se, even though emotions would be embedded in all of the experiences and reflections of the learner. Emotions were given more priority later by Greenaway (1993) in his 4 'E's reviewing model; experience, express, examine, explore; which used the 'express' phase to explore the feelings and emotions that were experienced in the learning activity, at the reflecting stage of the cycle. In a recent critique of Kolb's cycle, Schenck & Cruikshank, (2015) acknowledge the idea of the learning stages but refute the learning styles that Kolb derived from the stages. For example, they observe that learning styles only describe a method of input and give no indication of how the learner is progressing. They also identified that emotional connection seemed to be missing from Kolb's' cycle and that the impact of novelty was not differentiated from having experiences. Schenck and Cruikshank relate this back to the biology of cognition in that novelty engages emotions in a more focused way than everyday common experiences, but we learn from both.

Other scholars have suggested that the experiential learning cycle does not account for holistic socio-cultural processes, which are an important part of experiential learning (Seaman, 2008; Seaman & Rheingold, 2013 cited in Mackenzie, Son & Hollenhorst, 2014). Experiential learning, as seen through a socio-cultural lens would include a more holistic view of the interaction between the learner and their environment, including the social and cultural influences in that environment (Davis, Sumara & Luce-Kapler, 2008). Beard and Wilson (2006, 2013) brought both senses and emotions into experiential learning discourse with their combination lock metaphor, in which each barrel of the lock represents a dimension of experiential learning. The barrels in the metaphor represent belonging, doing, sensing, feeling, knowing and being and thus they portray a more holistic interpretation of experiential learning, which does include the emotions. This metaphor is relevant to

this study because the term 'feelings' is included in it. The Combination Lock Model gives a clearer representation of how the experiential sessions, which are the focus of this study, have been conducted. In summary, experiential methods have always engaged the emotions and are the basis of the sessions discussed in the interviews

Emotions and Outdoor Learning

Outdoor learning has been present in education systems since schools began to exist in New Zealand (Lynch, 2006). Nature study was a popular way of getting children outside in the early schools (late 1800's) and the "Open air schools" initiative also recognised the value of the outdoors. Most of this was linked to health and government attempts to reduce illness in the young population. Outdoor Education grew in popularity post World War ll with the influence of Kurt Hahn and the Outward Bound movement (1941 in UK, 1962 in NZ). Here their focus emphasised health and fitness, but it also embraced being fit to contribute to society and included craftsmanship, resilience, diligence and compassion. Although compassion stems from the emotions as alluded to by Mortlock, (2000) there is little other reference to the emotions in this early literature on outdoor education. Much of the development of outdoor education during the 60's and 70's in New Zealand was following the UK model of setting students challenging outdoor pursuits activities with the overall aim of building character. This has tentative links with resilience but again the word emotion was not used to describe this skill development. During the 80's character building was embellished to become personal development and teamwork and these consequently became major aims of outdoor education (Hopkins & Putnam, 1993). Hopkins and Putnam discuss self-concept and self- esteem at length but they do not mention emotions as a learning tool, or emotional intelligence. Kolb's (1984) experiential learning cycle was often utilised to support outdoor teaching sessions, but there was a tendency amongst the outdoor teaching fraternity to over simplify Kolb's work (Ord & Leather, 2011). Ord and Leather give an extensive critique of this practice and suggest that practitioners revisit the writings of Dewey. Dewey's work was multifaceted but his view of experience included the two-way interaction between the learner and the experience, and the learner's reaction to the consequences of the experience. (1916, 2007. p. 104). He saw experience as a dynamic, moving process.

The 90's saw the re-emergence of the environment in outdoor education and the holistic approach of Mortlock (1984, 2001) became more commonplace, with the aim of outdoor education being to help us to live with: "*an awareness of, respect for and love of self*, balanced with *an awareness of,*

10

respect for and love of others, balanced with *an awareness of, respect for and love of* the environment." (p. 105). Mortlock uses the word "love" to embrace the emotions in this statement and then further in his book, he does acknowledge the emotions and their importance in the learning process. By the turn of the twenty first century, the acknowledgement of the emotions in outdoor and environmental learning literature was more commonplace. Van Matre (1990) paralleled Mortlock's UK work in the USA with the inclusion of feelings in his earth education model. Cooper's (1998) environmental education model; awareness, knowledge, skills, attitudes, values and action, acknowledges the importance of emotions in awareness raising and in attitude development (1998, p. 7). Other authors whose work resonates with this include Martin, (2004) on nature as a friend, Brown (2009) on a pedagogy of place, and Higgins, Beames and Nicol (2012, p. 15) on curiosity in nature, as all refer to the emotions in learning to a noticeable degree.

Other studies outside the typical outdoor education domain have recognised the contribution a pleasant learning environment makes to learning (Ashby, Isen & Turken, 1999) and these could support the use of the outdoors as a learning space. The relaxing effects of being outdoors can cause an "altered brain state acquired through attunement to a prevailing physical environment" (Allen, McKenna & Hind 2012, p. 6) and it is this state, which may enhance learning. This is discussed further by Beringer (2004) who uncovers the importance that adventure therapy clients put on being in nature as a healing place, and quotes Hattie et al (1997, p. 76) that the highest ranking factor for participants in adventure programmes is the enjoyment of nature. Nature is a multisensory environment and Meyer (2001) posits that people perform better in multisensory environments than in unisensory environments: "In this respect environments that are perceived as exciting and which provide multiple cues for different senses have a greater potential for positive learning than do environments seen as dull and hard to manage." (p. 5). Some literature raises concerns about hyper-stimulating environments (Creekmore, 1987) but these do not appear to manifest in natural settings despite the range of potential sensory stimuli. All of the above place importance on the emotions in the learning process.

Within New Zealand, some outdoor education literature acknowledges the emotions. For example, Boyes(2000) posits that the concept of "critical outdoor education" should be coined to align outdoor education with the aims of the New Zealand Health and Physical Education Curriculum (1996) including a socio ecological perspective involving mental (emotional) well-being. This is part of the broader concept of Hauora, which is a popular Maori health model (Durie, 1998) that has been adopted in the NZ Health and P.E. Curriculum. Cosgriff (2008) elaborates this further to include

emotional concern for the environment leading to action. The link between emotions and outdoor learning described above is pertinent to this study because this research is exploring what emotions are experienced in an outdoor setting, how strong the memories of those experiences are, and if graduates have created links between those memories and learning.

Emotions and Learning: the Biological Basis

Pekrun & Stephens (2012) have acknowledged the importance of neuroscientific research in supporting the influence of emotions in learning through a recognition of the roles of brain structures such as the amygdala, hippocampus and frontal lobes, supported by the research of Davidson, Pizzagalli, Nitschke, & Kalin (2003). They go on to state that, "Educational psychology, however, has to date virtually ignored the progress made in this field" (p. 3). Lazarus's Cognitive-Motivational-Relational theory of emotion (1991) refers to both psychological and physiological manifestations of emotions and embarks on the challenge of defining emotions and dividing them into categories, based on both the psychological and physiological lived experiences. He acknowledges both the physical observable evidence of emotions and the sociocultural individual interpretive nature of them, and he supports this with an example that Tahitians have no words for certain emotions such as sadness and interpret it as fatigue (p. 825). Hannaford (1995) places more emphasis on the cognitive interpretation of the physiological response, which also supports the notion that emotions are interpreted personally and socially: "Objectively speaking, to the mind/body every experience is simply an event. The way we choose to perceive that event, coloured by our emotions, determines our response to it and our potential learning from it" (1995, p. 54). Some educational psychologists go as far as to claim that learning is absent if the emotions are not engaged. An example of this is given by Immordino-Yang and Damasio (2007), when they describe several case studies of brain surgery patients. In one example, the operation had resulted in the emotional processing part of the brain being disconnected from the rest of the brain, in an intellectual young man in his twenties. The person in question gained all their mental faculties on recovery, except that he could not connect his emotions with anything. It was later observed that although this person seemed to have gone back to the same intelligence level, he was unable to learn something new

There is a theme emerging in literature from the last 15 years or so, that knowledge about the functioning of the brain and the emotions, can help to explain some human characteristics, including learning and memory. This is exemplified by Immordino-Yang & Damasio, (2007), when they state; "Recent advances in the neuroscience of emotions are highlighting connections between cognitive

and emotional functions that have the potential to revolutionise our understanding of learning in the context of schools."(p. 183). Some of this literature makes links with the natural survival instincts of the brain. For example, a student or child who feels threatened will have diminished attention for learning, because their brain will be distracted with other confusing signals and their focus will be on protecting themselves. Le Doux, (1998), describes how the amygdala, which sends a signal of strong feelings to protect a person (e.g. fear, anger,) can create an" emotional memory trace" which overrides our other memory circuits and compromises our learning. Brown (2008) contests the popular outdoor education models on comfort zones and his thoughts align with the above survival example.

Le Doux identified another memory circuit, which he called "memory of emotions" which tracks through the hippocampus in the brain and allows us to remember how we were feeling during a specific event. These vivid (episodic) memories (Tulving & Szpunar, 2009) are the ones that we have in relation to important events in our life (e.g. a wedding, summiting a high peak). We often remember them in great detail, including the weather, any music or sounds going on, who we were with, what objects were around us and it is usually in vivid colour and is rarely forgotten. Evidence of these memories is explored further in the analysis. Other strong hippocampal memory formations include flashbulb memories (Brown & Kulik, 1977), which are the ones we have in relation other significant world events such as the 9/11 attacks on New York. We will often remember where we were at the time of finding out about it and can relive the emotions of that memory relatively easily. This study is investigating the impact of sessions, which have aimed to create peri-episodic memories in a safe comfort zone. It is therefore supported by the concepts described above.

Emotions and Learning: Models and Theories Supporting the Analysis

The following models and theories from the literature had the strongest connection with findings in the data and so they have been described here in detail and later analysis chapters (4-8) will reconnect with them. Some of these were sourced during the data analysis due to the insights gained from the data, and this is noted in this section.

Scherer's Component Process View

This is discussed in the methodology Chapter 3 as it related to the design of the semi-structured interviews.

Scherer's Geneva Emotions Wheel (2014)

Figure 1. Geneva Emotion Wheel (Version 3.0; Scherer et al., 2013)
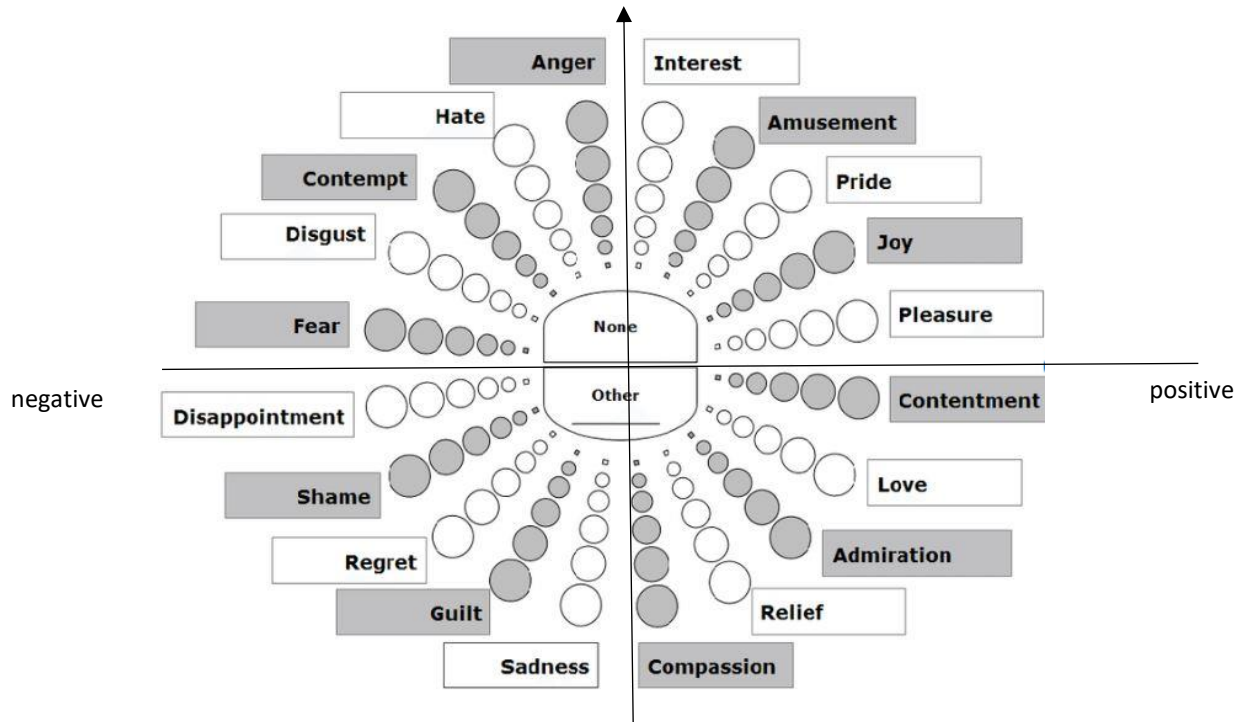
Source: Schuman & Scherer (2014, p. 29)

Scherer's Geneva Emotions Wheel (2014) was used to structure the emotions that were discussed in the interviews into emerging themes, and it provided clear a framework for the analysis. Schuman and Scherer (2014) reviewed a comprehensive range of emotions theories in their construction of the Geneva Emotions Wheel (2014, p. 29). They acknowledge that emotions are made up of a range of components and are multivariate in nature due to the fact that they are both evolution based and socially constructed and vary with context, culture and perceptions. They state that; "Researchers generally agree that emotions are episodes with multiple components that are shaped by evolutionary and social contexts and can be expressed in a variety of ways." (p. 19). They refer to the work of Ekman, (1992), Ellesworth & Scherer, (2003); Izard, (2007); Russell, (1980); Scherer, Schorr & Johnstone, (2001); and Plutchik (2001) to support this.

Scherer and Schuman's Geneva Emotion Wheel provided the best structure for the data and this has been used during the analysis of the emergent themes. This is pictured below and uses a simple biaxial division to create four quadrants. The vertical axis represents a control/power dimension with high control being at the top and low control being at the bottom. This also relates to consciousness and subconsciousness. The lateral axis represents valence with positive emotions being to the right

and negative to the left. Scherer's research on 1400 participants was analysed to plot where various emotions tend to be situated on these axes. Then he put low intensity in the middle of the circle and high intensity at the edges and generalised with the emotion descriptor words around the circle. Schuman and Scherer (2014) had based their wheel idea on the earlier work of Russell (1980). Russell used arousal levels as the vertical axis and valence on the horizontal. Scherer used Russell's model in the development of his wheel, but changed the vertical axis to level of control. This recognises that there is a cognitive aspect to processing and interpreting an emotion but it doesn't allow for individual differences in this level of control.

Figure 2 Russell's Emotion circumplex model, 1980
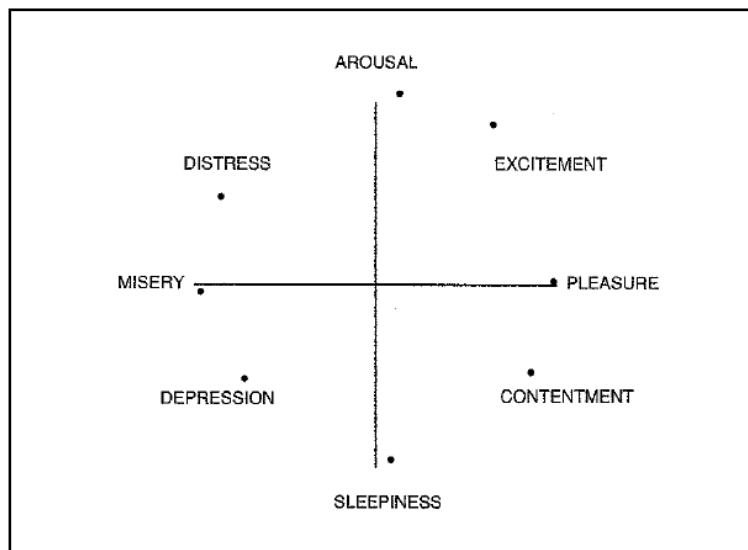
Source: Schuman & Scherer (2014, p. 28)

Figure 3 Scherer's plotting of emotions on Russel's circumplex
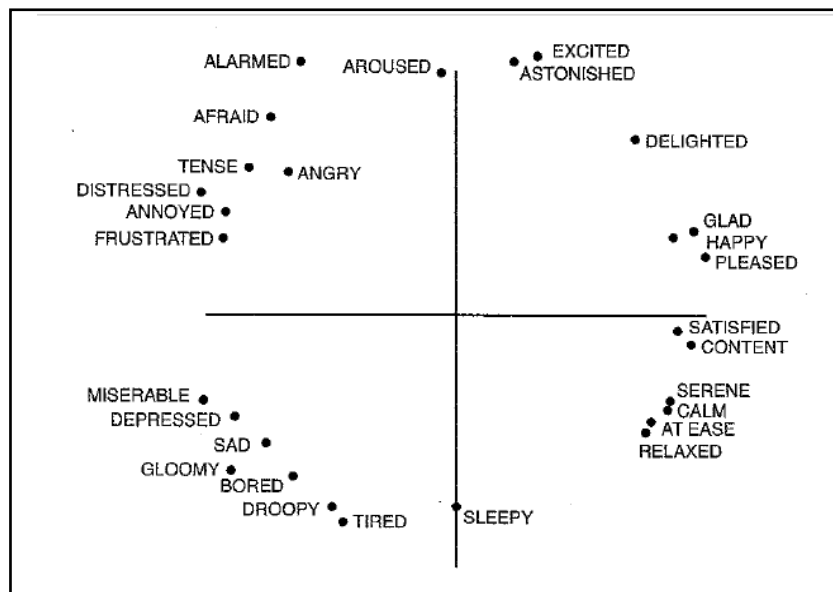
Source: Schuman & Scherer (2014, p. 28)

Scherer's wheel shows the positive emotions on the right hand side of the wheel and these include interest, joy and love (related to passion). They are all high on the positive/negative valence axis, which means they are valued as positive by those who experience them. Note that joy is depicted as having a high positive valence but is only medium on the control axis, indicating that enjoyment happens and we have less conscious control over it. Passion and love also have a high positive valence but are much lower on the control axis. In contrast, the interest emotions have a lower valence on the positive /negative scale (still positive) but are high on the control dimension, implying that we have more conscious control over them. This supports the classifying of the analysis part of this research into enjoyment emotions (enjoy, excite, passion) and interest emotions separately. Early authors classified interest as a pre-emotion rather than an emotion (Lazarus, 1991). The level of consciousness of emotions resonates with neuroscience. Our subconscious emotions trigger nerve pathways closer to the sub conscious mid brain and our more conscious feelings trigger nerve pathways in the frontal lobes of our cortex, (Immordino-Yang & Damasio, 2007).

Other authors assume interesting links between some of these emotions discussed above. Interest and excitement are discussed together in one chapter by Ainley and Hidi (2014), who stress the importance of positive learning experiences (p. 206). Back in the 70's Izard (1977) saw interest and enjoyment as separate feelings, but postulated that it is likely that when interest and enjoyment occur together, the experience can be aligned to having fun. Izard differentiated enjoyment and interest as follows:

"Joy is not the same as having fun. Joy may be involved in having fun and games. But the experience of fun probably includes interest-excitement as a principal ingredient… Joy is characterised by a sense of confidence and significance…feeling that you are capable of coping with the problems and pleasures of living." (Izard, 1977, p. 240).

Fredrickson Broaden and Build Theory

Fredrickson's (2001) Broaden and Build Theory of Emotions provided significant support for the observations made around positive emotions being stronger and more detailed in the memory. Fredrickson was efficient off the mark behind the positive psychology movement at around the turn of the twenty- first century. She conducted various research projects to conclude that positive emotions influence a number of psychological variables and ultimately enhance well-being. The four distinct conclusions she posited from her research were that:

Positive emotions broaden peoples thought action repertoire in the context of their immediate response to a situation

Positive emotions have the capacity to undo lingering negative emotions

Positive emotions fuel the building of resilience and the further limiting of negative emotions

Finally this all leads to the building of psychological resilience and triggers upward spirals towards emotional well-being

She also identified that negative experiences produced faster but decisive thought -action repertoires which were more in line with survival. The positive emotions of joy, interest, contentment, pride and love complimented each other and had a broader affect. She identifies interest as a phenomenological distinct emotion, which broadens by creating the urge to explore, take in new information and experiences and expand the self in the process. Note that this interest has a higher element of consciousness than other positive emotions such as enjoyment. Fredrickson's (2001) theory supports this research as demonstrated by the more detailed descriptions that were recounted when memories of positive emotions were brought up. I also found that the positive emotions broadened out into a wide range of areas and that the subjects often depicted a sense of well-being along the lines of emotional satisfaction and emotional intelligence. It was also noticeable that negative emotions narrowed the responses down and were very fast and linear when a minor threat was involved.

Jacobs and Gross Process Model of Emotion Regulation

Emotion regulation was evident in the interview discussions about negative emotions and this elicited a search for a relevant model. Jacobs and Gross (2014) clarify a modal model of emotion as shown below in figures 4 a and b.

Figure 4a Jacobs and Gross Model of Emotion Regulation

In simple terms, a person is in a situation and feels an emotion; they then attend to it and appraise it in order to elicit a response to it. This then has an effect on their behavioural response to the situation.

The ability to modulate the emotion comes into the model in the spaces between these phases as shown below.

Figure 4b Jacobs and Gross Model of Emotion Regulation
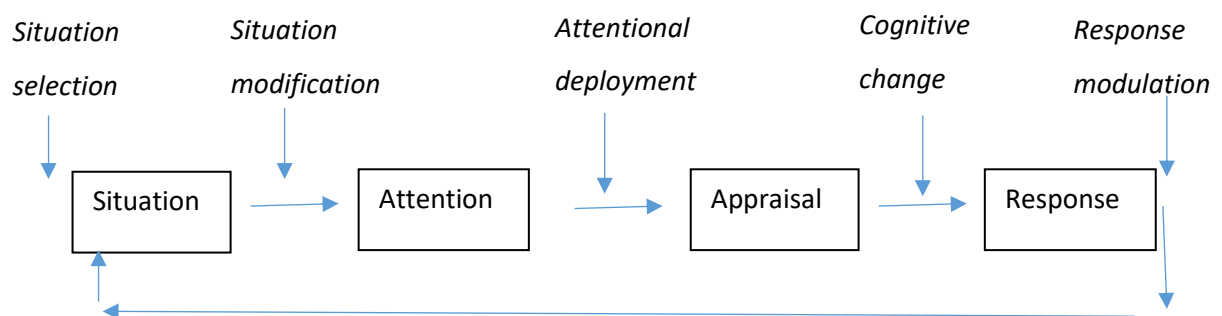
The modulation methods shown in italics can be translated into simpler terminology as shown in the list below:

Situation selection- choose whether to be present for a situation

Situation modification- change the situation

Attentional deployment-person distracts themselves

Cognitive change- person changes the way they see the situation

Response modulation- person changes the behaviour, or in other words the way they respond to a situation. This accesses cognitive control of the behaviour.

In the cases of emotion modulation by the participants, most of them involved cognitive change or response modulation. More interviews would have to be conducted to ascertain this. However, Hayes' (2010, p. 188) findings are significant in that cognitive reappraisal and change is better for memory than response modulation as it enhances the encoding of the emotional situation. Richards and Gross (1999, 2000) concur with this in stating that expressive suppression (as in response modulation) decreases the memory for emotional stimuli. This will be explored further in Chapter 6 on negative emotions, as they were being subjected to emotion modulation. In brief, most participants saw the funny or positive side of the frustrating moments, even close to the time of experiencing them so they were either suppressing them or using cognitive change to adapt their thinking. The high incidence of strong memories and vivid memories in the interviews supports the idea that cognitive change was applied frequently as this resonates with Hayes' idea that cognitive change supports memory.

Hidi and Renninger: Four Phase Model of Interest Development (2006)

This model is used to substantiate Chapter 7 on interest and curiosity emotions. Participants referred to interest in different contexts to enjoyment and the facial expression of both are quite distinct. Interest is often expressed through a slightly furrowed brow and low eyebrows, whereas excitement and enjoyment come with smiles and brighter eyes (Tomkins, 1962). Hidi and Renninger (2006, p. 112) state that interest includes both affective and cognitive components and although they are separate, they are also interacting systems. This is congruent with Damasio's (2007, p. 193) Emotion-Cognition model, which states that emotions help to direct our reasoning. In evolutionary terms, interest is related to seeking behaviour and reward circuits (Panksepp, 1998, p. 157). Historically (Darwin, 1872) and even recently (Eckman, 2003) cognition and emotions have been considered separate (as reason and passion). Interest has been classified as a pre-emotion (Lazarus, 1991) but more recent work has shown it as a relevant emotional state that can augment learning (Ainley & Hidi, 2014, p. 206). Ekman (2003, p. 93) documented that "interest is largely cerebral, a thinking state rather than an emotion", but Ellesworth (2003) later challenged this by saying that mental states such as absorption and reflection are feelings that cannot be separated from thought, and thus represent that cognition and emotion are inseparable. Interest springs out of both of emotions and thinking.

Hidi and Renninger's (2006) four stage model starts with an interest in a situation, which is maintained further as a person gets involved in the situation. The interest grows and generates positive motivating feelings. The stages are:

 Triggered situational interest- this results from short-term changes in both affective and cognitive processing (emotion and thinking). It usually has an initial interest sparking activity or object such as a computer game, a book, a film. I propose here that the activities I use in the outdoors trigger situational interest.

Maintained situational interest- this is continued through personal involvement in tasks and is augmented by external support. In this model, it is related to class based tasks but I maintain that the activities I use in the outdoors are facilitated to maintain a situational interest and that reflection sessions contribute to and broaden this.

Emerging individual interest- this is when the individual makes connections and seeks reengagement with the material over time. It is characterised by positive feelings and a valuing of the knowledge gained. The assignments and classes in the course I am researching, are designed to engage this level of interest.

Well-developed individual interest- this is an enduring interest, characterised by positive feelings and results in the generating and seeking of answers to curiosity questions. Hidi and Renninger (p. 115) call it "effort that seems effortless" which enables an individual to sustain long-term constructive and creative endeavours. The dream assignment of the course I am researching aims to engender this level of interest and in several cases, it does. From a long-term perspective, the interest the graduates have developed in their own practices resonates with Hidi and Renninger's "Well-developed individual interest".

These interest states are useful in determining levels of interest for the data analysis

Ainley and Hidi (2014) expand on this with a discussion on the states of excitement, interest and enjoyment and in their chapter in Pekrun's handbook; they discuss the links between these states. They state that excitement can be an initial cue that leads to the development of interest. However, they also note Sansone and Thoman's (2005) assertion that interest directs the attention and then the enjoyment comes later with successful application of the information or skills that initially generated the interest. This alerts us to the close relationship between emotions and cognition (Hannaford, 2005; Damasio, 2003) with respect to interest generation. This will be discussed in detail in Chapter 7 on interest and curiosity, which will demonstrate how the data supported the idea of enjoyment and excitement being the first response, with interest developing later. There was also evidence of enjoyment being experienced later as participants followed an interest and then

experienced joy and satisfaction from this. Ainley and Hidi explain that emotions can be anticipatory (prospective) and/or reflective (retrospective) and the graduates recounted both these elements at different times in the course.

Markey & Loewenstein Information Gap Theory

Curiosity was observed to be different from interest and Markey and Loewenstein's (2014) Information Gap Theory is a useful structure to support the discussion on curiosity. This theory posits that curiosity develops when people become aware of an information gap between what they know and what they do not know (Golman & Loewenstein, 2012). It also outlines three categories of determinants of curiosity, these being:

Importance: this specifies how much a piece of information matters to an individual

Salience is the amount that the individuals situation reveals an information gap

Surprise is present when occurrences are incongruent with expectations and this can stimulate curiosity and information seeking.

Markey and Loewenstein (2014) also identify a relevant difference between interest and curiosity. Interest is often generated by conditions at the time and it can be grown to reach an avid individual interest stage (Hidi & Renninger, 2006). Curiosity appears to be more random in its origin and it can be associated with deprivation; it burns into a person's mind and creates a stronger desire to seek and find than interest does. It also covers a wider range of possible subjects, whereas interest is more defined around a relevant topic at the time.

I use this work in Chapter 7 on interest and curiosity as it supports the difference between the two concepts that was evident in the data.

The Reward and Seeking Systems: Panksepp (1998), Kang et al. (2006) Ainley and Hidi, (2014).

Panksepp (1998, p.145) elucidates on a biological seeking system that leads individuals to pursue the fruits of their environment. It is linked to foraging, exploration, investigation, expectancy and it drives our curiosity. When activated, this has distinct physiological outcomes including feeling energised and invigorated with anticipation. Damasio (2003) also supports this with insights into the basic reward circuits, which govern our subconscious responses. Hidi (2011, 2012) has linked these two together to suggest that interest is also related to a reward, the reward being the information that was found out due to the interest. Kang et al (2009) have collected biological data that reveals that the basic reward circuit is also activated when there is anticipation of a reward and that this same pathway has been shown to have been activated when the anticipated reward is a piece of novel information, which the participant was curious about. Kang et al also found that there were cognitive

benefits to activation of these circuits. This biology is outside of the scope of this research but it does support the use of curiosity and surprise to generate an anticipated reward of useful information. This resonates with the experiential teaching methods used in the field trip that is the main subject of this research. Kang et al.'s work is cited to support Chapter 7 on interest emotions.

Damasio's Emotion- Cognition Model

Damasio states that thoughts are oscillating between emotion and cognition as we grapple with constructing our meaning for them. His early work lead him to suggest that emotions were central to cognition and learning. It must be noted that in Damasio's (2008, p. 193) Emotion-Cognition model, he identifies an overlap of the two functions of emotion and cognition, which he calls "emotional thought" and this encompasses processes of learning, memory, and decision making, in both social and non-social contexts as well as emotions and thinking. This implies that emotion and thinking could occur in any order, but that "emotional thought" is more akin to the later processes that happen when we are reflecting on or contending with our thoughts, and that the instant initial visceral responses sit more in the emotional domain than the thinking domain. The presence of emotion and cognition at the same time was a common feature of the high impact learning moments and Damasio's model is used to clarify this phenomenon.

Figure 5 Emotion-Cognition Model (Damasio, 2006)

EMOTION

COGNITION

Process related to body

Emotional thought- the platform for learning, memory, decision-making, creativity both social and non-social

High reason / rational thought

Body sensations can contribute to feelings, which influence thought

Rational thought can inform emotional thought- high-level social and moral

Thoughts can trigger emotions, which play out in mind

Rational thought on a decision formed within emotional thought

Source: Fischer & Immordino-Yang, 2008

Emotions and Memory: Schacter (1996), Walker, Vogl and Thompson (1997)

The branch of psychology that studies memory is large and complex. It divides the concept of memory into several categories such as short term, long term, declarative, procedural, implicit, explicit, emotional, of emotions, autobiographical, episodic, semantic, to name a few (see Appendix 1 Definitions). Although this study uses memories of participants as its data source, the topic of memory is too large to cover in this preview chapter, so only certain aspects of it will be discussed. Schacter is an eminent psychologist who wrote a textbook called "Psychology" in 1996 and has written over 400 papers on memory during the 80's and 90's. His original theories favoured the cognitive labelling of emotions in that we experienced a sensation, which we interpreted as an emotion, and then labelled it with a term that we had used thinking and cognition to determine. Much of his recent work has focussed on memory and recall. He acknowledges that emotion increases the likelihood of memories being formed and that the emotions at time of episode and at time of recall can both have an influence. Walker, Vogl and Thompson (1997) followed up on this with a detailed study about emotions and memories and recall. They tested this over a range of times up to three months. They drew four main conclusions:

1. The emotional intensity of memories (both positive and negative) fade over time
2. The emotional intensity of negative events fades faster than the emotional intensity for positive events.
3. Emotional intensity at the time of recall was more influential on accuracy of memories than emotional intensity at time of event
4. Memory was superior for pleasant events

These conclusions have some far-reaching implications in terms of this study and these are detailed in the initial findings chapter 4. Care must be taken to observe how memories do not always generate learning, but that learning is constructed and is influenced by our experiences.

Summary of Literature Review

This literature review has commenced with an insight into how the study of emotions has evolved over the years, with a particular emphasis on emotions and learning. The contributions of authors like Lazarus (1991, 1999) are described and more recent work by Pekrun and colleagues (1992, 2002a, 2002b, 2012, 2014) illuminates emotions in relation to learning. Next, the inclusion of emotions in educational theory is traced through time from theories such as Maslow's Hierarchy (1968) to Mezirow's (1991) Transformative Learning Theory. This is complemented with Pekrun and Stephen's (2012) work on task enjoyment, which aligns closely with the main topic of this research.

The enjoyment aspect is expanded on in the section on emotions and positive psychology as this has strong links with this study. The role of positive emotions in resilience building is linked to techniques used in outdoor education. The review then expands on experiential and outdoor education/learning and the role they can play in eliciting emotional responses and engagement in learning. After this, an overview of the more recent discipline of cognitive neuroscience is presented to demonstrate that this finds resonance with many educational theories and provides a biological explanation and interpretation of emotions and learning. Authors such as Hannaford, (1995) and Damasio (1999) are discussed as they propose a strong biological link between emotions and learning.

The final section of the literature review explains some of the models and theories that are used to support the data analysis. The increasing amount of literature on emotions and learning indicates that emotions can play an important part in learning. All the theories applied to the data analysis resonate wonderfully with the findings. The strong influence that emotions have on memory is an underpinning construct for the teaching methods applied in this study and the subsequent analysis of their long-term impacts. Allen, McKenna and Hind (2012) posit that emotions are significant in the creation and recall of memories and they suggest that, "varied events of short deliberately spaced cycles, which are responsive to enquiring minds and that use relevant emotional stimuli to trigger emotions, such as laughter, incredulity and even mild apprehension, often generate more meaningful learning" (p. 7). This use of engaging events resonates harmoniously with the sessions that are the topic of this exploration, and appropriates with the aim of this research, which is to shed further light on the practice of engaging emotions in learning in the outdoors, with the aim of creating lasting impact.

This literature review has elucidated a broad background to the study. The next Chapter (3) will detail the methodology and procedures applied and includes a discussion on the methods used to determine the themes to be analysed.

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CHAPTER 3 METHODOLOGY

This exploration into the role of the emotions in creating lasting impact through outdoor experiential learning, warrants a methodology that acknowledges the complexities of the human mind. This chapter includes a full description and justification of the methodology, grouped under the following headings:

Theoretical background

Research design

Ethics

Authenticity

Procedures and instruments

Data analysis

Theoretical Background

In order to clarify all the facets of this research project, it is necessary to give a brief explanation of common educational research methodologies and their influence on outdoor education research. There are several paradigms in education research generally but the three most commonly applied are quantitative, qualitative and mixed methods. Quantitative methodology is usually underpinned by a structuralist and positivist background by using determinism, empiricism and having an aim to create theories and extrapolate findings to general circumstances (Creswell, 2003, p. 6). Essential in nature, it is about finding an accurate answer, which is consistent and definite. When this was used in social research, the idea was that phenomena in the social world needed to be measured with concrete criteria in order to be rigorous, valid, authentic and reliable (Cohen, Manion & Morrison, 2002), in the same way that scientific experiments are. It is still conducted in social and educational research today.

Qualitative research is more recent, being a product of the postmodern era, and being post structuralist, in that it is about what came after structuralism. In some cases, it is informed by structuralism and in other cases, it is questioning structuralism. It may use an ethnographic approach and relies considerably on analysing the lived embodied experiences of participants, through interpretive methods (Guba & Lincoln, 2000). The philosophy behind qualitative research is that it is situational and contextual, accepts patterns beyond the expected, and adds more depth of insight into the field of study. It also aspires to reduce power issues by disclosing them, and it can be emancipatory in nature (Mayo, 2006). Qualitative research asks critical questions and uses a range of

lenses to view the data. It uses a hermeneutic approach, includes narratives, often aims for social change and allows voices to be heard (Mertens, 1998). Qualitative research is not without its weaknesses, with these including small sample size, difficulty with generalising and extrapolating results, and the potential for the researcher to bias a discussion with their standpoint (Creswell, 2003). Qualitative research tries to be open about assumptions so that although they are asserted, it is evident that they are not directing the research. In summary, it is more of an exploration than an experiment or hypothesis test, and it often changes on its journey as unexpected themes emerge. My research is in tune with this as it is an exploration, which allows the participants to direct the interview and power imbalances are disclosed at the outset.

Both quantitative and qualitative methodologies have been used in outdoor education research. Hattie, Marsh, Neill, and Richards, (1997) conducted a huge meta-analysis of a mass of outdoor research, to identify an inconsistency that quantitative studies were inconclusive in identifying benefits of outdoor education. However, qualitative studies have produced more consistent evidence of the benefits of outdoor education. Outdoor education researchers have been searching for evidence supporting its use since the days of Kurt Hahn (cited in Hopkins and Putnam, 1993) and Outward Bound. This study is not aiming to justify outdoor or experiential education, but merely aims to explore the memories of graduates' experiences. It applies a qualitative design in order to delve deeper into the experiences and this resonates with the findings of Hattie et al. on the depth of qualitative work and its application in outdoor education.

Research on the emotions evolved in the early 20th century but the topic emotions has only become a significant factor in educational research in the last 20 years or so. Numerous authors (Lazarus, 1999; Strongman, 2003; Scherer, 2004, 2005; Pekrun, 2012, 2014) observe the challenges of researching the emotions, these including the changeable temporal nature of emotions and the modulation of them when recalling memories. Research on memory is also vast (Tulving, 1972, 1985, 2002; Le Doux, 1996; Tulving & Markowitsch, 1998; Martin-Ordas, Ataas & Louw, 2012; Robin & Moscovitch, 2013) and as the data for this study has been memories, I have considered emotion modulation and narrative adaptation (Jacobs & Gross, 2014) very carefully. This is the situation in which a participant has reduced the intensity of the emotions in their memory and adapted their story accordingly. The interview can influence the narrative, as was the case when some participants realised a learning moment during the interview. This research is congruent with constructivism (Biggs & Moore, 1993), in that all participants will have constructed their own narratives of events and emotions. This is congruent with Guba and Lincoln's (2003) notion that " what we see depends

on our angle of repose" and "great potential for interweaving of multiple perspectives, and for borrowing or *bricolage* , where borrowing seems useful, richness enhancing, or theoretically heuristic" (p. 197).

As the researcher, my philosophical positioning for the study is grounded in an interpretive constructivist paradigm and it resonates with a postmodern approach. A paradigm is a basic belief system or worldview that guides a study (Guba & Lincoln, 2000). Interpretivism is commensurate with the constructivist approach in that the meaning participants have created from their experiences will be very real for them and may have resulted in certain actions or behaviours becoming evident. This implies that it is a meaningful valid interpretation of participants' reality. This will provide insights into what extent emotions have contributed to any lasting impacts on the participants learning that have resulted from the sessions and field trips in the given course. This aligns with the research question about emotions and lasting impacts. Finally, this study is an exploration and it therefore draws on multiple methodologies. Findings are related back to the literature on emotions, learning and memory from the domains of educational theory and positive psychology.

Research Design

My research design matched theoretical underpinnings of a qualitative constructivist paradigm and links between the design and theory are elaborated on below. The application of a qualitative paradigm springs from the favourable results that qualitative research has produced in outdoor education (Hattie et al., 1997). There are numerous reasons for these favourable outcomes, but one is the emotional nature of outdoor education experiences and how difficult it is to capture them accurately with a questionnaire. They are contextual and situational and this supports the need to observe and participate in the lived experiences of the participants. Trust is a construct often alluded to in outdoor education sessions and over time the literature has portrayed trust as a long-term progression of levels rather than a box to be ticked (Frank, 2001). That same trust concept needs to be constructed with research participants in order to get them to share their deepest feelings. Questionnaires and psychometric instruments may not measure the emotional response as well as narrative with the researcher as participant (Jansen, 2014). The emotions felt at the time of an outdoor experience are felt differently when reflecting on it. They may be stronger or weaker. They may not be expressed in a questionnaire survey. An interview captures this in a more holistic manner, resulting in data that can be interpreted from a range of perspectives to reveal more profound insights. Recent studies extend this capturing of rich data to take the interviews outside, walking and talking to allow for thoughts to flow more naturally (Lynch, 2013), but for this study this was viewed as a distraction from memory retrieval.

The course that is the focus of this research is a specific course in a polytechnic-based bachelor programme on sustainability and outdoor education. The content of the course is educational theory, and its application to the planning of educational programmes, which make some use of the outdoor environment. It is perceived by new students as one of the less exciting courses of the degree but course feedback has predominantly indicated that students have found it exciting and engaging and it has given them an appetite for reading theory. The research question inquires about the extent to which emotions have contributed to lasting impact. For information pertaining to the course sessions, see appendices 2a and 2b. These will give some context to the quotes discussed in the analysis section.

Finally, my desired methodological approach includes an element of "*researcher as participant*" as I was part of most of the sessions researched (Davidson, n.d.) but it is even more closely aligned with "insider research" (Trowler, 2014) because I was interviewing participants who had been students on a course I was teaching. To clarify this as the researcher, I was a participant in the sessions to be researched, but not as much of a participant in the interviews. This is because I aimed to be neutral in the interviews and did not voice my thoughts on the topic until the end of the interview. My voice becomes more prominent in this study through the writing. Mercer (2007) explains some pros and cons of insider research. The main one of these that is relevant to my study is the dilemma between being known well by the participant and being a neutral outsider. A neutral outsider can obtain an objective account but an insider can engage in deeper conversations with the participants and collect richer data. The details about how I was able to engage in rich conversations with participants and aim stay neutral at the same time, are discussed further later. This method is in keeping with my theoretical position, in that it recognises that the practices of outdoor education are peppered with those deep philosophical moments that result in meaningful learning that is often values based, self-awareness raising and in ultimate cases, behaviour changing. It will acknowledge the emotions as the cornerstone of learning and will enhance the learning of the participants through allowing them to engage with their own memories of emotions appropriately.

Ethical Considerations

This research project has followed the ethical guidelines of the University of Canterbury. Details of this are on the ethics forms in the appendix but in summary, the following was adhered to:
   a. All requirements of the course delivering institute safety management plan were adhered to in the teaching sessions.

b. All participants were graduates and they were no longer under the tutelage of the researcher.

c. Selection of participants was based on stratified random sampling to get a spread of year groups.

d. Sampled graduates were contacted by messenger, email or phone and invited to participate in the study.

e. All graduates were given the participant information sheet to read and a consent form to sign, which explained the details of the study and can be seen in the appendix.

f. The main requirements of the research were upheld: the graduates could stop the recording anytime and were given a transcript of the recording to check. Pseudonyms are used.

g. The semi-structured nature of the interview allowed for flexibility in what was discussed.

h. Ethical approval was sought to use landscape photos as memory joggers later in the interview.

i. Some unpacking of concepts in the interviews involved talking about the emotions, but they were generally positive due to the nature of the course. The participants were made aware of this.

j. All data has been kept in a secure flash drive and this is locked in a cupboard when not in use.

k. Ethical approval was given for the researcher to use ethnographical notes kept during the course and to source some course feedback summaries.

l. Participants can be withdrawn at any time up to submission and they are aware of the University of Canterbury complaints procedure.

m. The fact that the researcher was a past tutor of the participants could result in power imbalances in the interview, but clear steps have been made to mitigate this risk and this is explained in the section on trustworthiness.

Ethics forms can be found in appendix 4.

Trustworthiness

This study demonstrates authenticity and trustworthiness in that it accurately recorded what the graduates remembered of their perceptions of their experiences. Participants were then sent the transcripts and asked to check them. Accurate quotes of what the participants actually said were

used to illustrate insights. The recorded narratives were the participants' perceived realities. Authenticity requirements were observed using guidelines based on the work of Creswell (1993). Similar patterns of recall across all 13 participants demonstrated reliability in the data. The cross checking of the data and use of several perspectives shows that it is valid data. The content of it relates to the interview question because the interview had a semi- structure. The use of the same structure for all participants over two blocks of time ensured rigour and dependbility. The interview was practiced in 2 pilot interviews to aid the development of as neutral a technique as possible. The participants said most of the words in the interview and prompts were only used later in the interview. Despite all the practice and best intentions, the presence of a familiar interviewer and the fact that the interviewer was present at the recalled experiences would have influenced the conversations and this is acknowledged as part of the qualitative paradigm (see Researcher Bias below).

Researcher Bias

I am very aware of the infiltration of my passion and values into the enquiry process. In 1985, Guba & Lincoln (p. 197) covered ways in which values feed into the enquiry process through aspects such as; choice of problem; paradigm; theoretical framework; data gathering; analysis methods; context and presentation formats. In 2000, they took this further to suggest that values should become part of the foundation philosophical dimension of the paradigm proposal. In this research the high value I place on learning in the outdoors will underlie much of the inquiry, but in line with Guba and Lincoln, (2000, p. 200) this is part of the underlying philosophical dimension of the research paradigm.

Following this, it was possible that my presence has influenced the interviews because even the email from me inviting a participant to participate might have affected memories. I was the tutor on several of the courses that these graduates completed. Thus, I was in role as past tutor and as researcher for this research. This may have influenced graduates, as they may not want to offend me if they did not enjoy parts of the course. However, the semi- structured interviews have explored what the student has remembered about the courses rather than make any judgement about it. In order to mitigate the above, I asked the participants to do a pre-interview task of creating a page of memories (picture or writing) from the course before we had the interview. From the feedback forms from the course it was clear that I had a good teacher / student relationship with most of the students and we worked in an open and reflective way, with feedback given in both directions as part of the sessions. This somewhat reduced influence of my presence on graduates' thinking. There was a support worker available but participants did not feel the need to use this support. The support worker had signed an ethics form on confidentiality. During the interview, I ensured that I

stayed quiet after a question and let the graduates talk. I had a list of sessions that I wanted to discuss to guide my prompts. I also tried to minimise my facial expression in order to appear neutral. As the interview progressed, I was able to relax a little, as it was the graduates first memories that I wanted to elicit in the most neutral space. Towards the end of the interview, it became more of a general chat about memories but these also provided useful insights and showed that interviewer-interviewee familiarity also had its advantages in terms of enabling rich conversation. The work of Mercer (2007) on her interviews with fellow staff members alerted me to 'insider research' and the need to reduce familiarity at the start of the interview. However, I acknowledge that it would be impossible to remove my influence from the interview completely and this is accepted as part of the research. The participants all received a transcript of the interview and they were allowed to make changes to it to reflect their constructed meaning. They were informed that they could withdraw from the study at any time and nobody did this.

Subsequent to this, the data collected were then examined in a systemmatic way to identify emerging themes and then examined further to gain deep insights into the findings it revealed, which benefit from being supported by a theoretical methodological framework that accepts social construction and the variability of perceived realities (Rea, 2008). McBain (2009) exemplifies identification of emergent themes through a repeated reading of the data. I used the same concept but also used manual and NVivo concept counts to provide the initial words, which did provide an initial simple quantitative view. As the research is an exploration, my acceptance of the unexpected in the interviews lead to the emergence of different themes. For example, I was not intending to discuss negative emotions but as the word counts showed a number of these, they were addressed as a theme to analyse. A neutral view allowed this, whereas a biased view may have ignored this theme.

In summary, the interpretive approach allows for the participants varied subjective constructed realities to be viewed through several research lenses. It accepts that emotions will have been part of those constructed memories as was alluded to by Lazarus (1991, p. 831) when he identified the influence of the person-environment relationship on the persons emotional responses to phenomena.

Procedures and Instruments

The data was gathered through retrospective interviews with graduates about their memories of the educational course that is being explored. The span of years since the participants completed the

course was 13, from 2003 to 2015.). Ideas from McDonald (2013) were used for sampling and from McBain, (2006) for emergent theme analysis. The participants were all graduates over 21 years of age at the time of the interview and have left the tertiary institution. For her sampling, McDonald used volunteer sampling from a purposive set of schools and stratified it according to decile. This study stratified participants according to years since completing the course and aimed to get a spread of gender, mature students, school leavers and students from other institutes who moved to the next stage in year 2. The idea of calling for any volunteers was not applied, as they may be people who enjoyed the course and want to talk about it, and this would skew the results. In the light of this, some stratification and some purposive sampling was conducted to get a good cross section. The stratified random sampling was done by dividing the graduate lists into bands of 3 years labelled A-E using the year groups in Table 1 below. Note that there were changes in the course over time as it was developed and this stratification takes these into consideration.

Table 1 Year bands and the characteristics of the course in those years

Band	*Dates*	*Description*
Band A	2003-5	Mystery trip was mainly about educational theory
Band B	*2006-8*	Mystery trip was mainly about educational theory
Band C	*2009-11*	The people doing the field trip in 2011 had a shorter version due to the Canterbury earthquakes. In 2009, the course was merged with another to result in the inclusion of more contemporary issues.
Band D	*2012-14*	All of these participants did a slightly different version of the mystery trip, with more social theory included.
Band E	*2015-16*	all of these participants did the same version of the mystery trip as the band above

 Overall, 5 groups were formed from this stratification. The most recent of these groups was 2015 and 2016. This was only a 2-year band as it was close to when I was conducting interviews and the 2017 students had not yet completed the course. It was useful to include these 2015 participants because it gave an indication of more recent memories. The 2015-16 band included memories of at least one preceeding year as the interviews were conducted at the end of 2016. Class lists of the year groups in each 3-year band were printed and numbered and then numbers were drawn out of a

hat to identify participants to be contacted (three for each band, A-E). The purposive aspect of it came into play once a list of 15 potential participants was reached. I contacted the participants starting with the ones from longest ago, choosing two from each 3-year band initially, one male and one female. If one or other of these could not attend interview or did not reply I selected the next on the list who was in that 3-year band who was of the same gender as the one who could not make it. The gender proportion ended up as 7 females and 6 males. I wanted a good cross section of mature students and school leavers and this happened by chance with my list so I was happy with that. The spread of ages when on the course was 7 school leavers (53%), 4 under 24 (2 gap year and two 24 year olds) (30%) and 3 over 25 (23%). The percentages of these proportions in an average class are usually slightly higher for school leavers, but I felt that a sample of 7 school leavers was plenty to reflect their stories. When I was conducting the interviews, many who were school leavers at the start of the course had gone overseas. I made one other purposive choice of participant and this was Poppy (pseudonym) who had moved to the course from another institute. I asked Poppy out of interest because she may have provided a different perspective.

The final list was 15 and they were contacted via facebook messenger, which is not a public post. Most of the programme graduates are members of a facebook page for graduates. Fourteen of these replied and emails were used to arrange to conduct interviews with them. One became busy and could not make it. Consent forms and participant information was sent via email and either returned via email or the hard copy was returned at the interview. All participants have been acknowledged as volunteers for the study and will be sent a copy of the final report. Given the original aim was 10 participants, 13 was regarded as adequate.

Construction of the Interview and Pre Interview Task (Scherer, 2005)

Brookfield, (1995, cited in Christie, Carey, Robertson & Grainger, 2015, p. 14) stated that there needed to be more phenomenographic exploration of how learners feel their way through the learning experience. This study utilised that principle because the phenomenographic perspectives of the participants was explored further as each memory was recounted. A popular way to describe this is by peeling back layers on an onion and the word "unpacking" has been used more consistently recently to refer to this process. In order for this to be facilitated, the interview was semi structured to ensure that it covered all the sessions that the study was exploring, but it also allowed for further discussion on a topic once it surfaced. This allowed for exploration of emotion and thinking components, as they were revealed. This was based on Scherer's (2005, p. 710) component process view and this is described further below because it applied to both the interviews and the interpretation of them.

Scherer's (2005) component process gave a modicum of structure to the interviews and suggested categories for the analysis. The list of field trips and sessions was used as a starting point to give the interviews a semi- structure and to make sure they did not go off track. This was then supported further by using Scherer's list of components as an overlay during the unpacking process.

Table 2 Scherer's list of Components of Emotions (2014, p. 15)

component	description	Details and phrases used in interview
Cognitive	thinking	What did participants think during the experience or activity
Subjective feeling	emotion	What did the participants feel during this experience
Expression	immediate doing and saying	What did they do or say at the time and any facial expression , body language
Action tendency	actions thought about	What actions were thought about being taken soon after incident
Appraisal	Meaning -making	What did they make an experience and the associated emotions mean
Motor activity	Actions taken	Any physical or vocal actions taken soon after incident
Physiological	physical sensations	blushing, visceral butterflies, goose pimples etc.

Source Scherer, K. R. (2005). "What are emotions? And how can they be measured? Social Science Information 44, 695-729.

For the purpose of the interview, I put these in the following order: Physiology, Emotion, Expression, Cognitive including appraisal, Action including motor activity. I am also adding long-term actions as evidence of learning. This is because the physiological and emotional responses appeared in the pilot interviews to precede the cognitive story. This resonates with Damasio's work on the emotion-cognition model, which is clarified in the literature review Chapter 2 Figure 5 and expanded upon further later in this chapter. In frequent cases, the initial emotion expression occurs before cognition, especially facial expression (Hannaford, 2005). Damasio posits that humans evolved through numerous pressures in order to cope with reading the body's condition and making appropriate responses, and that the beginning of these responses is via an emotional machinery before the cognitive element engages (Immordino-Yang & Damasio, 2008; Goswami, 2008). The order that I applied this list of Scherer's components in the interviews resonates with this and followed a logical sequence. A cross check of this order with the transcripts showed that the participants frequently referred to emotions with words like "feel" and to thoughts with words such as "like". They described their immediate expression in detail and referred to their actions slightly less. I often prompted them for physical sensations. I added learning and longer-term application to the interview with questions about how

they apply the learning they constructed now at work. These discussions on the participants' current practice took up a significant amount of interview time and were the most useful indicators of learning.

Appraisal theories show that emotions can be modulated and can be changed in memories and that they are often culturally and contextually specific. This makes research interviews on emotions somewhat tricky as the participants may have already modulated the emotions in their memories (Jacobs & Gross, 2014). This was considered in this study and the interviews started with simple stories of memories first in order to focus on memories of experiences, therefore less thinking time was left for emotional modulation (adaptation) and descriptions were more immediate and therefore more aligned to the actual emotions experienced at the time. A critical point about emotions is that they are an individual human's expression and attempts to categorise them need to be viewed with caution.

The pre interview task involved the participant in spending about 10 minutes jotting down or doing a brainstorm diagram of their memories of the course, which they could refer to in the interview. This helped with flow in the interview and may be used in some cases to support the analysis. The semi-structure of the interview used a framework shown in Appendix 3, which ensured that all sessions were covered and emotion occurrences were unpacked.

Data Analysis

The interviews were conducted using a list of reminders to help with consistency. These reminders mainly consisted of the field trips and sessions that were part of the course. The interviews were not pre-planned too much as that might have influenced the emergence or absence of some themes. The interview guidelines are shown in Appendix 3 and these were not always followed rigidly if the conversation was fruitful in terms of the aims of the interviews. The participants completed a pre-interview task of drawing a picture or writing notes about their memories from the course. They were asked to talk about these in the interview addressing the strongest memories first. Each time an experience (usually a class or a field trip activity) was recounted I was able to unpack it further with the participant by asking about what they remembered, any sensations, feelings, emotions they had and then what they thought about the experience. I did not use any emotion words until the participants had referred to the emotions. This meant that the emotion words that the participants used were their own and I had minimal influence over the choice of words. This allowed the emotion words to be analysed to reveal the most prolific words and this was the first stage of identifying the

emerging theme and this is explained further in a later section. This pattern of prompting utilised the framework of Scherer's (2005) component process view (described in detail in the previous section) to unpack experiences further. Towards the end of the interview, participants were asked if they applied any of the learning they had just described in their teaching work at present. This produced some useful supporting evidence of the longevity of the learning. All interviews were recorded and transcribed and saved under a pseudonym and the year that participant did the course (e.g. Lucie 06)

Identification of Emergent Themes

The research design in terms of the analysis is also underpinned by the philosophy described in the previous theoretical section. Themes emerged out of the data (Guba & Lincoln, 2009; McBain, 2006, Creswell, 2012) and they were trimmed and aggregated to make them manageable. The analysis used a mix of both deductive and inductive approaches to code and group the data and then distinguish emerging themes. Some of those themes were anticipated already and did emerge as themes. An aim of the study is to look for emotions in certain memories of learning experiences. Hence, although the emotions recounted became emerging themes, the experiences discussed were mostly pre-determined and were contained in the interview structure. The questions about what emotions the participants experienced were used later in the interview, if the participants had not already referred to emotions. The semi-structured nature of the interview allowed for the discussion of these emotions, as certain sessions were remembered by certain participants. However, other topics emerged from what the participants constructed from their experiences and how the experience felt to the participants. The whole analysis procedure has been viewed through a critical and reflexive lens (Brookfield, 2009) and this is discussed in the section on bias. The details of the analysis can be seen in the Tables 8-20 in Appendix 5. The initial themes emerging from the data are detailed in Tables 9 and 10, Appendix 5. The tables that are most relevant to the procedure of identifying the emerging themes are clarified below and they will be referred to throughout the analysis.

Table 8 Manual Concept Record- this shows all the data from the manual counts of concepts that were conducted

Table 9 Condensed Summary of Manual Concept Record- this shows the most commonly occurring themes

Table 10 Major Themes and linked words in order of magnitude- this shows the themes in order

Table 11 Themes Chosen for Analysis- this shows the final themes and why they were chosen for analysis

Manual Concept Record

An initial manual record of the data was conducted to identify emergent themes and I have termed this the "Manual Concept Record" and it can be found as Table 8 in Appendix 5. This included reading each transcript and identifying conversations on a common theme (McBain, 2009). For example, the participant may have talked about enjoying a particular activity and they may have mentioned the word enjoy several times or used similar words several times in the same discussion. This was recorded as one occurrence of this theme on the spreadsheet. This was completed for each participant and the resulting spreadsheets are in Appendix 5 as Tables 8-11. These show the progression of how themes were considered and chosen starting with Table 8, the Manual Concept Record. This produced a list of 77 commonly repeated ideas. These were then condensed down by doing a thesaurus search on all of these words and aggregating them into groups. See Table 12 in appendix 5. This narrowed the ideas down into about 15 groups. Some of these themes were beyond the original intention of the study (such as physicality, sense of place and the weather) so they were grouped further into "other findings" and will only be discussed briefly. This left the main groups on emotions, and these are the principal focus of the study. These have been divided as follows:

Positive (subconscious) Emotions, sub divided into discussions related to enjoyment, excitement and passion

Positive (conscious) Emotions such as interest and curiosity

Negative Emotions, mainly frustration and annoyance. One instance of fear. Included emotion modulation

High impact Learning moments/encounters: the words aha, blown away, and eye-opener (and others) were used for these and they appeared to include both conscious and subconscious memories.

The rationale for dividing the themes as shown above is supported by theory from Scherer (2013) and Hidi (2014) and this has been explained further in the literature review Chapter 2 in the section on models and theories, including an explanation of Scherer's Geneva Emotion Wheel and how it gave structure to the data. The themes that emerged from the data in this study tended to sit on the right hand positive side of Scherer's wheel. In line with Henderson (2011) on the pragmatics of leisure research, I did what I did because it worked. This meant that only certain quadrants of Scherer's wheel were represented, these being joy, love/passion, interest and possibly frustration as a very mild form of anger. From the Manual Concept Record (Table 8), the themes of enjoyment, excitement, love (usually described as passion) and interest emerged as separate entities. Ainley and

Hidi (2014) linked interest and enjoyment, and Izard (1977) linked excitement and interest. The data resonated with this in that both enjoyment and excitement can generate interest, but for the purpose of my analysis using emergent themes (Guba & Lincoln, 2009), the three concepts came up at different times and there was a definite difference between the use of the word interest and the use of enjoyment or excitement in the conversations.   The participants described excitement emotions with more animation and often with a more detailed vocabulary. These were differentiated from enjoyment emotions for this reason, but it is hard to determine where they sit on Scherer's (2014) Geneva Emotions Wheel, as he does not use this word on the wheel. The data showed that excitement was something over which the participants had less control and seemed to elicit a higher intensity than enjoyment. Note that the diagram showing Scherer's plotting of the emotional findings from his study on to Russell's axes in Chapter 2, has excitement in the high right quadrant of the wheel, as it is both arousing and positive. These are expanded on in later Chapters 5 and 7. The emerging themes above became the principal focus of the study. These were then entered into NVivo and the data was coded accordingly as described below.

Coding in NVivo

The transcripts were imported into NVivo and the nodes were created using the emergent themes above. The full list of nodes is in a sub folder format and is:

Positive emotions (emotional and subconscious)
    - enjoyment emotions
    - excitement emotions
    - passion
Positive emotions (cognitive and conscious)
- interest and curiosity
Negative emotions
    - boredom
    - fear
    - frustration
    - nervousness and apprehension
High Impact Learning moments/encounters (seemed to be both subconscious and conscious)
Other themes
    -Emotional intelligence
    -Experiential Learning and education
    -Theoretical learning
    -Learning applied to participants' current practice
    -Holistic insights

This structure provided a base for the data to be coded. In some instances, data could be coded in more than one place, for example, when frustration was modulated and tempered with the word

fun. The other themes go beyond the scope of this study but they were coded for future use and will be summarised in brief, as they did emerge from the data. The big picture quotes on holistic insights may be useful in the conclusion.

NVivo word search using single word roots (e.g. excit*) and similar words

This was done to create word clouds and lists of word frequency. The similar words mode was used so that data would be grouped into themes more. Tables 13, 14 and 15 are in Appendix 5. The word frequency chart is shown in Table 13. Table 14 is a simplification of Table 13 showing the emotion related words and their word count for the all the transcripts together. Table 15 is a summary of the frequency of the emotion words used according to the NVivo search. It shows the number of participants using each word, the number of times the words came up for each participant and the total numbers of uses of the words or similar in all the transcripts together.

These figures were higher than the manual concept record because they showed every instance the word or similar words were used, whereas the Manual Concept Record only showed the number of conversations using the concept. They supported the Manual Concept Record data but have not been analysed much further. The smallest word counted was four letters, so the word fun was missed out. Fun is not an emotion but indicates enjoyment so it was counted using a separate word search for each transcript. The same process was applied to the words "like" and "good" as these were used quite frequently in the conversations and have a strong link with enjoyment. It was also noted when these words were spoken in other contexts such as like for similar; "it was like this" and good as an acknowledgement; "good, thank you for that".

NVivo word search on *interviewer only* scripts and *interviewee only* scripts

The transcripts were divided into *interviewer only* and *interviewee only* copies and imported into NVivo. This allowed for word searches to be conducted to check if the interviewer had pre-empted the questions by using emotion words. On the initial count, it appears that this happened to a small extent but after further detailed analysis, it was more because the interviewer used reflective listening (Dinkmeyer & McKay, 2008; Jansen, 2004) to aid the participant in remembering occurrences. This was done by reflecting back to the participant, what they had just said in fewer words, so no new emotion words were added at that time. This was done mainly for the quieter participants who needed a bit more prompting. The talkative participants needed no prompting!

Spreadsheet on timing of recall in the interview

During the interview, the interviewer started to give more prompts and clues. An analysis was conducted on what level of recall there was before prompts and then as each prompt became more detailed. This is shown in Table 17 in Appendix 5 and it divides the recall into several categories shown below:

Remembered first without any prompt

Remembered second without any prompt

Remembered third or subsequently without any prompt

Remembered with a prompt of a map or photo

Remembered with a prompt of a few words

Remembered with a prompt of a detailed description

No recall

Recalled as an afterthought

Other NVivo tools

NVivo was used for word searches and word clouds. These will be useful for any presentations done on the study as they provide a good visual insight into the data, but plentiful data emerged out of the Manual Concept Record and NVivo word searches, so the word clouds are not analysed further in this study. The main part of the analysis is the discussion of the insights made into the data on the themes. This was related to Scherer's Geneva Wheel of emotions (2005) which has been clarified in the literature section.

Summary of Methodology

To summarise this chapter, principal elements of qualitative methodology have been explained in relation to this study, in order to provide a theoretical background. The research design was described to clarify the idea of interviewing past graduates on their memories from a course. Ethical aspects are then explained and this leads to a discussion on authenticity and bias. At this point, I alert the reader to my passion for this topic, how this might influence the interviews and what I put in place to mitigate this. This was followed by the procedures section, which clarified the sampling methods and interview techniques. The chapter culminates in a detailed description of the data analysis methods supported by Scherer's (2005) component process view, which teases out emotions from thinking and actions. The methods used to identify the emerging themes included a manual concept count and then further coding in NVivo to produce word counts. The themes that have emerged from the data form the next five chapters (4-8), which comprise the analysis. These are an overview of findings, positive emotions, negative emotions, interest emotions and high

impact learning. This analysis will select quotes from the data sourced through the NVivo coding in order to give supporting examples of the participants' experiences of these emotion themes and the constructed stories of learning that they relate to them. Reference is made to the literature to give the analysis credibility and a theoretical underpinning. This concludes the methodology chapter and illuminates the rigour applied to the research and the thorough nature of the analysis.

CHAPTER 4 OVERVIEW OF FINDINGS

This chapter will explain the initial emerging themes and first impressions. The subsequent four chapters 5-8 will illuminate my significant findings by unpacking the emerging themes in detail. This will be done by presenting the data for the relevant theme, interpreting it and relating it to the theory through the literature. This chapter will describe some of the findings about points of difference between what the participants recalled and what they classed as learning. In addition it looks at the frequency of concepts arising in the interviews and the number (as a percentage of total) of sessions participants recalled. This chapter is supported by data in tables 8-20 in Appendix 5, and constitutes a simple summary looking at percentage recall by participants.

First Impressions

My systematic approach to interpreting the data places a level importance on the first impressions gained from reading the data and I highlighted these on the transcripts the first time I read them. These are condensed into bullet point format and all of them have connections with emotion theory:

- Field trips and experiential activities engage strong emotions (Beard & Wilson, 2006)
- The role of mystery and surprise in engaging interest (Markey & Loewenstein, 2014)
- The importance of facilitation and reflection to construct learning from the experiences (Jansen,2008)
- The unexpected realisation that theory could be interesting (Hidi & Renninger, 2006)
- The level of satisfaction from completing things (Panksepp, 1998)
- Frustration is part of learning (Jacobs & Gross, 2014)
- Having fun augments learning and memory (Izard, 1977)
- The outdoors as a place to frame memories (Brown , 2006)

They are expanded on in the relevant chapters later.

Identification and grouping of emerging themes

The plan for this was described in detail in the methodology Chapter (3). The grouping of the themes (appendix 5, Tables 8-11) was possible because the emotions described by the participants were similar. The thesaurus search (appendix 5 Table 12) was extremely useful in affirming the themes and the groups that emerged were well defined.

Significant Principal Memories for each Participant

This section refers to Table 16 in Appendix 5. A brief summary of Table 16 appears below as Table 3.

Table 3 Summary of Principal Memories from Table 16 Appendix 5

sessions	Field trip	Cave session	Class outdoors issues	Debate class	assignments
Main memories	Fun enjoyment Exciting mystery	Anticipation Exciting Awe wonder group	Intense discussion	Heated Valued later Some agreement	Choice Freedom Relevant enjoyed

Table 16 (Appendix 5) was created from the transcripts by identifying which observation came through as the most significant for each participant. This was done with the help of the manual concept count showing how many times a certain concept or occurrence was discussed, paralleled with the depth of discussion that ensued around that particular concept. I can conclude from this that all graduates experienced strong emotions about some aspects of the course, but that there were individual differences between which aspects each participant made meaning out of, and how much learning they gained from these. There were enough common themes amongst participants to conclude that the field trips and outdoor sessions made a very significant contribution to the participants' learning and that the assignments and debates were also of value. It must be noted that as the course and field trip have evolved, some of the activities have changes but similar learning outcomes are still in place.

Several of the participants had strong visual memories (Robin & Moscovitch, 2014), such as Lucie, Jason, Rob and Robbie, whose data will be presented in subsequent chapters. Their recounting of vivid memories was often repeated and accompanied by the words "blown away " or similar. They linked these to a construction of learning that had significant depth, such as Lucie's realisation about the environmental crisis when she heard about the cosmic calendar. Other learning of notable depth included Heather's observations on rich and poor and Mary's on experiential learning. These will be elaborated on further in the next few chapters.

Another theme that was strong for some participants was the mood of the group and the role it had in their learning. This included numerous observations from Meg about watching the groups responses to challenges delivered to them. Poppy noticed changes amongst the group towards a more collegial atmosphere and Robbie noticed a strong emotional intelligence (Meyer, Salovey, Caruso, 2004) capacity as the group learned to deal with frustration and ended up celebrating. Surprise and interest were viewed by many as strong themes and Rob, Mary and Barry noted this several times. Lucie, Andy and Fran noted their own use of surprise in their own teaching practice. Other individual observations included Lily's valuing of the use of local areas (Heijnen, 2017) and Harry recalling that facilitation techniques (Miles & Priest, 1995) were what he got out of the course most.

The Table 16 in appendix 5 summarises the data for each participant in order to make a quick reference guide showing which participants remembered field trips, outdoor sessions, theory classes or assignments. It notes the strongest example and rationale for recalling it for each participant. For example, Lily really enjoyed the field trip but noted particularly that she liked the fact that it was local. The table includes other points of interest as noted in italics, most of which were to do with changes in the course. Barry's year (2011) was changed due to earthquakes, so the field trip changed to use the ferry, and the cave collapsed. The course was developed further in 2012 and social theories were added, so the field trip evolved to an emerging nations activity. 2012 was the first use of political squares activity. 2014 was the first cave swim to replace the cave activity. All these changes, I believe have strengthened the course, enhanced the learning opportunities and made it more memorable. However, I must note that this has yet to be tested over time. For example, the political squares activity and the use of the field trip to demonstrate social theories was remembered as high impact sessions by all those that did them, but the earliest that this was run was in 2012 , 4 years before the interview. All of this has emerged because the field trip and sessions have evolved over time as the course and field trips have been developed in response to student feedback and programme changes. The field trip and its evolution have effectively become part of the research.

Percentages of Sessions Remembered and Timing of Recall

This section refers to Tables 17 and 18 in Appendix 5. Table 17 shows the priority order that participants recounted the memories. They were asked to describe the experiences they remembered most first and then move on in order. This worked for about the first 3 memories but then the discussion clouded it a little so any further memories which were recounted after the first 3

were grouped together. Next a map and later a landscape picture was used as a prompt, then single words and later a bigger description. Some more recall surfaced using these and they were classified as weaker memories. The final stage revealed a brief synopsis of the activity to see if that prompted anything. In some cases, participants remembered some more after the interview or at the end of the interview when they were asked if there was anything else they wanted to say. The percentage of participants recalling the sessions is listed at the bottom on Table 17. Table 4 is a summary of the recall rates for sessions (based on data in table 17) and it can be seen that the memory rate for this small sample group was 100% for the field trips. The memory rate for an engaging class held outdoors called political squares was 80%. The memory rate for a creative assignment was 92% and the memory rate for a group assignment, which created a class book, was also 92%. The highest classroom session memory was a debate and this was recalled by 53% of participants.

Table 4 Summary of Frequency of Memory Recall of Sessions

Participants remembered	100%	92%	83%	80%	58%
What they remembered	Field trip cave boat jump rafts auction shelters nightwalk apply it to work now	Book project Dream project	Educational theory	Political squares activity on issues	debate

Table 18 (Appendix 5) records the frequency of this memory order and shows that 7 out of 13 participants recounted the field trip first and a further 2 had it 2nd and 3rd, the other 4 remembered with a picture prompt but once remembered, details were used in descriptions. The cave trip also generated strong memories, with 9 out 10 who visited it, remembering it amongst the first 3 memories and the other one needed a word prompt. It is clear from this table that strong memories occurred for field trips and outdoor classes and that some assignments and debates were also relatively prevalent in the graduate's memories.

It was difficult to measure memories from classroom lecture sessions but the general trend was that very little detail about these was remembered, but all of the participants remembered some of the theories that the classes pertained to. How these memories relate to learning is complex and will be

unpacked further in subsequent chapters (5-8) as I asked the participants what learning they constructed from the various sessions.

A notable phenomenon that emerged from the data was when participants gave a very detailed description of an experience with a significant depth of learning associated with it. A surprise about these was that most of the participants experienced them and some experienced several of them. They used a range of different terms to portray these experiences. These included "eye opener" "Aha moment", "Special moment", "pin drop", "never forget that" and "blown away by that". They also used rich descriptions for these moments including the location, where people were sitting, the sounds, the atmosphere, colour and the emotions portrayed both for themselves and for their perception of others in the group at the time. Other words that are used for them include episode, occurrence, phase, encounter, experience, and insight. A literature search was conducted to illuminate these terms but it was found that most of them were used in popular English and their use was not so prevalent in the academic sphere. However, these concepts resonate with the literature on deep and meaningful learning (Biggs & Moore, 1993; Moon, 2005) and they are also congruent with concepts described in experiential learning literature. Examples of this is Greenaway's (2010) playing card technique of unpacking a special moment to enhance learning and Mortlock's (2000) descriptions of intense adventures and the emotional connections that can be made with nature. From the interviews, it is clear that memories of events have been stronger when emotions were engaged and in many cases, the positive emotions produced more detailed descriptions of memories. However, it was unclear how intense the emotions were during recall when compared to during the event. Most of the narratives were rich in detail and they described the emotions happening at the time of the event more than the emotions happening at the time of recall. From this, I infer that emotions at the time of the event can have a significant influence on memory of the event. I note that Walker Vogl and Thompson (1997) used diaries to record events and the very act of writing the diary will result in participants articulating those emotions and therefore putting them into the cognitive domain of Damasio's (2009) Emotion-Cognition model. This would influence memory in itself. I think that the richness of my participants' descriptions, recalled without any diaries having been written (participants were checked and none were diary keepers) indicates when strong emotions were present during the events and there is a strong relationship between the presence of these emotions and the level of detail in the memories. This concludes the initial impressions I gained from the data. These included principal memories for each participant, the order of recall of the activities and sessions, and distinct insights, which identified diversity in the participants' memories and learning. The common themes were identified and these

form the basis of the next four findings chapters. Since then I have read the transcripts numerous times and used NVivo to identify themes and patterns as described in the procedures section of Chapter 3 Methodology.   The next four chapters (5-8) will expand on the emotions groups further, as these were the most compelling insights that emerged from the data and form the strong foundations of my conclusions.

CHAPTER 5 POSITIVE EMOTIONS

Positive emotions were the most prevalent in the interviews. Positive emotions in this study include the ones on the right hand side of Scherer's (2014) Geneva Emotions Wheel. This chapter discusses the emotions linked to enjoyment, excitement and passion. I concur with what Izard posits about the distinction between these terms, and I have stretched the boundaries further for the purpose of this study. During the initial manual concept count of conversation items, I noticed a distinct difference between the use of the words and concepts to do with the three themes enjoyment, excitement and interest. These concepts are inextricably linked, but being able to separate them in the interview responses has been a useful exercise. Scherer's' wheel was used to group the positive emotions for the analysis. It was evident that the different groupings had different levels of emotional control and its likely these aligned with level of cognition about the emotion at the time.

Fredrickson's (2001) theory supports this research as demonstrated by the more detailed descriptions that were recounted, when memories of positive emotions were brought up. I also found that the positive emotions broadened out into a wide range of areas and that the subjects often depicted a sense of well-being along the lines of emotional satisfaction and emotional intelligence. Firstly, this chapter gives a description of the Manual Concept Record and the NVivo word stem counts of the positive emotions. Next, examples from the data are used to support observations on the field trips, the outside activities, the class activities and the assignments. I have examined these observations according to the emotions experienced at the time, the learning that came out of the session and how the graduates are applying that learning now. Results of the Manual Concept Record and the NVivo similar word counts for positive emotion word groups are summarised below.

Table 5 Summary of Positive Emotions Words

Emotion word group concept	Word examples	Manual Concept Record	NVivo analysis including similar words
Positive emotions	Enjoyment happy	50	121
	Excitement awesome	31	75
	fun	26	99

	good	15	250
Passion emotions	like	39	688
	Passion love + similar words	16	69
Emotions	The word roots emoti* or feel*	33	229

From the Manual Concept Record (Table 3 Appendix 5) and the summary above (Table 14), all the participants referred to the concept broadly known as emotion at least once and it was used 33 times during the 13 interviews. On a wider search for related words on NVivo, (including words such as feelings), participants referred to emotion concepts 229 times. This is in congruence with the topic of the interview conversations and is what was expected. Table 3 shows the positive emotion words and these included a broad vocabulary such as enthusiasm, funny, relaxed, inspired, awesome, cool and so on, but these were narrowed down to the concepts above for the purpose of this study. The thesaurus search (Table 7) was used to group the words into enjoy excite and passion and Scherer's (2014) Geneva emotion wheel gives these groupings academic credibility. All participants used all the positive emotion concepts (enjoyment, excitement and having fun as an indicator of these) in their interview conversations as shown in Table 15. In addition to this, the participants' references to enjoyment and excitement tended to demonstrate a more subconscious element and were less in their conscious control. This resonates with Scherer's Wheel and the psychology of emotions. Table 15 represents an NVivo search for all similar words and it shows how many positive emotion words the participants used. Table 16 gives specific examples for participants. Each section below will discuss the concepts and word counts and relates to Table 16 to identify enjoyment emotions in relation to trips sessions and content. Quotes from the data demonstrate insights.

Enjoyment Emotions

All 13 participants mentioned enjoyment emotion words. Participants referred to enjoyment emotions 50 times according to the manual concept count and 98 times with the NVivo word stem count.

This mystery field trip is described in the appendix, and the word counts show that all of the participants acknowledged that they enjoyed it. The comments were all mainly in the pleasure segment of Scherer's (2014) Geneva emotion wheel during most of the trip. All of them remembered

it and many of the recent graduates from the last 6 years or so remembered it in detail. From Table 16 we can see that all participants had enjoyable memories from the field trip ranging from Andy's cruisy experience to Mary's amazing experience, with Barry, Heather, Mary, Robbie and Poppy referring to it as the highlight of the course.

In the example below, Robbie describes detailed memories about the field trip, which indicate a high level of enjoyment:

> Robbie "we had to raft up and try and get our way round to the other side of the island, er that was definitely a highlight, er the other highlight was swimming in to the cave, I really really enjoyed that and then of course having to build our own shelters and do the tribe thing, what was that called, yeah the nations at war sort of thing, yea that was really cool and really creative and yeah really enjoyed it."

Heather uses a range of different emotion words to describe her emotions about the field trip, which matched the affective dimension of Scherer's (2005) components adequately:

> Heather "er, My emotions were generally pretty positive, because I love, like, doing stuff, and our group were pretty good… I don't know whether we self-selected or whether we got put into groups, I can't remember. I can picture this boy, I can't remember his name now and he was a real charger and super positive, so we were just like foaming and fizzing about doing the activity."

The discussion was about the rafting activity and the metaphor and learning outcomes I had planned for it. On further discussion about this activity, Heather revealed a deeper enjoyment and some high impact insightful learning moments:

> Heather "Uhm I really really enjoyed it, like it was really really good..because it was sort of a game..but I was also like, I know like what's going on in society but this is kind of fun right here right now, it was fictitious so I was going to enjoy it.. it was really fun erm when others were swimming and failing and you know, we didn't rescue them. (*Laughs nervously*). They wanted to hop on our raft and we like pushed them away, I guess it goes back to the refugees that are trying to get away, they are all piled on a boat trying to escape, and er, we were essentially, even though it was game, we were exhibiting, probably the things that are actually happening, like it didn't take us long to sort of become the people that you didn't think you were going to be!..."

All graduates conveyed the importance of the field trip, but that would be expected because they studied outdoor education and would place a high value on field trips. However, the examples below show interesting extensions about how they applied learning from the field trips into their

practice. Fran went back to the same cave that I had used for our session:

Fran   "yes… I've taken groups back there since so I definitely… like it clicked as a place that was cool to take other groups to… and I remember exploring education for sustainability maybe."

Heather had just been offered a teaching job and was planning her next year:

Heather   "Yeah I will totally use Darren's lifeboat in social studies.. I get to teach social studies and I'm totally going to take that, the beans and the auction. You can do that with social studies too, you know or an English class, it doesn't have to be just outside."

Lucie uses the experiential techniques she was taught frequently with her class:

Lucie   "And then I let them figure it out over time, I let them figure it out the way you did with us. I let the kids argue and I just sit there and watch and just before it gets to pear shape I stop them and say "what's happening right now, what aren't we doing?' and they go "we're not working together, there's no leader, there's no…" that sort of thing. And they say, "Cool lets change it and let's go.."

As well as the field trip, numerous classes occurred outdoors, and experiential methods were used. Poppy describes how she felt about one of these, which was designed to generate political discussions (see Appendix 2).

Poppy   "yeah, I enjoyed that activity, I felt quite invested in it.. I erm… I think after a while I figured out what was going on erm but…. I think I did a lot of… for want of a better word, judging (*laughs*), yea, not nice to do but yes you know looking at, at the people in the groups and where they were sitting on the spectrum was interesting and thinking about myself as well, you know, why I was answering what I was answering and how that made me feel, because some of the questions were pretty….. well it was all very political so it was quite confronting."

Poppy's description included a range of emotions on Scherer's (2014) Geneva Emotions Wheel, both in the enjoyment dimension and in the areas of apprehension and surprise. She also demonstrated awareness of both affective and cognitive components from Scherer's (2005) components list. Andy talked a lot about how he uses these ideas in his teaching now and how he was complimented by some year 9's during his teaching placement:

Andy   "the key point that I had at the end of my er placement , I had at least 6
        students come up to me and say thanks for taking us out and for doing
        extra trips.. and these were only year 9 students, students that don't
        actually say much cos they're too cool to talk to each other.. I found that
        really inspiring for them to say ah we had a lot of fun we enjoyed it… we
        hope you come back…"

Enjoyment Examples from the Theory Classes

There were abundant examples of enjoyment emotions and learning from the outdoor sessions, but

I expected that because it is an outdoor course. However, I was pleasantly surprised by the number

of conversations about theory sessions and enjoyment, and theoretical material was remembered

by the participants, even from 15 years ago. The topic of social and education theory could be

perceived to be a little dry by a group of outdoor enthusiasts, but their memories of it are strong and

indicate interest. Lucie observed this amongst the whole group:

Lucie   "yeah it's involvement and it's enjoyment and I think when the teacher's
        enthusiastic about something it rubs off a bit, so I think maybe the way you
        put it across, like the way it was being taught, made us all… because I
        remember all of us being really engaged, and enjoying it but yeah… it's a dry
        boring sort of topic, you know what I mean?"

These memories would be in the enjoyment sector of Scherer's (2014) Geneva Emotions Wheel, but

in the conversations, there were definite references to the word interest, which according to the

previous section, implies more cognitive engagement. I was quite taken aback by the number of

references they made to the theory and to their interest in it. They did not always remember the

names of the authors we studied but they did remember the theories and knew where to go to look

them up. Lucie's comment on teacher passion is supported by numerous researchers (Davis, Sumara

& Luce-Kapler, 2008). The graduates had even noticed that my aim was to teach them that getting

engagement was an essential part of teaching for learning. A conversation with Harry, exemplifies

this:

Interviewer   "when you said engagement, what sort of engagement do you
                mean?"

Harry   "er… an interested or   er excited student learns a lot more than a student
        who's been just sitting there in a room inside….. I keep getting flashbacks..
        (*laughs*)"

In addition to this, many of them had made use of the book of theories that they had made:

Rob   "there was [sic] some good entries in there and I recently actually used it, so I remember going back to Piaget and Vygotsky and --- cos I was doing something about you know, constructivism."

An indication of Robbie's pride in the book was that he had shown it to his grandma and had said she was really impressed.

Participants also portrayed enjoyment emotions about some of the assessment tasks. Memories of these tasks being enjoyable were strong and engagement in completing the tasks was high. Barry recalled being enthusiastic about several of the assignment tasks. On the curriculum essay, he said:

Barry   "it started making me think about all sorts of things like you know the curriculum's a guiding educational document, how do you decide what's important in education and what purpose does education serve and why educate, and all that kind of stuff. I remember doing heaps of research for the essay we did for this, and it was one of those assignments that I really actually enjoyed doing because, there was so much information that I wanted to cram in there but I couldn't"

Barry continued, unprompted, about his thoughts and learning on the bigger picture of education:

Barry   "evolution of education, bigger picture of education, societies and how they're formed, solving puzzles, positive psychology, and the workings of a persons brain, of a child's brain and how that affects their learning and lots of questions, I remember thinking what function does education serve in a society, does it perpetuate, does it progress, is it people focussed and then from the dream project as well, what is the dream outcome for educational teaching, where are we all going with this big thing, is it going the way we want to go or is it just perpetuating what we already have and is it a good thing or a bad thing, or … yea"

Andy mentioned enjoyment in conjunction with the dream project assignment, but also acknowledged how he continues to use the theoretical knowledge he gained on the course in his work and life today:

Andy   "I actually enjoyed that project (talking about the dream programme planning assignment) partly cos I was … er Amelia and I had quite similar ideas and we were able to …. We used those different theorists that we had and I vividly remember working on Vygotsky.. yeah… and I laugh because I sort of use that all the time… I sort of use it everywhere…"

This example is supported by Frederickson (1998, 2001), who alerted us to the beneficial effects of positive emotions on learning, providing the pleasure of satisfaction and a stimulus for further exploration.

Excitement Emotions

Excitement concepts were referred to 31 times and the NVivo word count identified 71 excitement related words. Excitement is on Scherer's (2009) developmental wheel as a more intense and slightly less conscious emotion than enjoyment. Enjoyment is a more relaxed emotion and I think a balance needs to be struck with excitement as too much of it could lead to distractions and detract from learning. In some of the interviews, the graduates noted that they were able to get excited about something that was initially less appealing, thus indicating they had some ability to control excitement to an extent. All participants mentioned excitement apart from Rob and Heather. Rob tended to use words like interest and engagement, and Heather tended to use the words fun, foaming, fizzing or boofing, and laughed when she was describing something that she had found exciting. From Table 16, we can see that the descriptions of excitement ranged from the amazing, anticipation, surprise and mystery of the field trip to the creative and philosophical aspects incorporated into the assessments and their link with real world phenomena. Jason could not remember the details of his dream project but he could remember that it felt like a real possibility:

Jason   "yeah I think like erm…..erm….I'm pretty sure like it felt like it could actually happen, I guess like a dream project it was almost realistic, yeah. It was achievable as well. Yeah so it definitely felt like maybe one day this would actually happen"

And he found that motivating:

Jason   "maybe enjoyable, probably, I guess uhm for me if it's enjoyable I find it easier to do or I'm motivated to do it. Yeah whether it's hard or easy as long as you get excited about it, it doesn't really matter, you get into it."

Returning to the field trip, excitement is one of the emotions that the mystery element of the trip aims to engender. The fact that it is a mystery and that many of the activities have an element of surprise, causes it to evolve into an exciting experience for many. Numerous graduates mentioned that feeling of anticipation, not knowing what was going to happen next, and therefore engagement in the activity was almost automatic. Poppy describes the experience of swimming in to the cave, and how it had an impact on the class. Her learning from this was about how to engineer group bonding:

Poppy   "erm, I was.. I was pretty excited, about getting in the ocean again, I love the ocean. And sort of full of anticipation about going right into the cave and not knowing what we were going to do in there added to this and erm……….. it was quite a special moment as a class because we were all in such close confines and we actually did talk when we were in there. I thought it was probably more than just what we were talking about, like where we were… yes that sort of had an impact on the class."

Poppy   "if we were looking at it now, it was probably, it was a good team bonding sort of thing, sort of moment, activity."

All of the graduates talked about applying their learning to their current practice, but in particular, Lily noted how the element of challenge, as in traditional outdoor education, was still very pertinent in her practice today:

Lily   "maybe they've had some challenge with the group or it's been a challenging day outside their comfort zone in the activity that they are doing, you know to come out the other side and to talk about it and come out with a high number like wow that was so cool and some of the comments, like I felt at peace when I was out on the water and like that makes your day, and that why I'm in the job… that's why I'm in it for myself too"

Rising up to a challenge can elicit feelings trepidation but also of pride and satisfaction and it relates to the pride sector of Scherer's (2014) Geneva Emotions Wheel.

Numerous further examples of excitement and learning sprang out of the cave trip. Before the 2011 earthquakes, I used to take the students into the land-based cave for a half-day session and read them poems in there about the earth and life. I could not use this cave after the earthquakes as it collapsed but I replaced it with a swim into a sea cave, which is possibly even more ethereal and stimulating and is described by Poppy in the quote above. Barry and Jason's groups did not do a cave activity due to aftershocks and Heather's group missed it because the sea was rough. The insights I have gained about the sea cave have lead me to believe that it is a good replacement for the land-based cave. However, I gained some very useful insights into the anticipation and excitement about going into the land-based cave and the learning that came out of that visit. More of these are discussed later in the section on impact learning moments. All the graduates who did this activity were from at least 6 years ago and memories were often vivid. Harry asked me if I still did the cave session before we even started the interview and then we unpacked it further in the interview:

Interviewer   "Can you remember what you felt before you went into the cave?"

Harry   "Excitement… I knew of this cave, I'd heard lots of stories about it , I'd never been in it, so it was something, a place that I knew about but never had got guided to take me in it and I remember that… I can't remember its……. I

> think it was an element about light…is there an element of light in trying to teach in the dark or?…"

Interviewer   "yep"

Harry   "did everyone turn their torches off or something?"

Interviewer   "Yeah we did turn our torches off. We had candles"

Harry   "yeah… which changed the environment. It was all about …adding a different experience to a lesson and how to make it interesting and …..which was the lesson wasn't it?"

Interviewer   "yes it was"

Harry   "Me not remembering the content was not so ….. because it wasn't about the content , it was about the ….. teaching way"

Interviewer   "method?"

Harry   "yeah"

Some of the graduates had tried to apply the mystery element in their teaching and some had even used the same cave that I had used:

Andy   "But I remember it being quite a neat experience and … sort of finding out that you can do these quite crazy outdoor trips without actually going that far away."

Interviewer   "yes"

Andy   "er.. to places that people had never been before and that can be quite special."

Andy had taken a group back to the cave, and Lucie had tried to apply the surprise element into her teaching:

Lucie   "Uh I often think when I'm planning and doing things, how can I make it an experience, instead of just sitting at desks and doing things, erm how do I make their learning be something they value as opposed to just, here's a work sheet, go. So I try and use it, I probably don't do as much as what I'd like, but that's ok, I definitely use all sorts of things. I have used all of those activities as well." (speaking about various activities we had used in sessions.)

Excitement Examples from the Theory Classes

Although it seemed quite straightforward to generate enjoyment in some theory classes, excitement seemed like a harder challenge. However, a good number (8 out of 13) of the graduates experienced excitement about the theory and assignments. Table11a shows us that the book they had made about educational theories had been used a lot and they valued the fact they chose who to study. The debate about how to mark the book entries was well remembered and ranged from 'heated and going on for weeks" to "quite chill" depending on the year group. The memories of the dream project assignment were generally that they enjoyed the freedom and the fact that they

could create lessons which aim to have high impact and a fair number commented on the fact that the group enjoyed seeing and hearing about everyone's project. Meg was engaged in the book assignment:

> Meg   "I felt very excited about being—published and I say that loosely, I mean I I just thought it was great that I'd actually contributed to a piece of literature that other people were going to read and get something out of--- and because I knew that it was going to be written up and made into a book, I wanted to make sure that mine was really good."

Meg also noticed the engagement of other students in the group when we did the presentations on their dream programmes and the theories they had referenced in the process:

> Meg   "I think in the year I did the paper I know when the presentations were being done at Rocky Falls camp and the students were really excited about quoting the theorists and in particular, modern day theorists, so it was quite obvious that they were into it- and that they had learned who these theorists were and what their different theories were.

Barry demonstrates a keen excitement about everything and this extended to the work we did on educational theories:

> Barry   "Recently I remember learning about Ako and going ah my goodness, this is what Friere was talking about, different people would come up with a different idea but I love the fact that it's transcultural, you know. So yeah, I think it was really exciting for me to just hear all these different ideas and all the ideologies that came out of those different theorists are amazing."

Mary used the word exciting for both her and her assignment partner and her classmates, when she talks of the dream project:

> Mary   "So that was a cool kind of activity for me and Karen to do cos we were not like super arty or anything but let's like try something a little bit different just so you know it's exciting for us and it's exciting for our classmates as well you know, were not just all doing the same thing. So that was an awesome experience."

Andy took the excitement idea one step further and applied it to his teaching placement. It sounded like he really got engagement from the students, but was told by his mentor teacher to calm it down a bit:

> Andy "Well I think while I was on teaching placement I actually did a lot of…. I had a lot of time to do thinking around teaching and some of the I suppose classroom sessions that students had been used to sitting down.. I tried to change… and stand up and move around… to the point where the associate teacher had a couple of words to me.. he said you need to just calm it down.. (*laughs*)"

As Andy describes, excitement can be elicited through teaching delivery style and it is a more intense emotion than enjoyment, and there are potential pitfalls with getting learners over-excited. However, I think there can be a balance and I believe that excitement is a step on the way to interest and engagement (described in chapter 7 later and supported by Hidi's model of interest development, 2006) and it leads to a deeper passion, which fuels motivation.

Passion and Love as Positive Educational Emotions

The emotions of passion and love were spoken about with more depth and all participants mentioned a passion concept in some form. It was related more to general concepts than to actual experiences and seemed to develop more as a long-term phenomenon. Passion and love are situated on Scherer's (2014) Geneva Emotions Wheel towards the lower end of the control axis, indicating that they are more subconscious. However, people do have a cognitive aspect to their passions; they are aware of them and driven by them to the extent that there is sometimes a feeling of being out of control. However, this drive does seem to motivate and aid learning. The graduates tended to use passion and love in a futuristic way or about work in the outdoors in general. The word passion was used more than the word love but I have grouped them as they were used in the same context. I could use up many words debating passion in education and discuss the long arguments for and against it. I think the mantra that states that reason and passion are different is well outdated (Hannaford, 2005; Immordino-Yang & Damasio, 2008; Pekrun & Linnenbrink-Garcia 2014). From Damasio's (2008) Emotion-Cognition model, we can see that we use our emotions to learn and think, and passion about an area of interest, is the thing that fires people up and motivates them to work more on it. I have no doubts that my passion about learning in the outdoors has fuelled my years of working on this study!

The emotions of passion and love were spoken about with more profundity. TheManua Concept record (Table 3 Appendix 5) showed 16 references to passion and not all participants mentioned it, and love was used 8 times. The NVivo word stem search (Table 8 Appendix 5) found 229 references to passion or related feelings and 688 references to the words meaning 'like' and all participants used this word frequently. Caution must be taken as "like" can also be used metaphorically or just as a linking figure of speech. All graduates used a passion or love concept except Meg but Meg talked

about being inspired a lot and I believe there are parallels there. This section will analyse participant references to passion.

Lily talked about how an assignment project engaged her passion, and also made her think further into her career:

> Lily "I remember having full scope to use my imagination and creativity so it was really cool to be able to use your landscape, like, your back yard. And use things that I was passionate about, so I could pursue that passion."
>
> Interviewer "Sure, so you mention the word passion there, so how did you feel about that project?"
>
> Lily "I loved it, I think it was a really good scope for me to have a bit of a play around, with something I might like to do in the future and I think it did help guide me to come into the outdoor education teaching."

Lucie noted which aspects of the whole degree she had felt passionate about and alluded to her belief that the passion linked to her doing well in those aspects;

> Lucie "Like I loved the practical papers obviously but, these two, the education ones and the adventure therapy, those were the two that really got me, the two that really touched me I think and therefore are the ones that I did the best in. and so I did well in it because I loved it, and I think there's like a huge link between them…"

Francie noted how her passion for working with children on a project helped her teaching, and talked about how a passionate teacher can engage students:

> Francie "Yeah I think yeah definitely curiosity from the classroom sessions but I think when I'm actually out there applying it like working with the school groups. I think I was at Chisholme school doing ABL (adventure based learning) stuff. I think that's when the passionate side comes out because maybe you've been curious about learning about it but if you're really passionate about it you're going to do well and you know, have fun teaching these kids what you've just learned and I think if you watch someone instruct or teach you can tell if they're passionate or not… just by how they're doing it or if they're smiling or having fun or being a bit silly…erm   so I think it's the more practical side that the passion comes out"

Mary observed others passion about certain presentation assignments;

> Mary "But something different, but there's always that different personal element about what they're really passionate about, which is what I think really stood out in everybody's individual project."

Francie had developed a great interest in passion for learning and had continued it into her practice:

> Francie "Um but I've just, in my teaching philosophy is all about finding out what each student is passionate about and letting them tell their stories and um even if it's nothing to do with school, just talking to them about rugby or whatever, because I think if they are passionate about something, that's not to do with school, you need to know so that you can engage them… some other way, rather than just brushing it off and yeah."

Barry had applied this a step further when he had noticed that just acting passionately about a topic could also engage interest:

> Barry "But I tried to answer all his questions in just a really passionate way because he was really keen on it. Erm and as that happened, more students actually gravitated to where we were and started listening in and then asking questions until we got to the point where pretty much the whole class shifted from seated stations around the class to where we were and it just became this classroom discussion."

Many of them depicted a passion for the outdoors and for outdoor teaching and this is represented by Poppy's life ambitions statement; (she was working for an envirnmental organisation at the time and is now teaching)

> Poppy "Yeah , my soul (*laughs*) yea it's deep down inside, I, every day, I spend about 6 hours a day some days, walking in the bush by myself and just being totally at one with the world and I just feel so sad that other people aren't going to be able to experience that, I just need to help in some way, it's sort of that desire, yeah…."

> "….you know there have been moments when I am in the ocean and I've just fallen in love with the place and the same for the bush, the hills, (*laughs*)"

Summary of Positive Emotions Chapter

In summary, this chapter has reported on some of the positive emotions as recalled by the participants. It included narratives of experiences from the field trips, outdoor sessions and indoor sessions and it drew out the emotions of enjoyment, excitement and passion within these stories. Highlights include the excitement portrayed and the way the participants used words like special touched, amazing, peace, love, passion, and fun, which indicated a compelling engagement in both outdoor and indoor sessions and even assignments. This compilation of positive memories merely scrapes the surface of the participant's responses. The use of positive experiences to enhance learning is supported by the work of many positive psychologists (Fredrickson, 2001; Seligman& Csikszentmihalyi, 2000; Berman & Davis Berman, 2005; Allen, McKenna & Hind, 2012) in that it broadens and builds psychological skills, enhances memory and aids learning. Hidi & Renninger,

(2006, p. 113) state that several studies have asserted that positive affect contributes to cognitive performance (Ainley et al., 2002; Krapp, 2002). Most of the graduates from the degree have memories of positive experiences and are now passing on passion for the outdoors and life, to people in some way. This may range from being environmental warriors to extreme adventurers to inspiring teachers and role models. That passion is developed and enhanced over the three years of the degree and it appears that it has helped their motivation for learning, based on the breadth of learning experiences they have recalled. In the next chapter, the focus is on the negative emotions recalled and it will be intriguing to see how these compare to the passion and energy portrayed in this chapter.

CHAPTER 6 NEGATIVE EMOTIONS

This chapter will discuss negative emotions, which were recalled with considerably reduced frequency in comparison to the positive emotions. The term negative emotions in this study refers to fear, boredom, apprehension, frustration and annoyance. All of these except apprehension, appear on Scherer's plotting of emotions on to Russell's Circumplex model (1980) as discussed in the Literature Review (Chapter 2). Figure 3 from the review has been reproduced here for ease of reference.

Figure 3 (copy) Scherer's Plotting of Emotions on Russel's Circumplex
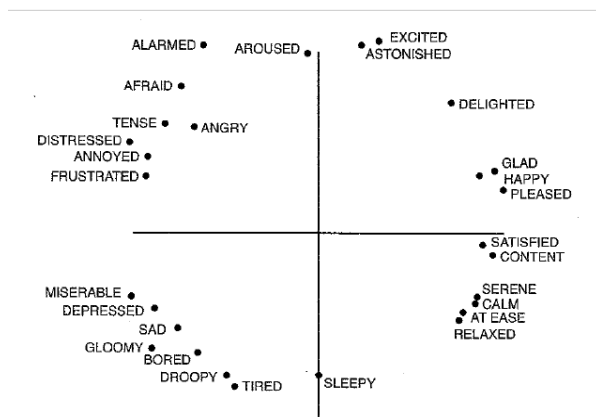
Source: Schuman & Scherer (2014, p. 28)

In all cases discussed, participants modulated the emotions either at the time or on reflection soon after the experience. Modulation is a mental shift that we make in order to ameliorate emotions, (especially negative ones). This is expanded on in this chapter and related to Jacobs and Gross' (2014) process model of emotion regulation, which is discussed in the Literature Review (Chapter 2). The negative emotions that were evident included fear, boredom, apprehension, frustration and annoyance. They are discussed in this chapter in relation to field trips, class sessions and assignments. The final section closes the negative emotion discussion with a narrative about comfort zones and their history and current place in outdoor education. Critical questioning of such models allow us to view their weaknesses yet acknowledge their strengths, and careful comfort zone extension can influence transformative learning.

The manual concept counts are shown in Table 17 and they were significantly lower for negative emotions than for positive emotions. This is to be expected, as the aim of the course, which is the focus of this research, is to foster learning in an enjoyable way and attempt to facilitate deep

learning. The NVivo similar word count also showed lower incidence of recall of negative emotions.

Table 7 Summary of Negative Emotions Words

Emotion word group concept	Word examples	Manual Concept Record	NVivo analysis including similar words
Boredom	Bored boring flat	2 (indoor) 1 (not)	20
Fear	Scared fear	3	20
Nervousness and apprehension	Nervous edgy apprehensive	7	13
Frustration	frustrated	11	46
Annoyed/anger	Annoyed angry	2	13
Comfort zone	Comfort zone	7 (5 one person)	9

Frustration and boredom were the two negative emotions mentioned most but they do not appear on Scherer's (2014) Geneva Emotions wheel. They do appear on Scherer's plotting of emotions on Russell's (1980) axes. A quick recap will tell us that Scherer used valence and control/power as his axes and it is likely that annoyance and frustration would appear in the same quadrant as anger but nearer the centre of the wheel as they have reduced intensity compared to anger. Russel used valence and intensity as his axes and when we look at Scherer's plotting of frustration and annoyance on to Russell's wheel, they do appear on the negative side but with only medium intensity.

The incidence of negative emotions being modulated, was high, especially the emotion of frustration, which was modulated in all cases. This happened either soon after the experience that elicited the emotions or later when recalling the memory. This can be further elucidated by comparing it with the process model of emotion regulation constructed by Jacobs and Gross (2014, p. 186), which is described in the Literature Review Chapter 2. The interviews were designed to elicit the participant's instant responses first and then they modulated them in their subsequent sentences. The elements of the model, which were most relevant to the graduate's modulation, were cognitive reappraisal and response modulation. Cognitive reappraisal is the changing of ones appraisal of a situation in order to reduce its emotional impact. Response modulation is altering ones response to an emotion. It appears from the many modulation responses, that participants had come to learn that minor frustration was part of the experiential method used at times. This is

illustrated by quotes used in the frustration section below, and is supported by the fact that many participants laughed or smiled when they were talking about the negative emotions. It is also possible that when they modulated frustration in their memory recall, it was influenced by their desire not to come across as negative in the interview. Jacobs & Gross described prior work (Richards & Gross, 1999, 2000), which indicated that out of the above modulation methods, cognitive reappraisal supports memory and learning more than response modulation and further research would need to be conducted with these participants in order to ascertain which modulation response they were using. As negative emotions and modulation were not the main objective of this research, this will not be discussed much further. Many of the participants apply these methods to their teaching now but they recognise the benefits of favouring the positive in the emotion balance.

Fear Emotions

The manual concept count shows that the concept " fear" was described three times and only by Mary. The NVivo similar word count showed that the fear or similar words came up 20 times but most of this was the discussion with Mary, which is described here. The words "fear " and "scared" were used by Mary when she described a situation in which one of the 3rd year field trip assistants had jumped out on her in the dark, dressed in a furry suit and making seal noises! Mary's description of her fear was quite vivid but she laughed as she described the realisation that it was a trick and she related her experience to some of the theory we had learned.

> Mary "Ah yeah… and then right my shoes broke and it was late and then I was like … Leela pops out in the wuki costume and I literally thought it was a seal, I panicked and my heart was beating and I literally ran for my life, cos I thought I was going to die."

This is supported by Seligman and Csikszentmihalyi (2000) when they posit that negative emotions tend to override positive ones, stating that this would make evolutionary sense as the negative emotions may be about learning more urgent lessons such as self-protection from wild animals. Fredrickson, (2001) also supports this by stating, "In a life threatening situation, a narrowed thought-action repertoire promotes quick and decisive action that carries direct and immediate benefit." (p. 220). Linnenbrink (2007) posited to that both anxiety and anger might interrupt the ability of the student to remember information; because of the way those emotions divert the learner's attention. In Mary's case her initial fear was very real and it over turned any other emotions that she had at the time and stayed in her mind as a vivid memory. Mary also used the word "scared" in her description of the boat jump and the solo, but in both cases, she modulated it to her becoming "determined" for the boat jump and having "fun" on the solo.

The other use of a related word "fright" was made by Barry when he described his group hiding from the others during the night walk. None of the participants mentioned fear emotions during conversations about classes or about assignments. The course does not have an exam and there was no mention of the commonly researched academic emotions called test anxiety (Pekrun, 2014).

Boredom Emotions

There were three references to boredom as counted by the manual concept count, two of which were in classrooms and one, which referred to not being bored at all. The NVivo similar word count revealed 20 counts of boredom related words but that was because the word was repeated frequently during the conversations around boredom related concepts. Barry referred to boredom in relation to a prior description of the concept of boredom. He used the word "flat" to describe the atmosphere on the field trip, as darkness fell, and when they were briefed that they would be doing a night walk.

> Barry   "Interestingly my emotions throughout that whole scavenger hunt night went from probably flat to quite high, I wasn't peaking, or amazingly excited and high on life but I was definitely in a space that I probably initially didn't anticipate being in, it was a lot more fun."

A few other participants recounted similar low phases before the night walk (Mary, Heather) and all of them reflected on how they were surprised that they had actually enjoyed it or made something of it. This concept of making the 'most of it' resonates with emotional intelligence skills (Mayer, Salovay & Caruso, 1997) and is congruent with the underpinning philosophy of positive psychology (Seligman & Csikszentmihalyi, 2000).

When asked about the classroom sessions, memories were vague, but many of the participants had remembered most of the debates and discussions that we had had. Meg recounted how a certain classroom had affected most of them:

> Meg   "Em I know a couple of times we had really dreary classrooms and I specifically remember one time when we were over in P block and you actually asked the class, "what do you think of this classroom?" and I know that day we did a couple of group activities and stuff but I don't think I can remember too much of it, about what we did in that class…"

As far as other classroom sessions went, memories were generalised. Participants liked my use of colour, stories, activities and debates but have no memories of boring sessions, because either they did not happen or that they had forgotten them! I would like to posit that it is the latter because we did have about 10 classes in the course. Lucie aptly clarifies this sentiment when asked about the boring bits of the course:

> Lucie   "No. not at all, maybe they've gone off the radar. (*laughs*) but I don't remember any I don't even remember being bored doing the assessment.Yea yea so I don't actually remember being bored, I don't remember not enjoying anything,"

It would be hard to find a research method that identifies the difference between there being no perception of boring sessions and there being boring sessions but they were forgotten. I know that the course has at least 12 x 2hr classes. About half of them are experiential and others are lectures. Many of the classroom sessions have been forgotten and the ones recalled the most were debates and interactive activities.

In terms of the participant's application of this learning, Lily identified how they strived to be creative in their presentations:

> Lily   "and I think everyone was trying hard to do it in a creative way that wasn't boring, that was almost like a challenge in itself."

This supports the idea of role modelling creative delivery methods for students to learn from. All of the participants described some of their own practices in which they had strived to reduce boredom and create interest and engagement.

Frustration Emotions

The manual concept count revealed 11 cases of frustration being mentioned by 6 out of the 13 participants. The NVivo data concurs with this with 6 participants mentioning frustration 24 times. In all cases, it was quickly modulated in the same part of the conversation.

Modulation is when emotions are felt and then adapted as the participants process the experience cognitively. This aligns with Jacobs and Gross' (2014, p.186) process model of emotion regulation and Damasio's emotion/ cognition model (Immordino-Yang & Damasio, 2008, p. 193), both of which have been explicated in more detail in Chapter 2, the Literature Review. Participants modulated their emotions frequently. It is difficult to ascertain whether the modulation was happening during or soon after the experience or whether it was happening many years later during the participant interviews. From my observations on the field trip and in discussion classes, it is evident that emotional modulation is happening for a large number of the participants soon after the event as most of this teaching uses experiential methods, which place great emphasis on the reflection part of the lesson. This is usually conducted soon after the experience, at least on the same day. Most participants used similar language and facial expression when discussing frustration; that is they often had a wry smile on their face and a glint in their eye as if they knew it was all part of the process. Jason describes this in detail in his recall of his group's shelter leaking in the night:

Jason   "Yeah I think erm….just the feelings when you are, I guess wet, yeah thinking about it yea it's quite.. erm ….yea…. I guess … for me it was a little bit frustrating, like being wet and trying sleep and you can't sleep, but then at the same time…. You're just in this little shelter and it's pouring down with rain and it's kind of cool at the same time… but yeah…I think that's one that pretty much stands out… I don't know for me maybe there's always two sides to a feeling, there's experience and your feelings around it yeah just exciting but then frustrating, yeah."

Robbie described a typical outdoor problem solving activity and a group's response to it, which

elucidates the frustration modulation process quite clearly:

Robbie "Frustration… I think everyone was feeling a bit frustrated because you know…"Hold it like this hold it like that, you're not doing it right", just a bit of bickering between everybody and then I think we sort of ended up getting a system going and got a few of them across."

Interviewer   "So when you got that done, what was the feeling around that?"

Robbie "er … what's the word…not excitement, joy but it was like relief…..celebration!"

Lucie recounts the frustration of a similar problem solving activity in a classroom, but her

modulation ranges from frustration to funny:

Lucie   "I remember it being frustrating but I remember it being funny and I think when I say frustrating I mean in a real positive way, you know good frustration erm , and I remember it being really challenging, I remember the learning coming from it because I remember thinking right when I'm giving instructions to kids, I need to be really clear because this is ridiculous (*laughs*). I remember thinking; yeah I remember learning coming out of it too."

Frustration was also apparent in the various debates in classes, especially in relation to the class

book-writing task, and whether it was marked or not:

Lucy   "I remember it getting heated (*both laugh*) and I remember who were the ones pushing for the A B C, and the rest of us were just sitting back thinking, 'what's up with you lot? why?" So there was.. we all got a bit silly with it I think; by the end of it I think we were all… not frustration…but like frustration in a funny way, like we were all just thinking, what like why why, what's going on and trying to get the point across and trying to figure out what the other person, why they wanted that and stuff. Yea"

Rob observed the frustration during the norm referenced assessment discussion and now has a keen

interest in fair standards based assessment:

Rob   "I can't … I'm not sure that I have ever been part of a norm referenced assessment… it just strikes me as being completely unfair yes……you know statistically it is right but still yeah you know we were up in arms against it."

Andy expresses frustration with an assignment but after pondering further, he realised its value:

Andy   "Yea and… it was quite frustrating because there wasn't a lot of … er I didn't have a lot of motivation or energy to put this thing together… but after a while I actually… and I wasn't interested in educational theorists until I found out about … that's what I was actually learning about and I kind of found that this was the .. the foundation of what I was actually doing and I actually needed to get into this and…"

"… like as much as I hated doing it at the time.. that there is a book that I used later to complete an assignment and I used the book and it's nice to have maybe not as detailed , but it was the foundation of all the different educational theorists that I use on a semi-regular basis, yeah and it's in my language."

Andy extended this observation to the use of debates and discussion in other courses in the degree.

He expressed an awareness of how heated debate could also be fun:

Andy   "It was a class with Stefan… erm and I don't actually know what the paper was (laughs) but it was a great debate, and we had this giant grandstand… we built a grandstand in the classroom and we had to move from side to side and it got quite heated but it was a lot of fun and you had to sort of argue your point…and it wasn't really about winning, well some of us thought it was about arguing your point and being the best but it was more about thinking about what you thought about this and that er could you change other people's views by what you said…"

Barry took it one step further by making a metacognitive insight into his own learning from frustration. He provides a good summary of the impacts and potential benefits of frustration. A skilled educator should be able to use it to engage but there is a risk of losing your audience.

Barry   "If I had decided to pack it in just then, I would have lost all the information I would have lost all the learning, so it's kind of like a knife edge, I can't say for sure because I only know the outcome that happened, but then I'm only speaking from my point of view and then what frustration does to me, like I can see how it can definitely be powerful, er later,"

Frustration appears to have a place in education, possibly because it creates memorable learning, but it also provides an opportunity for an educator to coach emotional intelligence skills. This can be extrapolated further into creating a society competent in conflict avoidance or resolution. However, it needs to be carefully monitored and the skilled facilitator plays a vital role in supporting the emotional modulation.

Nervousness and Apprehension Emotions

Nervousness and apprehension do not appear on Scherer's (2014) Wheel but they probably sit somewhere along the axis towards fear with apprehension having a slightly lower intensity than nervousness. The emotion word "tense" does appear on Scherer's plotting of emotions on Russell's (1980) wheel and that could be congruent with nervousness. The nature of the field trip was a

surprise and thus this could generate feelings of anticipation, which could be either positive excitement or negative nervousness. During the teaching, great effort is made to use surprise and anticipation in a positive way. However, as Peterson (2000) states, those with a more optimistic outlook may well interpret an occurrence differently from those with a pessimistic outlook. Everybody is likely to construct their own meaning from a situation. Harry's response to the cave trip depicts a nervous element, but his description of the impact of the trip reveals that the impact it had compensates for any nervousness.

> Harry   "It was definitely taking me out of my comfort zone.. it was… so many different levels of experience from ….. I mean the light element…. The…. erm…. The cold sand…. I remember the fear of wriggling through the back cave so that was part of…… that was after the lesson and people had to explore back there if they wanted."

> Interviewer   "Ye yea great… and as you came out of the cave, any particular feeling then?"

> Harry   "Erm… I just think like all my senses were heightened and that you came out and it was a little bit…. It was a feeling of….. erm…… ah it was an experience and obviously it had a big impact because I went and told… heaps of people afterwards… about this cave and it just opened my eyes to …. To where you can have a lesson…"

Fran's thoughts implied more nervousness but she also confirmed that it was quite an impactful experience and that she had taken people there since:

> Fran   "Em I was a bit apprehensive because… there was a hole in the ground, I'd done a little bit of caving before but it was under someone's house and people were saying watch for needles and.. and we found some beer cans I think and things like that… and spray cans and stuff on the ceiling but erm .. I obviously thought it was quite an impact, like it was quite a cool place because I could take people back there."

The mystery field trip is designed to play on anticipation, and this sometimes does elicit a few surprises, which could lead to apprehension in participants. However, the whole brief and prior preparation for the trip lets participants know that their safety is the biggest priority of the tutors in charge. As the group is second year, they have built a significant level of trust with the tutors and the tutors would not want to do anything that would compromise that trust. Andy describes a combination of anticipatory emotions using words like scary and safe in the same conversation:

> Andy   "Yeah… it was definitely a mystery and when we arrived and then sort of got told the history of the area, it was a little spooky and eerie…. Like it wasn't scary… but it kind of felt like you were sort of in this unknown area and although you were only 15km from home… you still felt a little bit isolated.. and yea… and kind of.. I don't know…within the group you felt quite safe

and so it was a nice environment to sort of share what you were thinking about and …."

Barry compared the mystery and anticipation to when he was a child, and this may provide a useful alternative method in adult education:

Barry   "So the Island and the whole imagery of the island as well, you know being there for a sundown and a sunrise and er walking out over the mud flats, and darkness and things like that. There was a real kind of sense of, not only mystery but also kind of, sort of edginess, the unknown, and that's like, that's something that I er probably hadn't felt quite like that since I was a kid, you know. It was a feeling like I had when I was a kid and I didn't know anything, so it was exciting but it was also a bit edgy. I didn't actually know what might be round the corner and cos you're on this island it's quite isolated and so there's a strong feeling there to do with the fact that its an island."

Jason used nervous and excited in the same sentence, demonstrating how apprehension in a safe environment can engage interest:

Jason   "Yeah I think it was my first time on the island so I didn't know where to go or what to do so I guess night time adds a little bit of a nervous element I guess, not really knowing where I'm going and but I guess at the same time a little bit of excitement, no time frame really, you're just out there exploring and learning about this very special place, yes I think that was pretty much it, nervous, excited, just keen."

Robbie also refers to the positive and negative in the same sentence when he describes a realisation that we were about to go into a cave.

Robbie "Just happiness and enjoyment… er probably, I was… not confused but ah what's the word erm, sort of taken aback a wee bit, I wasn't prepared for it.."

So it could be asserted that some anticipation is a useful thing and facilitators need to be able to gauge what level on the anticipation- apprehension- nervousness scale is appropriate for each individual in their group. When the appropriate level is used, the anticipation can fuel curiosity and lead to interest, as discussed by Markey and Loewenstein (2014), and this is the subject of the next chapter 7.

Nervousness and apprehension are discussed in depth in the literature on test anxiety and academic emotions (Pekrun, 2012; Zeidner, 2007). Very little of this was evident from the experiences of the participants on this course and I postulate that this is because there is no exam. Meg made observations on her own academic emotions in relation to a presentation task:

Meg   "I enjoyed doing the presentation on it, although I was a little bit apprehensive about that beforehand. I think a little bit because I didn't really know what was expected."

Meg continued with some observations of how other students had been somewhat nervous during the presentation task but she felt that as it was set in an environment that was supportive and as the course aim is to train educators; such presentations were relevant and beneficial.

Anger and Annoyance Emotions

On Scherer's wheel, (2014) anger is classified as a negative emotion and it is often subsumed in a deficit model, which positive psychology is questioning and redefining. Courses such as "Anger Management" (Walker, Walker & Coffey, 1994) aim to teach people to dissipate feelings of anger, and anger is seen as a potentially destructive emotion, which can lead to violence. It is human nature to have angry moments and it can often have some cohesion with some of our more basic instincts such as protection of self or a child. The physiology of anger is charted in detail with hormones such as adrenaline and cortisol playing a significant role (Hannaford, 2005). Hannaford posits that our anger emotions were more useful to survival in our distant past and that in today's postmodern society, the longer-term nature of anger and stress can lead to serious psychological problems and impact hugely on learning capability. The course which this research has as its main focus, is not designed to provoke strong anger, but there are elements of it which "fluster peoples feathers" (as aptly described by Andy). Generally, there was very little description of anger from the graduates, and these incidents were described as annoyance rather than anger. The two instances, which were recounted, were Heather's description of a class debate and Mary's memory of a political question game:

> Mary   "Very intense questions, that's all I remember, like should this person go to prison for doing this, it was "Oh my gosh, I don't know" really, getting into your personal ethics and morals and values and everyone's of course are a little bit different and to try and come to an agreement or conclusion was a challenge."

For the debates, Heather had memories of people being passionate about their opinions and she recounted the observation that when they were passionate about something, they could annoy the people who did not share that passion.

On reflection, although the provocation of anger was not intended in the planning of the activities, experiential methods often illicit the emotion of annoyance and then later a review session airs the feeling and it supports a group dynamics discussion and/or leads to an emotional intelligence coaching point. Care needs to be taken about how much to provoke annoyance, but when it is facilitated with skill, strong memories are created and the learning gained is beneficial and long lasting.

71

The Comfort Zone Phenomenon

There is a school of thought in outdoor education that refers to pushing people out of their comfort zones and making them feel dissonance before using reflection to generate learning and result in a feeling of satisfaction and an ability to deal with further difficult circumstances (Walsh & Golins, 1976). Emotions in the dimensions of both fear and anger can lead to this incongruence. Sibthorpe (2003) explored this idea further, to posit that the personal expectations of the participants influenced the outcome of the process, with his findings being that only those with expectations of personal growth, actually experienced it. This data resonates with Brown's (2008) ideas, when he promotes that the comfort zone model should be used as a metaphor and that outdoor sessions should not be designed with the comfort zone in mind. Leberman & Martin (2002) argued that the peak experiences happened more frequently in response to non-comfort zone stretching activities. The course subjected to this research analysis is not designed to stretch comfort zones in terms of physical skill and experience level, but for some participants, some of the activities may incur comfort zone related emotions. These include the non-physical activities like singing and fabricated stress in a simulation game style of situation. Wallia, (2008) unpacks the frequently used "Challenge by choice " model (Project Adventure, 1985) to show that participants can choose their level of extension and this concept is used to ameliorate the influence of the comfort zone being stretched. Writers in outdoor education journals continue to debate this topic. The comfort zone concept was referred to in passing by Harry and is described earlier in relation to apprehension. Poppy, who had experienced it on a different course, also referred to it several times and Lily used it at a low level in her current work. Brown (2008) has recently contested this model and proposed a more place based experiential approach with less emphasis on fear and comfort zones. The work of Seligman and Csikszentmihalyi (2000) and Fredrickson (2000) supports the notion that the shutting down effect that negative emotions and dissonance have, is not very conducive to learning. Outdoor education practice has broadened beyond the notion of the comfort zone (Hill, 2012), but there are still many applications of it in place and still benefits to be gained from applying it. From findings in this section and the work of Fredrickson, it is evident that both positive and negative emotions can result in learning. In fact, negative experiences and the quick responses we get to them are a vital part of our learning in the context of safety. The use of the edge of the comfort zone (Wallia, 2008), be it mental, emotional or physical is an influential part of education and I hope that the current trend of over emphasising compliance and protection does not result in the wrapping of teenagers to too much cotton wool and reducing comfort zone experiences too much.

Summary of Negative Emotions Chapter

This concludes my chapter on negative emotions. Although they were not in the original focus of the study at all, they were evident, but they were the emotions that were expressed the least. It is possible that participants had forgotten them, or did not feel able to share them, but my observations of the classes and field trips support the idea that negative emotions were experienced the least and most of them were of a lower intensity in line with frustration or mild apprehension. These are often modulated either immediately or during the review or later and significant learning points were taken from them. Although positive psychology makes a stand for positive emotions, we must still acknowledge that encounters with negative emotions can also result in significant life-long learning (Jarvis, Holford & Griffin, 2003). This chapter has analysed the negative emotions fear, boredom, apprehension, frustration and annoyance. A highlight is that the participants had learned to modulate them. The findings resonate with the theories in that negative emotions overrode positive ones if they were strong and lead to more instant and decisive responses (Hannaford, 1995; Lazarus, 1999; Fredrickson, 2001; Seligman & Csikszentmihalyi; 2000). This influenced learning in terms of safety but limited learning in terms of creativity and problem solving. The findings do shed light on the research question as they indicate that negative emotions are an important part of our development and they instigate learning that supports us for life. It was noticeable how much impact negative emotions had had and how long lasting the memories of it were. A comparison with to the positive emotion discussions revealed that they were portrayed in a more reflective manner but that an element of self-awareness and humour was present. This is an interesting and curious point, which leads us on to the next chapter on interest emotions and how they are different from enjoyment, but can also provide a significant level of enjoyment and satisfaction.

CHAPTER 7 INTEREST EMOTIONS

Interest emotions are distinct from enjoyment but they can lead to joy or joy can lead to interest, (Izard, 1977; Ainley & Hidi, 2014). This reversible and symbiotic relationship between interest and joy will be the predominant feature of this chapter. The use of interest and related words such as curious, surprise and amazed by the participants in their narratives was evident and it was used in significantly different situations than the enjoyment emotion words. The interviews provided insights into the use of rewards as a curiosity augmenter and theories have been consulted in order to provide rigour to these. Several theories have been consulted to help interpret the data and these present a fascinating story of the links between interest, enjoyment, reward, satisfaction, motivation and even ancient seeking mechanisms related to finding food in days gone by. In this chapter, theories will be applied, such as Hidi & Renninger (2006) on interest development, Markey & Loewenstein (2014) on curiosity and Kang et al (2009) on rewards and seeking. All of this leads to some very interesting interpretations into how to use interest to engage learners in striving towards a passionate engagement in a subject that they are learning.

Table 7 Summary of Interest Emotions Words

Emotion word group concept	Word examples	Manual concept count	NVivo analysis including similar words
interest	Interesting, fascinating, involved	18	141
Curious, curiosity	Curious wonder want to know	7	45
Mystery anticipation	Mysterious, edgy, uncertain	14	21
Surprise, amazement, unexpected	Surprise, did not know, new, wow	11	42

Interest and related concepts have been discussed in the literature review on supporting theories. A brief summary tells us that interest and enjoyment are intricately interrelated but they also are separate concepts, with interest having more of a cognitive element (Hidi & Renninger, 2006; Scherer, 2014; Ainley & Hidi, 2014). Excitement is an emotion we have less control over, so it is in our subconscious domain, whereas interest, although it has a lower positive valence, is a more

conscious behaviour, which is cognitive in nature. Participants definitely showed a separation between enjoyment/excitement emotions and interest emotions and this is supported by Scherer's Wheel and by the psychology of emotions. The emotions over which we have less control are more in our subconscious whereas emotions like interest are more in our conscious domain. Early authors classified interest as a pre-emotion rather than an emotion (Lazarus, 1991). In the interviews, there were sufficient instances of these two concepts being reported in separate contexts to allow them to be discussed in separate chapters (see manual concept count chart). Hence, Chapter 5 was on enjoyment emotions and this chapter is on interest emotions.

This chapter will discuss interest, curiosity and surprise and findings from the data will be discussed in relation to different relevant theories. I will use Hidi and Renninger's (2006) Four Stage Model of interest development as a framework for my discussion on interest emotions. This starts with triggered situational interest followed by maintained situational interest and then moves on to emerging individual interest, which culminates in a well-developed individual interest. Participants' discussions on curiosity will be related to Markey and Lowenstein's (2014) Information Gap theory outlining three categories of curiosity as being importance, salience and surprise. The similarities and differences between interest and curiosity will be further explored particularly in relation to what motivates the learner to be either interested or curious. Interest has known potential rewards as a motivator, and curiosity tends to be motivated by its deficit of information. This contrast is evident through the data and will be discussed later. Both interest and curiosity have conscious and non-conscious components, supporting the insights from Damasio (2003) discussed in chapter 2 Literature Review around the emotion/cognition interplay.

In addition to the above, I will link my observations to aspects of Panksepp's (1998) work described earlier, which identifies a "seeking system" that is linked to foraging, exploration and investigation. This system drives our curiosity, and stimulates a feeling of being energised and invigorated. Further work by Kang et al. (2009) has extended this information to show that our biological reward system is activated when we anticipate a reward of finding out some information about which we were curious and that this activation has cognitive benefits including enhanced memory. Many of the participant's descriptions resonate clearly with this. In consideration of Hidi and Ainley's (2014) work, I note that in many cases of the experience being exciting or enjoyable, the further facilitated reflection on the session, tended to bring out words, which implied interest. Hence, the data supported the idea of enjoyment and excitement being the first response, with interest developing later, which is in contrast to Panksepp's seeking system above. I think the data supports a

combination of the concepts; this being that enjoyment and excitement stimulate interest, and when interest is pursued, enjoyment and satisfaction can ensue.

Interest on Field Trips

The course that is the subject of this research is mainly about theories, with applications to the planning of educational programmes, but I have field trips on it because it is part of an outdoor experiential education degree and they are intended to be catalysts to engage interest and curiosity. One such session is a visit to a cave, in which I read poems about life, ecosystems, the universe and other significant topics. This is intended to open up conversations about world issues and our role in them. Before the earthquake in 2011, this was a land-based cave and after the earthquake, I moved to a coastal cave. Participants recounted memories from the cave trip in abundance and these included rich descriptions of vivid memories (News RX Health, 2012). I will revisit these in the next chapter 8 on high impact learning moments (HILM) but in this chapter, I will relate the cave experiences to discussion about interest. The idea behind the trip was to capitalise on curiosity and mystery to build anticipation so that when we were in the cave, the stories and discussion became memorable and learning points could be followed up in a class. Two participants did not mention the cave. One was Barry because he was on that course in the earthquake year and we did not go into the cave, the other was Heather, and that year the sea was too rough to go into the cave. All the others had strong memories of the cave with different learning points being constructed.
Harry had particularly strong memories of the cave, and had acknowledged the use of interesting environments as his main learning point:

> Harry   "I didn't find that nearly as interesting as… in particular your courses… like taking us out to that cave and taking a lesson in it, in I in that interesting crazy environment… I told heaps of people about that."

> Harry   "Er so it was an example of … of facilitating some learning in an interesting environment, which stimulated… involvement of the students and just erm …. To be honest I can't remember what the content was I just remember the experience of the learning and being in that crazy cave…"

He went through the progression described in the literature review (Hidi & Renninger, 2006) about being curious, then interested and finally with the interest bringing a joy from learning and applying that learning. Harry (who does not work in education now) described using interesting environments to make meetings more engaging. It is interesting to note that Harry remembered the method of using an interesting environment to heighten senses but he did not remember the details of the lesson in the cave. Others did and they are elaborated on in chapter 8 on high impact learning moments.

Mary recalls a game on a field trip, which started as fun and ended up with engaged interest from many participants. This is a case of the enjoyment factor being used as a catalyst to generate discussion and learning later.

> Mary   "One of the games that I remember that was really fun , was when we had to read a… this was back on the mystery island trip, and we had to read a passage about an education system or a way of thinking and we had to match it up to a country and a time, and I found that really interesting, because it was , you know,   everyone had such good ideas of what it could be and in some cases it was like, oh no it's this country, you know completely off it, but when you think about it you're like ah really, ah wow, that's really interesting…"

She also expanded that factual learning into a raising of awareness of global issues:

> Mary   "and I think it kind of always brings back into perspective how lucky we are."

The second stage of Hidi and Renninger's (2006) four-stage model is maintained situational interest and I think the reflection part of experiential learning models is an influential factor in the maintaining of this interest. Fran explains this purposefully:

> Fran   "I think the … like the stories and the activities that we discussed about afterwards that related to real life, for me are definitely Interesting, cos it's one thing just to talk about a story about dinosaurs or about the island game or the cruise ship and just have it but it's another thing to talk about like how does this relate to how we are living and how the worlds doing… the real world, real life…. And that stuff makes it more interesting and more memorable."

This supports the notion that the reflection part of any experiential learning session is the most crucial and it needs skilful facilitation to bring the best learning out (Baird & Wilson, 2006). In relation to Hidi and Ainley's (2014) work, I note that in many cases of the experience being exciting or enjoyable, the further facilitated reflection on the session, tended to bring out words, which implied interest. This is also coherent with Markey and Loewenstein's (2014) Information Gap Theory, which posits that the relevance and importance of the information to the learner stimulates curiosity and interest.

Interest in Classes and Assignments

It surprised me in the interviews that many statements about interest were linked to classes and assignments rather than field trips. Further to this, when participants were talking about the assignments, if they used enjoyment words they would often also say that it was interesting. My interpretation of this is that field trips were enjoyable but they sparked an interest, which was

followed up in classes. In relation to Ainley and Hidi's (2014) work, this was a case of the interest leading to enjoyment. In some cases this was because of the satisfaction of achieving some understanding and gaining some applicable knowledge but in other cases it was just because there was a general interest in the topic. Most of the graduates were aiming to be educators and I believe they had an intrinsic interest in topics related to education. Several participants mentioned enjoyment of classes because they found the content interesting, but they also enjoyed the method of delivery and could see how they could also apply those techniques in their future work. Fran illustrates this below about her own interest levels:

> Fran   "for sure… I think like some of your classroom classes, I don't know if they are first year or second year but you're talking about the learning rainbow and the development of a child's brain and all those sorts of things I think I obviously connected with because I was interested in it, and so they were things that I remember……I was interested so I paid more attention or sort of remembered more."

Meg noticed both her own interest and interest from the group, in a class about outdoor education authors. She observed that the students appeared to feel a connection with the people they were studying:

> Meg   "I'll always remember- er Martha I think it was saying " as Morty says" she was quoting him or one of his theories and said, well you all know that's Morty and the I think the students kind of felt they almost knew these guys and women- there weren't that many women- but I think particularly the live ones- I think our students felt like they knew them- and if they had the opportunity to meet them, I think they would feel a real affinity to them."

In this case, the students were all given an author to read and then shared their learning, with the aim of making the other students want to read that authors work. This resonates with Ainley and Hidi's (2014) work on interest leading to enjoyment. The satisfaction was from finding out the information, so in this case the interest was sparked but the enjoyment came later with the success at finding something out. In terms of Kang et al.'s (2009) work on rewards systems, the enjoyment from finding out the information was the anticipated reward for doing the task, which was a motivating factor.

Barry represents the majority of the group when he says that he found the dream project assignment engaging:

> Barry   "Yeah it was cool, it wasn't just written stuff and some time, doing assessments, sweet right, I wouldn't say fun, but like I was really interested in it. Dream project was a time to be creative and I always really enjoy being

78

creative ever since I was a kid and so it was like permission to use all the ideas in my head."

Rob and Fran noted the interest from the whole class:

Rob   "Yeah. It's firstly just interesting to see other people's dreams"

Fran   "Erm, people actually wanted to listen to them… like we weren't fidgeting…in fact the only reason we were fidgeting was because we were inside sitting down but I remember being quite Interested in them… like how did you think of that?....that's totally crazy or totally different from my idea."

This assignment has been favourably received by most of the students who have ever studied for this paper and a number of them have used their ideas in a workplace later.

Using Interest Engagement in own Practice

All of the participants mentioned striving to gain their students interest in their own practices but they also portrayed their own interest in their students learning from their own practice (Heather, Lucie, Lily, Fran, Andy, Barry, Jason, Rob, Robbie, Mary)

Barry   "I know now being an educator myself that I could capture those conversations that you don't get at the time because it was still to near to the activity. That would be really interesting."

Finally, Harry sums up the impact of an interesting environment, which is a favourable factor for education outdoors, but can be applied to the indoors too. A simple walk to a local park can make a lesson far more engaging:

Harry   "Erm…. Ah you learn… I felt I learned so much more in an interesting environment…which was …ah just 100 times more through an interesting environment, can be outdoors indoors but…all of it   it just like ingrains it in your mind ah so much more."

Interviewer   "What about your senses?"

Harry   "Its incredible when your senses are heightened."

Curiosity

The concept of curiosity was discussed by 7 of the 13 participants according to the manual concept count. The NVivo word count showed 45 uses of this word or similar and from my analysis of the conversations I can see that if the conversation unpacked the curiosity concept, it was done in detail

(as exemplified by Barry who was the most excited about the use of curiosity in learning and teaching).

Markey & Lowenstein (2014) differentiate curiosity from interest by highlighting the deficit element of curiosity. It is often as a result of not knowing something that we get curious and the desire to know whatever it is burns into us, motivating us to find out. Curiosity is also more random, springing up at times when we do not expect it, whereas interest is more guided and follows a progression. They pose an Information Gap Theory of curiosity, in which the gap between what a person knows and what they do not know, motivates the search for knowledge.

This hinges on three factors:

Importance; people are curious about things that matter to them

Salience; how relevant that information is to a person at the time will influence the level of curiosity

Surprise; this is the presentation of an information deficit that we did not expect and this influences the level of desire to find out.

Curiosity on the Field Trips

In my planning of field trip activities, I often attempted to evoke curiosity as a means of building interest. The use of a cave trip was one of these instances and it has been a constant throughout the 15 years of the course (apart from earthquake year). Lucie describes how the atmosphere of curiosity developed in the cave:

> Lucie "We were wondering what was going to happen in the cave.."
>
> "and the candles being there and the fact that we all had to crawl in and everyone, I remember as soon as we went in there it was silent (whispers) because we didn't know what was going to happen, it was a bit strange and it was a bit we didn't know what was going to happen we were all just sitting in there wondering what was going to happen and why we were there."

Lucie's description continues in great detail to portray a very vivid memory and the related learning constructed from it and it is expanded on further in the next chapter 8 on High Impact Learning Moments. It is possible that the anticipation that Lucie described was rewarding in that the group knew the cave visit was a lesson and this anticipation of reward and strong memory fits with Kang et al.'s (2009) findings about anticipation enhancing memory.

Curiosity in Class Sessions and Assignments

The technique of generating curiosity in field trips was transferred into class sessions too. Fran

describes how she was curious in class but that she also took that learning and applied it into her work with children. She describes curiosity as the hook but notes how curiosity leads on to bigger sensations such as passion and all the links between enjoyment and success:

Fran   "Yeah I think yeah definitely curiosity from the classroom sessions but I think when I'm actually out there applying it like working with the school groups. I think I was at Chatworth school doing ABL stuff. I think that's when the passionate side comes out because maybe you've been curious about learning about it but if you're really passionate about it you're going to do well and you know, have fun teaching these kids what you've just learned."

Curiosity used in own Practice

About half of the graduates (7/13 Barry, Heather, Lily, Lucie, Harry, Rob, Jason) mentioned the use of a surprise element in their teaching but some overtly used the generation of curiosity as one of their main teaching tools (Heather, Lucie, Lily, Barry). Barry had a particularly strong interest in curiosity and it has become one of his main teaching tools. His story was too long to reproduce so I will paraphrase to say that he used a surfing lesson to build up to a detailed group discussion on sharks and marine ecology. One boy asked if there would be sharks out there and Barry was able to use insightful questioning to steer the conversation, an excerpt of which is shown below:

Barry   "Teaching some secondary school students and we were on a topic about one particular thing and it was OK, and all of a sudden this student wanted to talk about sharks and cool, it was sort of linked to what we were doing and I kind of saw an avenue, cos I'm a bit of a shark nerd, so he just kept asking questions bang bang bang and then as he was asking them he was letting his own curiosity drive his learning."

"Then it just went through the roof and then for the rest of the year, those particular students were quoting stuff about sharks back at me or about food chains or about anything they had learned."

Hidi (2006 pp70-71) argues that interest is initially all affective and then it becomes both cognitive and affective. In this example, the boy in Barry's class had an emotional interest in sharks, as they are scary creatures, but Barry's steering of the conversation lead to a cognitive interest and this spread to the whole class. This relates to Panksepp's seeking system, with the boy's curiosity about sharks being an instinctive feeling due to their dangerous nature and his reward for seeking information being the ability to feel a bit safer in the water.

Barry   "Yeah when someone's curious about it, when anyone's curious about it, they make the learning theirs and that's really important."

81

Mystery and Surprise

As mentioned in the section above on curiosity on the field trips, I have endeavoured to engage curiosity through my teaching methods. The use of mystery and surprise has been one of the major means by which I have done this and I have used this in both the field trips and classes. I have grouped mystery and surprise for this discussion as in most cases; one was a precursor to the other. The manual concept count showed that the concept of mystery was discussed by all participants. This is not surprising as they all went on the field trip called the mystery trip. The NVivo count showed 21 uses of the word mystery or similar. 11 participants (out of 13) referred to an element of surprise at some time in the interview according to the manual concept count and this concept came up 42 times in the discussions (NVivo count). I conclude from this that mystery and surprise were significantly evident in the participants' experiences.

Markey & Loewenstein (2014) write that surprise occurs when expectations are violated and the resulting information gap stimulates curiosity and information seeking. Minton (1963) proposed the idea that surprise stimulates curiosity and information seeking and Schultz and Dickinson, (2000) posit that surprise facilitates memory and learning. Another useful dichotomy is Ainley and Hidi's (2014) observation that emotions can be anticipatory (prospective) and/or reflective (retrospective) and the elements of mystery and surprise usually correlated with anticipatory emotions in the participants.

The findings from various conversations in my interviews resonate with these statements. The following list is excerpts from the conversations that provide evidence of one of the elements curiosity, mystery, surprise or the unexpected:

Lily remembered the surprise and mystery methods 15 years later, Lucie 10 years later and Andy 8 years later:

Lily   "I think it was a mystery. Jean with her secrets, with her little mysteries, yea I do remember that."

Lucie   "erm maybe suspense, we were wondering what was going to happen, erm it was quite peaceful, really calming, erm what else, it was I guess excitement as well….and just interest. I was really interested and curious and that really made you think."

Andy   "yeah… it was definitely a mystery. I remember us all being quite confused and puzzled about what was going on and then when we went in none of us had been there before and it was… yeah everything changed and we thought… ah wow … we can actually listen to this teacher again now, she's not just losing it..yeah (*laughs*)."

The long-term nature of these memories indicates that surprise has augmented the memory as posited by Schultz and Dickinson, (2000). The learning from these experiences is harder to ascertain

but all three of the above participants recounted using surprise in their teaching now, providing evidence that some learning about the method of using surprise has occurred.

Others note how the element of surprise generated interest:

Jason	"just that first time buzz, yeah, yeah like the unknown I guess."
Robbie	"Yes that's the one… surprised. I wasn't expecting to jump off the boat (laughs) so that was really cool."
Rob	"Tolstoy and then, I didn't know he was an educator. I didn't know that at all, I was just really surprised—so that was interesting, I enjoyed doing a little bit of research on what he did."

Rob	"Yeah erm I was surprised the cave was there. I remember there was some atmosphere and I remember thinking, I remember thinking, that's interesting"

Barry	"And ……….. there's a certain level of enjoyment in unpredictability, in the unknown, so earlier I said one of my memories of the trip was that sense of unknown, and not knowing what our result was going to be, and I hadn't had that since I was a kid, that's what makes childhood fun."

Barry also noted the group's excitement about the mystery element of the trip.

Markey and Loewenstein's conclusions have parallels with these examples. They believe that curiosity increases in supportive environments and the whole class this research is about is a supportive environment. They believe it is naturally reinforced by effective answers, as demonstrated by Barry's class on sharks. They also ascertain that curiosity increases with importance and relevance to the learner as exemplified by Rob's description of his growing interest in Tolstoy and his school for peasants. Finally, they theorise that curiosity increases when a student is surprised, and this is exemplified by all the participants' statements above. For Rob, his surprise about Tolstoy stimulated him to seek more information, with his only reward being the finding out of information that was novel for him because this activity was not assessed. This supports Kang et al.'s (2009) theory about anticipation of rewards, which consist of information, and how the satisfaction of finding information out can result in enhanced memory. This is indicated by Rob's detailed memory of Tolstoy's school for peasants.

Fran's thoughts on how to apply what she has learned about curiosity to a class in a school where this was the main teaching method, highlight the difficulty of teaching students with diverse interests, but show that Fran has learned about that skill and its benefits:

| Fran | "Yeah and that's the problem with having a whole class, because I mean although you're teaching one subject, like outdoor ed and they may have chosen that, they might be passionate about it like one person maybe curious about how it rains and another person might be curious about how fast they can go on their mountain bike. So that's the struggle for us as teachers but I think as long as we realise that's what we're striving to do, that's the first step. Hmm." |

It is a general attribute of skilled teachers, that they strive to engender interest and curiosity in their students, but these qualities can also be elusive in learners. The importance of teaching learners how to be engaged in and excited by learning itself, cannot be underestimated. Harry provides a pertinent insight, which I will use to close this chapter:

| Harry | "Er… an interested or er curious student learns a lot more than a student who's been just sitting there in a room inside…" |

I observe that Harry appears to link inside with less interest, which is probably a typical outdoor student's response. However, it is possible to engage interest and curiosity indoors, but the outdoors is naturally interesting!

Summary of Interest Emotions Chapter

This chapter has unpacked the concepts of interest curiosity mystery and surprise and related examples from the participant's narratives to theories. The highlights of the findings were the excitement and engagement with which the participants recalled interest memories and the abundance of times that this related to a theoretical aspect of the course. The findings resonate strongly with the literature on interest curiosity and surprise and expose a stark need for such techniques to be applied in an educational context. The next chapter magnifies these findings as we move into the High Impact Learning Moment.

CHAPTER 8 HIGH IMPACT LEARNING MOMENTS

This chapter is the pinnacle of this research. It is the point of difference to what has gone before and it highlights that creative and engaging teaching methods can have long-term impact, which trickles down into the next generation of learners if it is included in teacher/educator training. This chapter refers to theories where relevant, but develops its own model to apply in an educational context. This research employed an exploratory approach with the intention of observing what emerged from the data. Although I kept to this intention throughout my research process, I cannot ignore the fact that I was anticipating the emergence of certain phenomena. These included the links between enjoyment, interest and learning and the potential that frustration has as a learning tool. I had also wondered whether my participants had any vivid memories of the course because I had experienced this myself. However, I did not anticipate the volume of significant memories that were recalled by participants, nor did I predict the detail that participants used to describe them and how they were related to learning. I have coined a phrase "high impact learning moment" (HILM) (or high impact learning encounter) to described these occurrences and below I have attempted to classify these into types according to their characteristics. Participants also recounted some strong memories of events or insights that might not necessarily be classed as learning and the term Strong Memory Trace (SMT) has been adopted for these. The pertinent point about learning is that it can happen at any time, including retrospectively during a reflection phase or session. This was evident in the interviews and with this in mind; the SMT's could be converted to HILM's at a later time. There is also the occasion when we may have learned something, but not yet realised it, so it is hard to define if it's a HILM or an SMT. This chapter will explore these HILM's and SMT's further and relate them to various theories discussed in the literature review. Searches of various repositories such as the dictionary on line, thesaurus.com and Wikipedia, have been conducted to see if there are already definitions for these words. Example conversations will be used from the data to support this. Scherer's (2005) list of components (in the order physiology, emotion, cognition, expression, action) of emotions will be applied to some of the examples to give more credibility. These examples will also be viewed from a constructivist angle to identify "meaning making" and explore links to learning. Observations on the varied thinking styles will be made and these will add a potential link to some authors work in this field. The final part of the chapter will identify the link between emotion and cognition by using Damasio's(2009) Emotion-Cognition model to elucidate the delicate balance between emotion and cognition in learning and to support the notion that the HILM's occur when both emotion and cognition are engaged.

High Impact Learning Moments (HILM) and Strong Memory Traces (SMT)

This section will propose an initial classification of HILM and SMT. First the general characteristics are discussed and then the emergent groups are described and supported by examples.

Characteristics of HILM and SMT

Characteristics of such memories as interpreted from the participants' descriptions, are listed below and linked to supporting literature. The theories from this literature have been clarified in the Literature Review, Chapter 2.

These memories usually include both subconscious emotional and conscious cognitive dimensions and these are evident in different proportions for each participant and circumstance. This proportion is also temporal in that the memories fluctuate between emotion and cognition and this idea resonates with Damasio's (2008) postulation of "emotional thought" and his Emotion- Cognition model.

These memories can often include memories of emotions that are prospective (anticipatory) and/or retrospective (reflective) which sit on a continuum between proximal (immediate reflection) and distal (later reflection), as described by Ainley and Hidi (2014). The graduates recounted both these elements at different times during the course and after the course had finished. Many of them identified a memory and attributed learning to it in the interview. This implies that all such memories can be HILM's not SMT's if humans construct learning from them. These memories were accompanied by intense and detailed description and many participants expressed that the interview allowed them to relive some of the memories and that the prompts also reinforced the memories. These memories are often fortified later on through reflection as demonstrated in the interviews. We must also be aware that memory regeneration can change the narrative.

Potential Classification of HILM and SMT

1. Strong Memory Group

These have been documented under various headings and appear to be either an SMT or a HILM. They can have a learning impact but they tend to be more subconscious, and more about self-concept and who you are as a person. They are usually accompanied by intense detailed description, often with aspects such as colour, location, people, smells and sensations such as the wind on the face, all described in detail. People recalling these memories often exhibit a facial expression with eyes averted as if looking into the distance (News Rx health). I have identified three further divisions of this group:

a) **Vivid Memories** (Schacter, 1996; Walker, Vogl and Thompson, 1997)

These are memories that are described in great detail with memory of colour, smell and sensations. They are often about some achievement, or a challenge. They can be enhanced by doing something special, for example a wedding celebration. Lucie's description of a sharing session after the solo experience fits the vivid memory category very aptly and she perceives that the whole group was focussed at the time:

Lucie " I remember it being dusk, it wasn't bright, so it might have been late afternoon, and I remember it being quite eerie so if it wasn't in the afternoon , it felt like that maybe, do you know what I mean like a dark kind of feel to it, but again it was really quiet, I remember us being the whole… yes the whole of us just sitting around and it was just, you could have heard a pin drop, besides this voice, you could have heard a pin drop, everyone was fully, fully focussed, fully involved, fully engaged…"

Lucie related that experience to learning about trusting people and having bonds with people, which she felt was very pertinent for the whole group at that time. Rob's description of that same session with a different group had similar characteristics. He found that the solo was very powerful:

Rob "The solo and what happened after the solo… it was quite a bit of an emotional session… honest and emotional session you know I ….the memories there are quite vivid for me and I can see….I know who sat where and you know the group, they were really….. you know I can see a picture of them…of that… I know exactly where I was sitting and I know exactly where you were sitting and where others in the group were sitting. I could almost draw, I could draw like a picture of that…"

Rob continued with his interpretation of the personal learning gained from the experience:

Rob "and then we like wrote a letter to whoever we want and then shared that and there was yeah… some really powerful stuff happening in that…In that group, including for me…. so you can use you know…. in talking about how you can actually use that for education is…is very useful."

Harry's description of the cave experience can also be classified as a vivid memory and in his recollection; he refers to his comfort zone and to his learning from it:

Harry "But it was definitely taking me out of my comfort zone.. it was… so many different levels of experience from ….. I mean the light element…. The…. erm…. The cold sand…. I remember the fear of wriggling through the back cave so that was part of…… that was after the lesson and people had to explore back there if they wanted."

87

> "erm… I just think like all my senses were heightened and that you came out and it was a little bit…. It was a feeling of….. erm…… ah it was an experience and obviously it had a big impact because I went and told… heaps of people afterwards… about this cave and it just opened my eyes to …. To where you can have a lesson."

Other participants gave rich descriptions of events that could be classified as vivid memories. Jason has strong memories of the shelter leaking and getting wet, and he related that to a common outdoor learning method to do with having the right gear and learning to get over incidents that initially seemed to be a problem. Barry vividly remembered raft building and the conversations after the event and what he learned about fairness and competition. Heather recalled the debates and the emotion going on in them and continues use that method in her teaching. Andy called the cave a special event and took his students to similar places later.

b) Episodic Memories

Tulving & Szpunar (2009) documented these as memories of episodes and called them episodic memories. They include all the above characteristics of vivid memories but they also seem to have a more consolidated cognitive element. They are never forgotten, and they are often described including the sensations experienced at the time. Meg's description of the cave trip and her memories of the content of the cave lesson are very accurate 10 years later:

> Meg   "The thing that sticks in my memory is probably the field trip to the cave. That's probably the thing about the whole course that sticks in my memory, and I think I can nearly remember everything that we talked about in the cave….all the different readings that we did erm, you and we had a big group and so there was…... I think there were more than 30 of us in the cave that day erm you.. you did quite a few poetry readings, you did the cosmic calendar, errm you did the…that reading when… people are looking at the world and come in wonder about it, I'm sure once you prompt me about the other things we talked about in there, I would remember those. You told the story about the student teacher who did the activity with kids when they had to create their own society… so all those different stories that you told, have definitely stuck in my mind."

Robbie had been on the island trip as a 2nd and 3rd year and he had detailed memories of both trips and noted that any small prompt such as a map or music would have memories of that trip flooding back. He linked these to learning that had happened at the time and distal reflection, which happened during our interview, identified more learning points.

c) Flash Bulb Memories

Brown and Kulik identified these in 1977 as a memory of event. The event is usually a serious incident and we can remember where we were when we heard news that a disaster had happened.

These relate to both personal disasters, or hearing about close friends and families disasters but are also evident during major world incidents such as the attacks on the twin towers in 9/11/2001. These are not recalled in this research and will not be discussed further.

2. Impact Learning Moment Group
These often have overlaps with the above vivid memory group but they can also be remembered in a more generalised way. They can be learning moments about self, others or the world.

a) Awareness Raising Moments
This is an opening up of a concept, usually something not known before. An example of this from the data is Rob's insight and interest in Tolstoy: Rob was surprised to find out that Tolstoy had set up a school for peasants in Russia (Yasnaya Polyana) in the 1860's:

> Rob   I didn't know that at all, I was just really surprised…so that was interesting, I enjoyed doing a little bit of research on what he did.

Rob's interest resonates with Markey and Loewenstein's (2014) Information Gap Theory of curiosity where the surprise had been incongruent with Rob's prior expectations and he had been inspired to seek further information. Lucie experienced a similar incongruence between expectations and surprise, which moved from anticipated boredom into intense interest for the whole group during an activity called News Headlines:

> Lucie   "The newspaper headlines activity, I remember thinking it was going to be a real boring like learning activity (*laughs*) but it was real fun, jumping around you know, yea and so gathering all the news headlines, thinking this will be really easy it will be done in a minute, and then having to put all the headlines into order, I think it was most important to least important and gosh, all of our attitudes and all of our opinions and it was… well it took hours, it literally took hours."

b) Eye-openers (Revelations)
These are an extension of awareness raising moments. They are the realisation of a significant point and they often involve more intense emotions than the surprise emotions indicated above. They are often described with an additional thought like: " Ahh I didn't know that" Robbie describes such a moment during the shelter building activity debrief. They had all been asked to create a real estate advert for their shelters and most had gone for a beach view and extravagant living. The debrief posed a question about what New Zealand would look like if everyone had a beach view and it moved on to a conversation about living conditions throughout the world. This generated critical deliberation amongst the group and Robbie illuminates this through his insight:

> Robbie   "Erm, everyone was quite sort of wow like I didn't expect… well not like didn't expect it but didn't… you know we got to see how the other half lived if you know what I mean and everyone was sort of like wow, I knew that some places in the world were like this but I didn't realise how bad it was or, yeah… so that was another eye-opener, so that was really cool."

89

In this case the emotion had started with surprise but moved more to feelings of guilt and empathy and concern for the less privileged. This oscillation between emotion and cognition supports Damasio's (2008) Emotion-Cognition theory.

c) Epiphany

This is to understand something in a deeper (Biggs & Moore, 1993) and more critical way (Brookfield, 1995). It is similar to the eye-openers described above but the concept and learning usually has a stronger link to a bigger picture issue. Body language appears to demonstrate more emotion and includes a lowered voice, or a nervous laugh. There is usually some facial and verbal expression of amazement. Heather's account of the class discussion on rich and poor after the auction has been described in chapter 5 on enjoyment but throughout her interview, she referred to that concept several times as a real learning moment for her. During the same exercise, in a different year group, Mary describes her insight into the group's characteristics and into her own preconceived ideas, when the group in question unexpectedly shared resources to alleviate the rich and poor difference:

> Mary   "Here's this group of people who I kind of perceived as you know sporty and very competitive and I thought ah there's going to be a brawl, there's going to be a brawl over this last piece of rope and it was just completely different they all said "ah lets work together lets divvy everything out" you know, it was incredible… it was one of those haha aha moments like you should never, you know, judge the group or a person by their cover because everyone's always changing and that was another wow moment, it was like OK (*laughs*) I remember being like "what ?"(*laughs*)."

Mary also elaborated further into her instant reaction to the seal trick, (when a third year jumped out and surprised her) which she called a wild moment, describing how her actions at the time could be related to the theory. Poppy recalls that the cave was special and that she had felt humbled by it. She had felt a deeper emotional connection during that activity. Harry's description of the cave experience has been linked to the vivid memory section above but it also paralleled as an epiphany in that Harry told so many people and had his "eyes opened" about the importance of ambience, which is a concept he applies now in his work. The more recent graduates describe the political squares activity in great depth, with Robbie, Mary and Poppy observing the high impact of it. Mary describes it as intense and memorable and Poppy describes it as confronting and notes that the nature of the activity, a large board game with carpet squares, chess pieces and an element of mystery, made it more memorable. A frequently used descriptive expression about these epiphany moments is the "Oh my Gosh" (or similar) expression, which indicated an element of surprise and realisation, which aligns with Markey and Loewenstein's (2014) Information-Gap theory. A clear common trend in all these epiphany moments is the combination of emotions and cognitive thinking

going on in close temporal proximity. This resonates with Damasio's (2008) Emotion-Cognition theory.

d) Blown Away Moments

This terminology is used for a realisation or epiphany, which has some existential embodiment. The person feels the moment as well has remembering it and the emotions of it. Both Poppy and Lucie describe these intense feelings about the cave activity, and although Lucie's memories of the poem are imprecise, her memory of being blown away by it was enduring:

> Lucie   "Er I don't remember it really clearly but I remember.. but I remember it saying that you know, if humans were in the world in relation to a year it would only be for a day or something, I don't remember it really clearly but I do remember the experience of reading it and being shocked and blown away by it."

> Poppy   "Erm, we swam out to the cave, er then we read a poem, about.. the earth… I think.. I don't remember it very well, but it was very special."

Barry uses the term about a theoretical aspect of the course, the New Zealand School curriculum:

> Barry   "The other two really strong things that feature for me, one is the curriculum, so the curriculum is like a really strong stake in the picture, the New Zealand curriculum and what an amazing document I remember feeling that it was at the time, so really strongly going, wow, this is our curriculum, it kind of blew my mind you know."

3. Cognitive Learning Moment Group

These are portrayed as emotions and cognition working together but the cognition part appears to be dominant. Like impact learning moments, they can be about self, others or the world.

a) Aha Moments (variable spelling Aha, ahha, AhHa)
This term was used in a variety of contexts. One example is Mary's use above, which I have classified as an epiphany rather than an Aha moment. Unlike "blown away", Aha moments are described in various literature pieces (Winston, 2005; Goldsworth & Honebein, 2010) and the variation in spelling indicates that it is an emerging term. It is defined in the Cambridge English dictionary as "used when you suddenly understand or find something." It is often used to describe when something suddenly clicks and this implies a person has been trying to understand something for a while and that there is possibly an element of curiosity there. This is the motivator for seeking the information. It can start with a feeling of deprivation but it definitely results in satisfaction as a reward for striving and it possibly has links with the seeking system, described by Kang et al, (2009) and Panksepp, (1998). It is

congruent with Pekrun's Academic Control Value theory of emotions (2012), which has not been overly evident in this study. It is a cognitive and emotional construct, with the cognitive element being dominant in the seeking phase and the emotional element being dominant in the reflection phase in the form of relief, satisfaction or even excitement when it clicks. Ainley and Hidi (2014) refer to this post activity enjoyment as retrospective emotion. Markey & Loewenstein alert us to the fact that "Curiosity is reinforced when individuals receive concrete answers because associations are formed between the positive feeling of closing the information gap (the "aha" moment) and the feeling of curiosity itself." (2014, p. 226.)

Several of the participants use the phrase "it clicks" for these moments, including Jason for another class, Lucie for environmental education and Fran for the use of a cave to have high impact. Mary used the term in the sense of an eye-opener and Barry describes aha as another way of looking at things:

> Barry "Some kind of epiphany moment where you have that moment where it unfolds and you go aha, all this time I was looking at it this way and… and there is another way…"

Harry gave a detailed description of what the aha moment was for him, which seems most consistent with the literature:

> Harry "I just…. I remember just click and the the aha moment and then it kind of erm escapes you and you're trying to claw back and clutch on to the facts to try and go oooh how does this go together, it's like a cog….and then they go into line and for a moment you go aha… I kind of get it and then it breaks apart and you pull it back again …and that feeling of it clicking….was…..that was exciting (emphasis). I didn't really get that until I came back as an actual student when I was 27."

Harry's description includes the curiosity, seeking and satisfaction characteristics that Panksepp, Kang et al., Ainley, and Hidi describe.

b) Light Bulb: An Idea.

These can happen when you are trying to think of an idea or you are just going about normal business. They sit in the creative domain, they are more random in their occurrence and are not as strongly linked with seeking as an aha moment. Light bulb moments appear as more of a surprise than aha moments and as they are a surprise there is less deprivation than an aha moment (Markey & Loewenstein, 2014). They are more cognitive than emotional but there is an emotion of excitement and motivation that results from having one. Ainley & Hidi describe this as retrospective emotion, which is in itself rewarding. Barry describes when an idea for his dream project popped up. He had been watching a TED talk and went up to his flatmate (assignment partner) and said:

<blockquote>
Barry   "We have to start the dream project now, it has to be this and so it was cool it was like lighting a fire, **bang**, the flames just went up and we just.. again kind of the same as the curriculum one, we got to use a lot of creativity and throw around ideas."
</blockquote>

Although Barry was engaged in an intellectual activity, he was not necessarily seeking an answer to the dream project. However, something in the TED talk gave him an idea, which he was then very motivated to follow. It's possible that the anticipated reward of getting the project done, was a big motivator (Kang et al., 2009) but it's also possible that importance and salience of the topic he heard in the TED (Markey & Loewenstein, 2014) was driving Barry's motivation.

These terms for impact learning moments are still indeterminate and they overlap considerably but the application of the concepts behind them provide a good platform for creative and engaging teaching. Lucie applies experiential methods frequently with her class and her description of her students' responses exemplify strong student engagement:

<blockquote>
Lucie   "You get the one that's hands up in the air and yelling and saying 'nobodies listening to me' and so there's frustration, there's probably a little bit of anger and that's when you stop them and make them think, that light bulb moment of aha, that's what's happening."
</blockquote>

Longer Term High Impact Learning

It is difficult to define learning moments temporally but all the accounts above support examples of shorter-term instances, which result in long-term memories, some of which can be categorised as learning. This next section introduces a broader range of memorable moments and insights made by the graduates, and these support the notion that learning has occurred.

"That stuck with me"

This was an expression used by a number of graduates and others used "I'll never forget that". Lily learned about the concept of emotional intelligence and practices it all the time with her adventure therapy students. Meg stated that the content of the cave session has always "stuck" with her and her observations of other students support that these field trips did have an impact.

<blockquote>
Meg   "One thing I've picked up from that island trip… everything that's taught on that second day trip could be taught in a classroom… and you could probably teach the whole trip content in a day, in the classroom but I think that… and this is feedback I've had from the students as well is that what is taught while we're sitting on the island is just… it sticks…"
</blockquote>

Prompts and Memories

Many of the participants were able to remember more of their experiences when they were prompted. During the interviews, once all the unprompted memories had been unpacked, I prompted with simple props like maps and photographs of scenery. This progressed to brief sentences. Robbie used the term light bulb to describe the retrieval of a memory and use of prompts:

> Robbie "If you give me a prompt on just about anything, I'll be able to remember it just because I've enjoyed my time here so much... and for that obviously it was just one of those cool little activities that you have and that you use that sort of sparks your brain and those memorable ones, it just, I don't know why it's there but it just… when you get prompted like that it just comes back to you."

This relates to work on enjoyment and memory, and has links to positive psychology. Frederickson, (2001) proposed a "Broaden and build theory of positive emotions" which indicates that positive emotions produce broader thought-action repertoires and result in stronger memories. Schacter (1996) recognised that although the relationship between emotion and memory is complex, the experience of emotion tends to increase the likelihood of an event being recalled later and it also increases the level of vividness of that memory. In addition to this, Walker, Vogl and Thompson (1997) observed that unpleasantness fades faster than pleasantness over time in memories.

Impact in Classroom

Participants memories of classroom sessions were consistently more vague than memories of field trips. However, some classes were remembered and these include debates, discussions, and the use of stories, simulations, pictures and colour in the classroom. Barry describes memories from classes but says he got them mixed up because he had no temporal or spatial constant to tie them to:

> Barry "You know so they actually were really impacting but I just don't have any visual stuff to tie it to so I remember the experiences on the island because there was visual imagery and things going on, when you're in a classroom it's just a class room. "

This is supported by Szpunzar's (2010) findings that episodic memories were encoded on a temporal and spatial plane.

Memories of Theory

The observation above on Barry and classroom memory leads to the memories of theories. Participants remembered theoretical aspects of the course with more frequency than I expected.

The theory part of the course was not synonymous with the classroom sessions. Theories were taught on the field trips and the students had to write a book about educational theory authors by researching an author each. In addition, the assignments required the use of theoretical material to support ideas and insights. All the participants remembered their book and the author who they researched. If this was assessed with an exam, students would remember the authors and this memory of names and theories would be classified as learning. In practice this was assessed through an assignment and the participant's strong memories of the authors they studied indicates learning has happened. For example, Andy and Barry remember their authors long term and apply the theory in their teaching:

Andy "I vividly remember working on Vygotsky.. yeah… and I laugh because I sort of use that all the time… I sort of use it everywhere…"

Barry "I was assigned Friere to talk about and that's always stuck with me, I've never ever forgotten Friere."

Application of the Learning Long Term

All of the participants portrayed how they applied their learning from the course, especially in teaching situations. Lucie and Heather, both of whom described using an activity they had experienced on the course, make direct links.

Learning During the Interview

There was some evidence of delayed (distal) reflection happening in the interview and all participants shared that they had enjoyed the interview and it had reinvigorated their ideas. This is where a SMT turns into a HILM. In particular, Heather's insights from the field trip on rich and poor had been embellished through her work at a low decile school:

Heather "At high school you're kind of like whoa, like they haven't had breakfast before they come to school.. yeah so, that reinforces it."

Passion for Learning as Addiction

Several of the participants mentioned passion and this is discussed earlier in chapter 5. However, Harry drew a parallel between learning and addiction and this warrants special attention in this chapter on HILM's. Harry's description is long and detailed but I have drawn out the pertinent aspects below when asked if he thought emotions were part of the learning:

Harry "Absolutely…it's about exploration and erm…erm discovery…it's almost like a….and then you get that aha moment and it's like a drug…especially when you're a little bit older….I mean I was 27 when I came back to the degree…

> and that is emotion, that's that's definitely emotional I'd say… the
> excitement.. it's erm and I kind of felt that was a bit addictive and that's…
> one day I'd like to go back to varsity and learn to get that feeling again….
> And just for that passion of it… just for the aha moment."

This is an example of someone in Hidi and Renningers (2006) fourth stage of interest development, called well-developed individual interest- this is an enduring interest, characterised by positive feelings and results in the generating and seeking of answers to curiosity questions. When we look at Kang's (2009) model, Harry was anticipating the reward, which was the joy of finding something out and he was actively seeking answers. He gained enjoyment from the seeking and more intense enjoyment and excitement from the finding out and he found this motivating.

Life Changing Learning

All participants mentioned the impact of the whole degree on their life, but as this was beyond the topic of this exploration, I steered the conversation back to the memories of the one course in question. The impact of outdoor education courses on people's lives has been the subject of a considerable amount of educational research and since Hattie Marsh Neill and Richards (1997) conducted a meta-analysis of the research, even more has been written. However, it is just worth mentioning briefly that this type of education is a high impact method. I have just selected a few insights to support this:

Lily	"I think that it shaped my life really, I mean I think it's been a huge impact on me and not only my way of teaching but my life in general and I think it was an amazing time just to discover who I was and my values and my beliefs and things."
Mary	"Changed my life completely… definitely."
Robbie	"I certainly know from the 3 years that we had that it was emotional and life changing for me and I certainly wouldn't be who I am today without it."
Poppy	"I think I am able to sort of look at things, not to say objectively but with a with a sort of conscious filter on what I am seeing and really being, I think that's a good word, I'm really conscious of who I am and how I see the world."

High impact Learning Encounter (more than a moment)

These are difficult to categorise, but some specific participant observations about emotions and learning demonstrate that impactful learning is longer than a moment. Damasio's (2009) Emotion-Cognition model it is a useful structure to link all the examples described in this section. It resonates strongly with the HILM's detailed earlier in this chapter.

The details of the model appear in the literature review, but a quick recap reveals that Damasio observes that thoughts are oscillating between emotion and cognition as we grapple with constructing our meaning for them. He identifies an overlap between emotion and cognition, which he calls "emotional thought" which he believes encompasses processes of learning, memory, and decision making, in both social and non-social contexts.

Fran and Lucie both expand on their thinking about their emotions in relation to their learning from the school teaching experience. Lucie experienced the emotions of satisfaction:

> Lucie "Cos there was a lot of learning from it but I remember feeling success and feeling proud and yea, erm impressed or like happy that I'd taken things on…"

Jason observes two sides to a feeling, which is a notion that links with Damasio's concept. Ainley and Hidi (2014) would classify Jason's recount as distal retrospective emotions and thinking, because he appeared to process these feelings during the interview:

> Jason "I don't know for me maybe there's always two sides to a feeling, there's experience and and your feelings around it yeah just exciting but then frustrating, yeah."

Barry demonstrates an in depth awareness and application of the concepts in Damasio's theory when he describes his split emotions during the rafting activity. He gives a detailed description of how he knew the group should have been cooperative, but being competitive was fun in the moment and his emotions were split between acting like an instructor and demonstrating the expected response, or acting like the child and doing what was appealing at the time. Barry experienced the emotions and processed the thinking about them at the same time. He recalled strong memories of this and related it to learning about the use of activities that challenge the competition-cooperation balance, and he now uses them in practice.

> Barry "Yeh so because of that whole split hat focus, there's a split in emotions, and that means that there's excitement and laughter and just kind of crazy funny er it's quite electric, the vibe, there is a real buzz to it."

Barry further described a learning zone, which relates to Csikszentmihalyi's (2000) flow, where he felt emotion and thinking at the same time, while he was writing an assignment. He describes experiencing the emotion of excitement, the flow of thinking and the anticipated emotion of satisfaction from completion of the task and this resonates with several of the emotional learning theories (Damasio; 2006; Markey & Loewenstein, 2014; Kang et al., 2009).

> Barry   "I remember it because I churned it out really fast, it wasn't one of those ones that I had to work on, it was done and dusted, I wrote it in about 4 hours, just like Bang… all my thoughts were just flowing, it was just, you know what they say 80% of the work is done in 20% of the time and I just was…was in the zone."

Narratives are recounts of occurrences and they can form a secondary experience for the listener. Experiential educators use them in order to add impact to their teaching. The person whose story it is has had the experience, felt the emotions, and done the thinking associated with it. The person who hears or reads the story experiences secondary emotions and thinking about the story.

Robbie uses the words; "I'll never forget that" when describing the story that I tell in the dark on the island (see appendix). The story is my experiences of working with a group of at risk Maori youth when I first came to New Zealand. It is a powerful and poignant story and Robbie's description of his experience of hearing it includes the physical, emotional, cognitive and expressive elements of Scherer's (2005) components of emotion. Even on the interview, he displayed emotion as he recounted the details of the story, and displayed cognition in his description of his understanding of the story and the learning he constructed from it. This resonates with Damasio's Emotion-Cognition theory.

> Robbie "Even now I'm sort of trying not to crack up because it's such special story that you shared with us uhm…I thought that was an amazing story, I'll keep that and that you shared that with me for the rest of my life."

This is an interesting example of Robbie learning from my experiences. This method is used prolifically in education through the reading of history, geography, world issues along with others. I observe that the impact of a story is related to several factors including, how it is told, the location it is told in, the relevance of its content to the learner and I believe the addition of pictures and music to the story augments memories of it. Although Robbie did not experience the events in the story, he did experience an emotional response to it and this has strengthened his memory of it. This is supported by experiential education theories, which state that you can have an experience by just watching (note the power of films as emotion generators) (Baird & Wilson, 2006).

Finally, another technique displayed by experiential educators is the use of metaphors as a teaching aid. They are a way of linking emotions to thinking but the thinking can be quite distant from the original activity. They are used to deepen participant engagement and aim to aid the facilitation of transfer of learning. Lucie describes an eye-opener, which happened during an environmental activity and it reveals a big metaphoric shift in her thinking from a biology activity to life in general:

> Lucie   "So yes just this little square in front of you and it was funny because you sit there and you think OK let's do it, but then you get closer and you and I remember thinking, er how that was such a life thing as well, like instead of

> looking at the big picture all the time, just shrinking things down and yeah… I felt uhm , curiosity and again maybe that light bulb moment… ah this is why we're doing this erm yea and just a change in perspective."

All of the above insights show a link between thinking and emotion. In fact, thinking and emotion are linked throughout this work. I can complete this section with my story of my own learning during the analysis of this data. I have experienced some epiphanies or "Oh my gosh" moments throughout this write up, especially in relation to this chapter. I initially felt excited intrigue when HILM's emerged from the data and I started thinking about their catalysts and characteristics (Damasio, 2009). I experienced the physical sensations (Scherer, 2005) of excitement and anticipation (Markey & Loewenstein, 2014) as I began to piece the HILM jigsaw together using the theories as my base platform. I used an "aha" insight to structure this last section around theories. I have already gained some reward from completing a draft, but I have great anticipation for a more satisfying reward (Panksepp, 1998; Kang et al. 2009, Ainley & Hidi, 2014) when I clarify what I am searching for and when I get to apply it in future work and share it with the broader education community. I have a "well-developed enduring interest" in this topic where "effort seems effortless" and I feel able to sustain "constructive and creative endeavours" in relation to it (Hidi & Renninger, 2006). I propose that planning for HILM's can be considered to be an important part of planning experiential sessions. The data suggests that although HILM's can happen randomly, a lesson can also be set up to generate them, so it is critical that they are not always just left to serendipitous luck!

In summary, this chapter has identified a wide range of high impact learning and related it to many theories. It now concludes with a hypothesised model of emotion and cognition, which I refer to as the Emotion-Cognition Oscillation Gauge and this is explained below.

The Emotion-Cognition Oscillation Gauge

This is an emerging model of emotions and learning.

It appears that High Impact Learning Moments are varied and undefined. The range of uses for some of the terms I have used to describe them supports this. In addition, some of them were used frequently by participants (e.g. blown away), but I could only find a definition of them in the popular use section of a dictionary or thesaurus (Dictionary.Cambridge.org, 2018). The participants described a mixture of both emotional and cognitive responses, but the descriptions of the experiences they were having favoured their instant emotional responses first, and they later modulated them in their subsequent sentences as cognition became more dominant. With this in mind, my chapter on HILMs has attempted to differentiate and define them further. I noticed a temporal and valence pattern difference between these HILMs and I have plotted them on a graph with emotion strength on the *x*-axis and cognition strength on the *y*-axis. This graph has evolved into a diagram, which represents a dial, and this is in Figure 7 below and explained further in the following paragraph.

Figure 6 Emotion-Cognition Oscillation Gauge
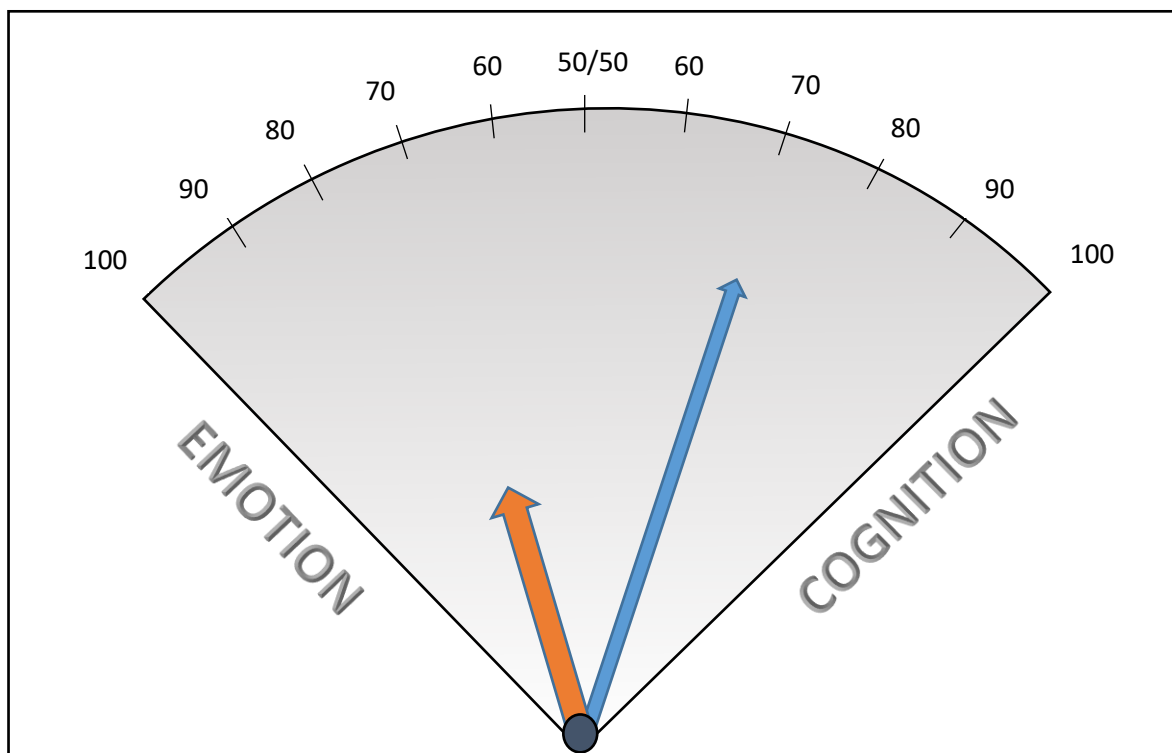
Source: Cory-Wright 2018

Explanation

The dial was created with and x and y-axis similar to Scherer's Wheel (2014) which uses valence and control. However, only one quadrant of a wheel was used and it was angled to create a dial shape. The emotion scale is on the left had axis (originally *x*) of the dial and the cognition scale is on the right hand axis (originally *y*). This is because we read from left to right; all dials tend to read lower figures on the left indicating a start of something on the left. As emotions generally happen sooner than cognition, it was fitting to start these on the left. However, note that the centre line of the dial is a neutral point when emotions and cognition are evenly balanced 50/50. The length of the arrow represents the strength of the feeling/thinking. The arrow can move left, right, or change in length as shown by the two example arrows on the dial. Any learning moment can be plotted on this. It is possible to trace the temporal path of a learning moment as it oscillates between emotions and cognition and varies in strength. The shading represents the likelihood of it being remembered. The width of the arrow could change to become wider when the learning has been applied in practice. An example trace shown from the 'poems in the cave' experience, would start high in the emotion domain and move through cognition when some meaning behind the session is added. Then it would go back to emotion with the satisfaction of having completed the experience but also of having realised the learning from the experience.

Theories that Resonate with this Model

Damasio's Emotion- Cognition theory (2009). Experiences and our responses to them oscillate between emotions and cognition as we grapple with constructing our meaning from them. Damasio observes that our focus is swinging between thinking and emotions constantly and that thinking that has some emotional component often forms a stronger memory. Experiences usually produce stronger and more memorable emotions, which can be a catalyst for deeper learning.

Hid & Renninger (2006) 4- Stage Theory of Interest Development. This depicts a temporal development of interest: Triggered situational interest- Maintained situational interest- Emerging individual interest- Well-developed individual interest. This final stage is where all educators could aim to take their charges. On the dial, longer arrow would show a likelihood of more interest, which could lead to more motivation to take action.

Scherer's components (2004). Scherer's components of emotion sit in a range of places on the dial. Physiology would be further left than emotions. Emotion is on the left and cognition is on the right as explained. Expression could relate to how strong the emotion was and how much modulation was going on. Action and current practice would be represented by the thickness of the arrow.

Scherer's (2014) wheel. The dial concept idea came from Scherer's wheel as explained earlier. Scherer started the wheel as a graph of emotional valance plotted against control, which links to cognition.

Markey & Loewenstein (2014) Information gap theory. If there is a possibility of reducing the gap between the known and the unknown, there will be a strong motivation to find something out. On the dial curiosity would be represented by strong cognition readings (long arrow to the right) followed by strong emotions and a shift to the left after the closing of the gap. Surprise would start with a long arrow on the left in the emotions domain and it would move to right as understanding started to occur.

Ainley & Hidi (2014). Prospective and retrospective emotions: These link in with above in both known and surprise situations. Prospective emotions are expectant and are stronger in known situations. In this case, the dial would start with cognition and move to emotion as the pleasure of the closing of the information gap is felt. These are called retrospective emotions. A surprise situation would reveal a lower intensity of these at the start because the surprise is unexpected but they would be high soon after the surprise and then the dial would swing to the cognitive side and then back as satisfaction of finding something out from the surprise occurred. Retrospective emotions can also be proximal (short time) and distal (long time) as the situation is discussed over time.

Kang et al (2009). Anticipation of the reward of knowledge. This theory posits that we can anticipate a reward of knowledge and this motivates us to seek. In this case the dial would swing to the emotion side first as we anticipate a satisfying answer to our seeking. Then as we seek, it would swing more to the cognitive side. It is clear from this that motivation is a key factor in the seeking of information.

Panksepp (1998), Ainley & Hidi, (2014) - the seeking mechanism and reward circuit. These trigger the sensation of rewards and satisfaction from finding out or getting it right. It is linked to the seeking system in point 7. It is the standard seeking of information and then getting a reward in the form of knowledge for seeking. In this, the dial would not show such strong emotions because although it is seeking, it might not find anything. When something is found out the dial will swing back to the emotional side as the pleasure of finding the answer is activated.

Possible Application of this Model

In its current state the dial is a simple tool for refecting on and discusssing emotions and cognition in learning. More work would need to be done on the measurement of intensities of emotions and focus of thinking in order to use it as an accurate measurement tool. As an example an epiphany

moment would be nearer the emotion side of the dial and a light bulb moment would be more towards cognition. The most useful application of this model would be to use it as a framework to discuss learning, thinking and emotions. People could use it to frame discussions around any emotional incident. It could help people to see their emotional incident from a different perspective and thus apply some emotional intelligence to their responses. It could also help people reflect on learning and on motivation for learning and it therefore has potential as an educational tool.

Summary of High Impact Learning Moments Chapter

In summary, this chapter has extended thinking into ideas that are only just emerging as popular concepts (aha) and the potential for applying them in an educational context is very strong. The highlights have been the high impact moments themselves and the literature has provided steadfast support for these unique concepts. On contemplation, this has been the most engaging and exciting chapter for me to write. The writing of it has utilised all of the emotion concepts discussed previously such as interest curiosity, surprise, enjoyment excitement and passion. There have even been some negative aspects with frustration at trying to express it in the clearest way. The Emotion-Cognition Oscillation gauge has potential to support reflection on learning, behaviour, relationships and much more and I finish this writing inspired about its potential impact.

CHAPTER 9   CONCLUSIONS AND RECOMMENDATIONS

This study has explored the impacts of outdoor learning on a group of graduates from between 1- and 15 years prior to the interview. It primarily utilised memories of experiences to extract and explore information about the graduates' learning and application of that learning into current practices. Its aim was to explore the impacts of the outdoors and experiential methods on the learning of theoretical concepts. These theoretical concepts ranged from published theories and authors, through socio-political concepts, to personal learning in the sphere of emotional intelligence and capability. The underlying construct that I have explored was the engagement of the emotions in learning. Through their engagement, the participants seem to be more aware of their learning and of times when they have regulated emotions. They also seem to have very strong memories of many sessions and have constructed an abundance of different and significant learning points from them. The research question investigates the role of emotions in creating lasting impact and learning through experiential sessions based both indoors and outdoors. This thesis has uncovered numerous examples of lasting learning impacts, and the majority of them have been experienced in the outdoors. It is also notable that these learning impacts were recounted with minimal prompting and unsolicited references were made to the emotions. From this, I conclude in summary that outdoor sessions do enhance emotional engagement, and that this can result in lasting impact and deep learning if it is facilitated in a relevant way. In addition to this, the data supported many current views on the impact of emotional intelligence skills on a person's capacity to learn, and the power of the outdoor setting and experiential methods in enhancing this lasting learning. These last points are not discussed further here, but they form the subject for a future research project. Details of the conclusions on emotions and lasting impact are presented in this chapter, along with recommendations for future educational practices. Any relevant references have already been cited, and this chapter reveals my insights into the topic.

Limitations and Strengths of the Study

Limitations

This study had 13 participants. This a significant number in a qualitative study. However, the participant group were all outdoor education graduates and they are possibly more likely to respond favourably to the outdoor and experiential sessions than other graduates are, so it is difficult to generalise these findings to the broader population. The interview was piloted but after analysis, it is evident that some aspects were not followed up enough. For example, the solo was not mentioned

much because it was not on the session's list that steered the interview, yet the two participants who recounted their experience of it demonstrated a certain depth of learning from it. The semi-structured nature of the interviews elicited a wide range of responses, which resulted in a large number of emerging themes to be condensed down. This limitation was around having too much information. The emotions the participants felt at the time of an outdoor experience are felt differently when reflecting on it, and this may have influenced the stores of the participants. The fact that the researcher was also a tutor on the course being discussed, presented limitations in that certain aspects might not have surfaced. This is discussed in detail on page 30 in the section on researcher bias, where the advantages and disadvantages of the participants knowing the researcher are contrasted with the use of an independent interviewer.

Strengths

The fact that the researcher was also a tutor on the course meant that it was a case of "researcher as participant" and this lead to rich conversations being conducted about the memories and learning from the course. The study gathered large amounts of rich data and most of it was the participants' unprompted reflections and memories of the course in question. The themes studied definitely emerged from the data rather than being preconceived ideas, with emotions being a common theme for all participants. The research included the teaching of the course, the field trips and the sessions taught over the 15 years. These evolved and gained in impact capacity over the time, and were very much a part of the project.

Conclusions

Emotional engagement is present in learning

There is considerable evidence to support the idea that emotions augment memories and enhance learning. This can be divided into further categories of emotions. On the topic of achievement emotions, evidence from this study supports that students anticipate the satisfaction of passing an assignment. When the anticipated reward is knowledge rather than grades, there is still strong evidence of pleasant satisfaction emotions resulting from study, and this was especially evident in this group of participants as they recounted learning for meaning more than for passing a task. This group of participants had high levels of interest in the topic of study, but they admitted surprise at their own interest in the theoretical side of the subject. This grew as they realised its relevance to their future life and work.

The participants accounts demonstrated that enjoyment of a topic was linked to interest and that when enjoyment was used as a precursor to interest it produced lasting impact, but also enjoyment was evident as a post- experience emotion along with satisfaction at completion of a task. The stronger emotion of excitement was evident and the use of mystery, surprise and curiosity in the session design elicited excitement, enjoyment and the experience of fun. There was strong evidence to support that excitement and enjoyment provided strong precursors to interest and engagement. Passion about a topic was developed over a longer period and in a more generalised way. It supported the students drive to work hard and get through and was noticeably dampened when a student struggled.

Finally, frustration is a common emotion amongst learners but the use of sessions that caused minor frustration resulted in good learning on reflection. There was good evidence to show that learning to overcome frustration is a useful skill and that rewards of more settled emotions accrue from learning to regulate or modulate.

Experiential methods augment emotional engagement

This study showed that experiential methods generate emotional engagement and this in turn leads to strong memories of high impact learning encounters. Reflection is a central pillar of experiential education. It had a major influence on the learning, memories and current practices of the participants. All the participants apply reflection in their teaching and the interview itself became a further reflective learning encounter. The emotional engagement experienced and the detailed memories recalled support the use of experiential methods in the course studied. These teaching methods require strong facilitation to illuminate the deep learning and teach learners to delve further themselves during their own reflective moments. Experiential teaching methods often involve the withholding of some information to guide the learners into inquiry (flipped learning). These methods engage anticipatory emotions, which put the learner's brain into a more receptive space. The use of mystery, surprise and setting up a session for an outcome to be revealed later, often letting it run seemingly uncontrolled, engaged the learner's attention and investment.
The use of all the senses and a range of activities both indoors and outdoors resulted in abundant memories of sessions with learning attributed to them. It was evident from the recounts of the participants that they exhibited a range of different preferences for how they took on information, and if it was delivered to their strengths, it elicited emotions that are more enjoyable and it was remembered in more detail.

The relevance of any session to the learner affected to the amount of attention they gave it. This linked to the pragmatic aspects of the graduates' application of their learning. If a session was relevant, it sparked the emotion of interest and often lead to further application of the concepts observed in the session. The most impactful insight is that emotional engagement was present to a high degree in this group of participants. Emotions were engaged more frequently in the outdoor and experiential indoor sessions, than from indoor didactic sessions, and memories from the outdoor sessions and indoor experiential sessions were stronger.

The outdoors is an essential learning space

This research strongly supports the use of an outdoor space as a pedagogical tool. It was evident that the use of the institution grounds for short sessions enhanced memories and learning for all the participants. Twenty minutes outside doing an experiential activity was a good precursor to interest and engagement in the following hour of class indoors. Graduates left the campus for next level of outdoor experience and they remembered the visits to local places both outdoors and indoors (e.g. a museum) to learn a range of subjects encompassing geography through to physiology and to teaching methods. These memories were strong and the learning from them was evident but it varied in that they sometimes learned different things from the same session. Many of them commented on how the place helped them remember the session and a good number commented on how sessions in local places helped them to connect to the place. This strongly supports the notion of Education Outside the Classroom (EOTC) and sense of place (*turangawaiwai*) pedagogy. In cases which required travelling further afield, evidence supported its worth, especially when the trip had a certain purpose and when this purpose fits with a particular place further away. Participants' memories of field trips were strong and linked to learning. This manifested itself further for overnight trips. The impactful influence of the overnight educational trip was solidly supported by the participants' narratives. The strongest memories were of the overnight trips. These memories included the non- teaching time such as shared dinners, bunkroom chats and evening gatherings. These trips were related to the broader learning of life skills and emotional capability. The graduates have all promoted overnight trips in their workplaces. The participants relayed that the outdoors can heighten the senses and engage the emotions. They also shared the effects of the outdoors on their well-being and connection with the environment.

Theoretical concepts can be taught outdoors

This research supports the idea that sessions in outdoor spaces were more memorable than those in indoor spaces and that going outside provide a change of scene and promotes alertness. In addition

to this, the outdoors is a place to see examples of reality. Some subject areas lend themselves well to outdoor visits (history, geography, geology, biology, environmental studies) and others less so but still have potential (English, Education). The field trip that was the centre of the course that has been explored in this research, demonstrated that educational theory could be taught outdoors through the modelling of the theories in the activities.

It must be notice that too much stimulation in the outdoors can reduce focus. However, this research staunchly supports the practice of using an outdoor setting as an inspiration for later classroom work. The field trip in this study was an excellent source of inspiration for the classroom sessions and memories of it were used in most classes after it.

Implications for Educators

This research unveils some important implications for educators, especially in relation to experiential education and deep teaching of high impact subjects, which require actions such as behaviour change. These recommendations are listed for clarity and expanded on below:

- Education outdoors, which covers outdoor education, environmental education and outdoor learning and has strong links with education for sustainability, especially if high impact methods are used.
- Education outdoors has scope that is far beyond the historical perception of it, which has traditionally been outdoor pursuits. With this in mind, it can be broadened out in schools and tertiary education.
- Field trips, of all genres can fulfil the aims of a range of subjects and the generic curriculum values and they do contribute to lasting memories. In line with this, local field trips can have high impact and promote a sense of place.
- Activities on field trips need to be carefully planned and skilfully facilitated to ensure they are actuating meaningful learning.
- This research illuminated that there is a variety of means of disseminating information to learners, all of whom have their own unique ways of taking on that information. The field trip has wide appeal to a large range of learners.
- The research showed that learning in the outdoors was memorable. Outdoor spaces and places should be utilised to counter the current trend of encapsulating humans indoors for learning and work. This could include the creation of outdoor teaching spaces in places of learning.

- Although the education literature has been slow to include the emotions in learning, an increasing number of studies support the consideration of the emotions in education practice. This study highlights a gap in the literature on emotions in the outdoors.
- Emotions need to be valued and treated as an integral part of learning. This means more than just observing how the emotions of achievement can motivate learners or how exam anxiety can hinder learners. It means that three aspects of emotions need to be considered and applied by all educators. These aspects are:

    -Emotional capability- this needs to be embedded in all learning

    -Emotional engagement in a topic- this inspires curiosity and enhances motivation and learning

    -Emotions as a motivator- We need to inspire a passion for life-long learning.

    These three principles can be enhanced when we go outdoors.

Implications for Future Research

Emotional engagement in learning is a growing field of research. The variability and transience of emotions makes research difficult and needs to be considered in any future research. The area would benefit from more research on the positive emotions such as enjoyment of a topic rather than just negative emotions such as test anxiety.

Experiential methods include activation of the senses and reflection on that. Experiential methods are supported by research but it would be beneficial to see this narrow its focus down to certain aspects such as the emotions. There is considerable qualitative evidence to support the outdoors as a learning space but larger samples need to be researched to give this significance. There is less research evidence on teaching of theory outdoors and this aspect could be expanded.

Final Thoughts

These conclusions reveal a breadth of findings, with the main themes being emotions, experiences, outdoors and the learning of theoretical concepts. The emotions are important in the learning process and experiential methods and the outdoor setting play a significant role in generating emotions. It is possible to teach a range of knowledge and skills outdoors and the experiences we have impact on our attitudes and values and ultimately our behaviour and action. These teaching methods have great potential to create lasting impact.

Recent economic and political and trends have hampered education in the outdoors. Outdoor and experiential education is an expensive undertaking. It requires high teacher/learner ratios and more time. Since 2000, there has been a push to reduce costs in primary secondary and tertiary education and the outdoor experience is always on the list of provisions to cut back on.

The outdoors has been acknowledged as a high impact teaching space, which can cover a range of aspects in personal, social and environmental awareness. However, there are still not enough long term studies on these impacts and as teaching outdoors is expensive and perceived as risky, it will need studies that are more convincing if the outdoors is going to be widely accepted as an essential teaching space.

As a result of all of the work I have done towards this thesis, both with the teaching sessions and the research, my conclusions lead me to promote that field trips are an essential part of every child and student's education and that the emotions are central to learning. Lasting impacts can be created when the emotions, experiences and the outdoors are involved.

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APPENDICES

Note that some tables have used coloured sections to assist with clarity

APPENDIX 1   DEFINITIONS

Academic emotions: These are multi-faceted and can have a significant impact on academic achievement. Pekrun and Stephens (2012) describe this influential range of emotions in detail, moving from fear of failure up to goal-orientated behaviour leading to motivation and satisfaction. This study will be seeking positive emotions, which spring out of curiosity and interest, and can lead to motivation to read in more depth.

Adventure -based learning (ABL): This term refers to a specific design style of activities such as problem solving and team building activities, which are used to enhance group dynamics and personal growth (Prouty, 2007, p. 13). In the context of my teaching, ABL is used in many ways above and beyond the standard problem solving and team building games that it is commonly perceived as. The course also coaches the students in the delivery of impactful ABL sessions.

Adventure education: "Adventure education can be defined as direct, active, and engaging learning experiences that involve the whole person and have real consequences." (Prouty, 2007 p. 12). Note that in this definition, adventure education does not have to involve outdoor pursuits and it can happen indoors through such media as drama and performing arts.

Brain physiology: a number of physiological words for brain structures have been used in this thesis, (Hannaford, 1995).

Amygdala- a structure deep within our limbic system in the mid-brain that flares up during emotional moments.

Hippocampus- a structure sitting posterior to the amygdala and also connected to the limbic system. It is believed to have a role in retrieval of memories.

Pre frontal cortex- the front area of our cortex where subconscious thoughts are believed to emanate from, e.g. compassion, altruism, etc.

Frontal lobes- the area of the cortex in the forehead, which is believed to be where the nerve pathways of most conscious thought track.

Cognitive neuroscience: "…focus specifically on understanding higher level processes of cognition via imaging technology". (Goswami, 2004, p. 33). Cognitive neuroscience will never replace established pedagogy but the time has come for both disciplines to complement each other. In the words of Goswami, "Used creatively, therefore, cognitive neuroscience methods have the potential to deliver important information relevant to the design and delivery of educational curricula, as well as the quality of teaching itself." (p. 35). Throughout the teaching on BSOE 605 and the analysis of data in this thesis, I have sometimes related it to principles that I have learned from the

neuroscience background in conjunction with contemporary educational theories. I have often referred to it as biological background.

Critical Theory: (Foucault, 1965; Mayo, 2006). This is a branch of sociology, which emerged the University of Chicago in the inter-war period. It questions all situations in relation to power. This includes identifying and exposes imbalances. It aims to give a voice to those with less power. Examples include racism, feminism and queer theory. It has been applied in this thesis to the extent that current academic education studies acknowledge power balances and identify and question areas where the system perpetuates the higher valuing of one type over another.

Comfort Zone: This concept is used frequently in outdoor education and it refers to one pushing oneself beyond a situation where you no longer feel comfortable (Brown, 2008). Brown writes that there is no actual academic definition of this term. Brown believes it has its roots in Piaget's (1896, cited by Tomlinson & Tomlinson, 1983) theory of cognitive development and Festinger's (1957) idea of cognitive dissonance. It has parallels with Vygotsky's (1934, cited in Daniels, 2017) zone of proximal development but Vygotsky was not referring to potential danger signs.

Constructivism: This has two hypotheses, these being; "(a) Knowledge is actively constructed by an individual; and (b) coming to know is an adaptive process which organises an individual's experiential world." (Lerman, 1989 cited in Hendry, 1996 p. 19). Alternatively, "constructivist approaches to learning (chapter 6) assume that subjectivity is critical because learners take in information and cognitively process it in ways that reflect their needs, dispositions, attitudes, beliefs, and feelings. Constructivism espouses creating meaning from experience" (Jonassen, 1991 cited in Schunk, 2000 p. 24).

Constructionism and social constructionism: A constructionist is a person who construes or interprets and a social construction is that which a group has interpreted. ("Constructionism," 2016). There is a degree of overlap between constructivism and constructionism in that both are used in the same context by different authors. Constructivism appears to embody more input from emotions whereas constructionism seems to have more ties with more exact entities. This research uses constructivism as a theoretical educational entity and constructionism as an understanding that we all construct our own stories from lived experiences and these become our realities.

Emotions: Emotions are seen to have both biological and sociological sources (Lazarus, 1991). They elicit physical sensations alongside mental interpretations of these physical sensations. Lazarus has separated them from biological instincts, drives and needs and stated that they need some personally cognised important facet to them, such as values, goals or commitments. Further work has illuminated the idea that we construct our own meaning out of the emotional sensations through our situations, contexts and language and the example of Tahitians having no word for 'sad'

resonates with this. Lazarus classified emotions into positive: hope, happiness, pride, gratitude, love and compassion; negative: anger, anxiety, sadness, guilt, shame, envy, jealousy, and disgust; and **pre emotions** including curiosity, interest and excitement. This study is reflection on a course that was designed to engender curiosity, interest and excitement and lead to engagement in the topic of study using creative experiential teaching methods. Other emotions elicited from the pre emotions could include happiness, enjoyment, satisfaction and engagement.

Emotional intelligence: "the capacity to reason about emotions, and of [using] [sic] emotions to enhance thinking. It includes the abilities to accurately perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (e.g., Mayer & Salovey, 1997). In this study, the main focus is on using curiosity to generate emotions to enhance learning and motivation to study. The main aspect of emotional intelligence that this addresses is using emotions to enhance thinking.

Emotionally engaging teaching sessions: This is the principal behind the teaching sessions in the BSOE 605 course. It involves using experiential methods to engage interest enjoyment and excitement as a teaching tool and often uses the outdoors as a background setting. The use of these psychological tools in education is support by many of the authors in Pekrun and Linnenbrink-Garcia's (2014) edited book: The International Handbook of Emotions in Education.

Environmental education: "*Environmental education* is aimed at producing a citizenry that is *knowledgeable* concerning the bio-physical environment and its associated problems, aware of *how* to help solve these problems, and *motivated* to work towards their solution" (Stapp, 1969, p. 30 cited in Gilbertson, Bates, McLaughlin, & Ewart, 2006, p. 7). Although this is an old definition, it is still quoted often today and does summarise environmental education very well. A simple summary is "education in, about, and for the environment" (Cooper, 1998))

Experiential education: "experiential education is a process through which a learner constructs knowledge, skill and value from direct experience" (the Association for Experiential Education (1994, p. 1) cited in Itin, 1999, p. 91). Also, it usually includes some form of reflection, and is defined by the Association for Experiential Education (AEE) as "a philosophy and methodology in which educators purposefully engage with learners in direct experience and focussed reflection in order to increase knowledge, develop skills and clarify values. Note that there are similarities between definitions of experiential learning and experiential education and Itin (1999) differentiates these by asserting that experiential education is a philosophy and experiential learning is learning that results from any experiences, be they structured through education or just incidental. For the purposes of this thesis, experiential education is also seen as a teaching method and the learning a student gets from it is

experiential learning. It includes all aspects of my dealings with the students as a tutor, because even some of the texts I send them, or quick conversations in the corridor, can impact on their experiences and their responses to them.

Experiential learning: "[experiential] learning … occurs when changes in judgements, feelings, knowledge or skills result for a particular person from living through an event or events." (Chickering, 1976, p. 63 cited in Itin, 1999, p. 91).

Human Flourishing: This is an objective of positive psychology and is substantially portrayed by Seligman and Csikszentmihalyi (2000) when they detail all the benefits of a positive utilisation of psychology. These include such constructs as well-being, citizenship, responsibility, nurturance etc.

Insider Research: This is a term given to research in higher education institutes, which research their own practices. (Trowler, 2017). This research enquires into my own practices at an institute of higher education but its participants are all graduates and have all left the institute.

Learning communities: A non- individual model of learning in which learning is distributed across different minds and organisational settings. (Gilbert, 2005, p. 95). It resonates clearly with the field trips used in the classes, which are the focus of this research, as the class is striving towards being a community of learners.

Memory: the mental capacity or faculty of retaining and reviving facts, events, impressions, etc., or of recalling or recognizing previous experiences ("Memory", 2016).

There are several types of memory referred to in this thesis:

Declarative memory (explicit) - long term memory of facts and events that can be consciously recalled (The Human Memory, 2019). It can be divided into sematic and episodic memory.

Sematic memory-(Knapp, 1998) - long term declarative memory of facts and knowledge about the external world

Memory of emotions- episodic memories (Tulving & Szpunar, 2009) - a memory of how we feel during an important event, e.g. a wedding, summiting a high peak etc.

Procedural memory (implicit) - long term memory of skills and how to do things (The Human Memory, 2019)

Tacit memory- (Schacter, 1996) - knowledge that you gain from experience not books or teachers.

Emotional memory- also called a flashbulb memory (Brown & Kulik, 1977) we remember something because it was highly emotional, often happens in the case of hearing news of significant world events, e.g. 9.11 attacks

Outdoor education: Defining outdoor education is a thesis in itself but for the purposes of this thesis, it will draw on the following:

"For Priest, outdoor education is comprised of six primary points (1986, p. 13):

It is a method for learning.

It is experiential.

It takes place primarily outdoors.

It requires the use of all the senses (it is holistic).

It is based on interdisciplinary curricula.

It is about relationships involving people and natural resources. (cited in Gilbertson, Bates, McLaughlin, & Ewart, 2006, p. 4)

"Thus within this context, outdoor education encompasses everything from scaling a major Himalayan peak, to taking children outside the classroom for their learning, to bird watching out the bedroom window." (Gilbertson, Bates, McLaughlin, & Ewart, 2006, p. 4)

"outdoor education is a method of teaching and learning that emphasises direct multisensory experiences; takes place in the outdoor environment; and uses an integrated approach to learning by involving the natural, community and individual environments. Through the use of the outdoors, outdoor education programmes strive to elevate the physical, emotional, cognitive, social, and spiritual levels of the individual." Gilbertson, Bates, McLaughlin, & Ewart, 2006, p. 4)

To these above definitions, my style of outdoor education adds the aim of sustainable living, including personal, social and environmental dimensions of sustainability,

Paradigm: A paradigm is a basic belief system or worldview that guides a study (Guba & Lincoln, 2000).

Participatory enquiry: (Jansen, 2014) This is a research method in which the research is also the participant in the research and the participants can also be viewed as researchers. This is similar to this study in that the author was very much a participant in the sessions and the participants' observations on their learning formed part of the outcomes of the research. However, the way this research was conducted did not analyse the words of the researcher, so it was more in line with "Insider research".

Phenomenology: Guba & Lincoln, (2000), refer to this as being a naturalistic process that views phenomenon and occurrences through the different lenses of the range of participants and their subjective backgrounds. Lazarus (1991) refers to phenomenology as subjective and that "thinking alone makes it so". Flick (2014, cited in Guba & Lincoln, 2000) clarifies this complex concept by describing it as a philosophy that calls for an analysis of "the things themselves" and that this includes the participant's subjective perceptions of those "things". This research is phenomenological in that it will consider all of the participant's perspectives on the "things themselves" that emerge, as described by Guba and Lincoln as emergent theme analysis.

Positive psychology: This is described by Seligman and Csikszentmihalyi (2000) as the" profession that will come to understand and build the factors that allow individuals, communities and societies

to flourish" (p. 5). This fits neatly with some of the aims of outdoor education and sustainability education

 "The field of positive psychology at the subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present). At the individual level, it is about positive individual traits: the capacity for love and vocation, courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent, and wisdom. At the group level, it is about the civic virtues and the institutions that move towards better citizenship: responsibility, nurturance, altruism, civility, moderation, tolerance, and work ethic." Seligman & Csikszentmihalyi, (2000, p. 5).

Positivism: (Creswell & Creswell, 2003) This term is used to refer to research that seeks relationships and definite measureable outcomes. This research is post-positivist in that it goes beyond cause and effect and acknowledges complexity.

Postmodernism: This is a term used in sociology to describe the era that we are in and its characteristics. Ward (2003) applies it to many facets including art, architecture, theatre and education. In education, it encompasses a different paradigm and allows more diversity and flexibility than its older modern counterpart allows. Postmodern outdoor education could be said to include sense of place, sustainability and broader range of activities in order to achieve a more sustainable change. Postmodernism in research acknowledges the individual lived experiences of the participants. A simple phrase that clarifies the characteristics of postmodernism is both/and. This implies that both this/and that (two very different concepts) can work alongside each other, whereas either/or tended to be the view during the modern era. In this study, I acknowledge that both classroom methods and experiential outdoor methods have a place in education.

Pragmatic Research: (Henderson, p. 342, 2011). This is research that acknowledges the practical and pragmatic aspects of findings. It accepts interpretivism and post-positivism as both being useful with the suggestion that "an ideology is true it if *works*", in terms of solving problems and providing practical benefits. This applies to the development of the field trip that became a major part of this research. Activities that worked, were kept in and extended.

Qualitative research methodology: This uses an ethnographic approach and relies considerably on analysing the lived embodied experiences of participants. It relies of interpretive analysis of rich descriptions form a small number of participants. (Creswell & Creswell, 2003).

Quantitative research methodology: This is usually underpinned by a structuralist and positivist background, using determinism, empiricism and having an aim to create theories and extrapolate findings generally (Creswell & Creswell, 2003, p. 6).

Situated Learning: Arnseth (2008, p. 291) noted that according to Lave and Wenger (1991): "

learning is not merely situated in practice- as if it were some independently verifiable process that

just happened to be located somewhere; learning is an integral part of the generative social practice

in the lived-in world."

Sociocultural learning theories: Socio-cultural theory rests on the premise that learning is social, and

that it is through social interaction with teachers and peers who are more knowledgeable, that

students' receive assistance as needed in their Zone of Proximal Development (ZPD) to engage in

culturally meaningful tasks. "(Teemant, 2005, p. 49).

APPENDIX 2 EXAMPLE LESSONS

Appendix 2a Background description

BSOE 605 is called professional practice and it is a compulsory year 2 course of the Bachelor of Sustainability and Outdoor Education. It covers a range of educational theories along with providing numerous opportunities for students to work with teens and children. It is a second year course in the Bachelor of Sustainability and Outdoor Education. The educational theory side of the course is perceived initially as hard work or boring and even the mention of theory can be off putting for some students. However, the course is designed to model the use of several key theoretical aspects commonly applied in outdoor education. These are defined further in the definitions section but they include experiential education, adventure education, sociocultural learning theories, constructivism, positive psychology and the basics of cognitive neuroscience. The whole course is designed so that the students experience those theories in action as well as have lectures and discussions about them. They also get to experience several aspects of how societies function and these are highlighted in the session debriefs. They also get to think critically around education policies and curriculum content and they get to apply this learning to their own teaching. It aims for deep, high impact learning. The course is made up of some field trips, some outdoor classes, some indoor classes and 3 assignments. I intend to find out what graduates have remembered from the course and what meaning they have constructed from it. The key high impact sessions and assignments are detailed below, but the course also includes more general background.

The mystery trip

This is the biggest experiential session in the BSOE 605 course and it is designed to set up the whole of the course. It involves the students in a field trip for 2 days and one night. The trip is set up as a mystery tour to engage curiosity from the start. The students are put into groups of about 6-8 and are told that they will be doing a mystery tour and told the dates. They are also told that the tour has a bit of an Outward Bound (Hahn, 1936) theme to it. As they studied Outward Bound in the year before, they know that it will include challenges, comfort zone testing, physical activity, community building, debriefing and feedback. Over the next week, a combination of methods are used to disseminate information about the mystery tour. Texts are sent to some team members, emails to others and some get facebook messenger messages. In addition, posts are put on the course noticeboard and on Moodle and other group members are just told quickly some more information, when they are seen in the outdoor programmes offices. It is up to them to pass on all the

information to all the team members so the preparation for the trip becomes a lesson in communication. The list below shows the key elements that are passed on this way.

Gear to bring including tents, sleeping bags, camp stoves etc.
Clothes to bring including clothing to get wet in the outdoors and the sea.
Food to bring including a meal to share as a team
Safety gear to bring such as first aid kit, torch etc.
Useful equipment such as string, tape, lighter etc.
When and where to meet
That the team is a group of representatives from "an emerging nation" and they need to make up a team identity piece that can be used outdoors, e.g. a hat, headband, scarf etc. The mystery trip will take the form of a conference for emerging nations.
They need to create a team chant or song.
I also give each team a piece of cloth and some coloured pens and they write some of their emerging nation's societal values on it, and they are told it will be added to over the trip. This becomes their team flag.

Prior to the tour, the group completes a "Myers-Briggs" type personality inventory (Personality page, 2019) and this is used later in the final reflection of the trip. Throughout the trip, each activity is related to an educational author or theory, which we will be studying later in the course. The students will need to use the work of these authors in their assignments so they see the theories in action and this helps their deeper understanding of the theories, and inspires them to want to read the theory.

The groups turn up on the day with all their equipment. We have a theme running behind the day as a demonstration of using curiosity and puzzles as a motivator. This theme is a cleudo style game, which encourages the use of deductive reasoning. The classic cleudo game uses three sets of cards with suspects, murder weapons and rooms in the house on them. One card from each set of cards is removed and put in a hidden place. Teams will receive more cards as the game progresses and they have to make accusations about who committed the murder, where and with what. Teams who have the cards suggested in the accusations have to declare when a certain combination of 3 is not the hidden cards because they have one of those three cards in their possession. The idea is for teams to work out who committed the murder, where and with what object. The version used on the field trip also uses three sets of cards, but the categories used are 'resources needed by society', 'qualities needed by a population' and 'outcomes for a civilisation'. The students receive a cleudo card for their group, each time they complete one of the challenges on the trip. They then have to use deductive reasoning to solve this puzzle and they generally become engaged in it because it is entertaining. The subjects on the cards and the fact that the trip is portrayed as a conference for 'emerging nations' promotes many conversations amongst the students about basic needs for a society, personal qualities of citizens and outcomes that are conducive to a happy and functioning

society. Alongside this, we have a discussion on behaviourism (Skinner, 1976) and the theory behind curiosity and reward circuits (Markey & Loewenstein, 2014).

We fill a van with more equipment for raft and shelter building and set off. We go to a harbour and we catch the ferry to the Island with all the extra equipment. If the sea is calm, we have an arrangement with the ferry company to let the group jump into the water off the boat. If the sea is not calm, we land all the people and equipment at the jetty and then get them to jump in off the jetty.   Both are a complete surprise and the option of jumping off the boat is the best because the captain announces over the radio that the boat is leaking and they have to abandon ship! Once they are safely in the water we throw the raft building equipment over the side and it's a free for all as they grab equipment and build a raft while in the water and get to shore. For this part, they have to raft with their emerging nations teams. There is no mention of a race but of course, they all make it into a race! There is also quite a bit of 'fighting' over equipment and there is usually a poor team that is left with very little equipment. Often they get left behind and their raft sinks and often nobody comes out to help them! (Sometimes they do!). The debrief of this looks at human competition and survival and how our brains are ultimately programmed for survival and promotion of our genes (Winston, 2005). It also enlightens the group on compassion and community, and plants the seeds of the possibility of the group becoming a community   of learners (Mayo, 2006). They are asked to look at the values they wrote on their flag and to see if they demonstrated them (Barnes, 2000). Often, competition has got in the way of compassion and we draw parallels from this with cognitive neuroscience and the fight/flight tend /befriend mechanism (Cannon. 1932; Hannaford, 1995) We also draw parallels with global issues and wars.

Once on land they get some time to change and then they all get given the same equipment for shelter building. They get to select a spot and they build their shelter for a night. They also have to make up a real estate advert for the shelter using coloured pens and card. At this point, they are more aware of competition and compassion but as all teams get the same equipment, they tend to perceive it as fair and therefore the competition continues. They are all trying to build the 'best shelter". After the shelters are built, we go on a tour of them with the whole group and each group get to show their real estate advertisement and tries to 'sell' the greatness of their shelter.   At this point, it often happens that groups build shelters with a 'water front' position and sea views. They always mention how much space the shelter has and its indoor-outdoor flow. Some of the groups have added eco features such as double-glazing (plastic sheet!) insulation and solar panels and they often have a veggie garden. The debrief of this looks at the positives of the shelters and commends those who have thought of eco-friendly features. However, many of them have mentioned space, views and the waterfront and at this point we discuss what New Zealand would look like if everyone

had a home with these features. The desire for space, waterfront and sea views in New Zealand has created a landscape covered in large houses, with large gardens, which often cover hillsides and require people to have cars to get to them and to use cars for their children to go to school. This opens their eyes to the drawbacks of this individualistic ideal aim. We also discuss how it is, living in other countries with less space. I use the UK as an example, where there is less space per person but more public space for all, and easier access to it. We also often have international students in this group and we have had great discussions about places like, India, Brazil, Hong Kong and Columbia and the realities of high-rise living, shantytowns and lack of garden space, but also about public transport and sustainable living spaces. We support this discussion with an overview of Maslow's (1968) hierarchy of needs and how it relates to learning. We also discuss how creativity can be used in experiential education and look at Prashnig's creative learning concepts (1998), which support the use of creative methods to get a high impact message across. At this point, the emerging nations teams are asked to go back to their values flag and look to see if their shelter fits their values and to add to or change their values if they feel the need.

After lunch, they have a short exercise involving some orienteering to find 'money' (dried beans). The exercise is set up so that one or two teams will end up poor and one or two will end up rich. It pans out differently each year but each time there are lessons that can be attached to it. After collecting beans, they get to attend an auction of all the rafting gear because the next activity is a raft race with a prize of a basket of fantastic food. The auction ends up with each group having a certain amount of gear to build their raft with and they get 30 minutes to build it. Then we have several raft races and the basket of food is awarded to the winning team or with some groups, it is awarded to the last team. There have been a range of outcomes to debrief from the raft race. In some years, there has been one very rich team and greed takes over and they make a great raft but in the end have no competition because the other rafts are so bad. In some years, equipment has been stolen from the richer teams. Some years have resulted in charity with richer teams giving poorer teams more equipment, but this is often the equipment that the rich teams do not actually want. In other years, the group decided to share all the rafting gear out fairly after auction. The theme of the debrief is about rich and poor and what it is like to be poor in a rich country and also what it is like to be a citizen of a poor country. This leads on to more discussions about war and aggression from both rich and poor countries and about how money is a source of power. This example of power play is the introduction of critical theory into the whole programme and although we tend to leave the deeper aspects of this till later in the course, we do discuss to concept of power using the work of Friere (1996) as an example. The food basket becomes an example of behaviourism, including working for a reward (Skinner, 1976), but we also relate it to the reward

circuit in the brain (Kang et al, 2009), so they can acknowledge the biology behind behaviourism. However, when the food basket is given to the losing raft it provokes a range of emotions and responses from fairness to helping the poor. This becomes the start of a discussion on the right and left of the political spectrum using simple concepts like "From each according to his means, to each according to his needs" or in contrast, "those that put the effort in deserve the reward". This leads on to all sorts of discussions about the benefit, taxation and how to support the poor in society and the pros and cons of doing this, or not doing it. At this point, they get to add more values to their flag about how their emerging nation wishes to deal with poverty and inequality. If gear has been stolen in the raft building session we also look at how the emerging nations wish to deal with criminals and talk about the justice system. This whole session is based on experiential learning theories (Dewey, 1933; Kolb, 1975) and it tends to have a high impact for the students because the debriefs always use their actions as example points. I use reviewing models like Greenaway's '4'e's (1993), (experience, express, examine, explore) as a framework for the reviews and debriefs. The express part of this method allows room for expression of emotions, which is not immediately obvious in Kolb's model. Last year I introduced a plastic gun to the mix and the resulting "shootings" prompted an in depth discussion about the gun laws in the U.S.A. This is expanded on in an article (Cory-Wright, 2018).

The trip then has a range activities and I choose which one to do depending on the mood of the group and on what lessons have been discussed already. It becomes situational and responsive to the learners needs. Some of the activities are described below, along with the usual points learned in the debrief.

Sensory activities are used to get the students to look at nature more closely (Van Matre, 1990). These include using colour slides, magnifiers, mirrors, smelling cups etc. This is an example of an activity that works well with children but it shows the students that adults get interested in it too. The debrief discusses the importance of the senses in experiential education and this leads on to more cognitive neuroscience concepts about how the senses take in information and feed it to higher structures in the brain (Hannaford, 1995). We have already talked about brain stem, fight or flight reactions and we add to these the emotional responses, which we have already seen in the raft race and shelter building. We talk about emotional connections to the environment and how this is needed in order to understand it and to develop a caring relationship with it. I introduce the concept of "sense of place" (Martin, 2000) and how forming this is a step towards caring for the environment.

Sometimes to follow on from this, the groups are given jigsaw pieces of one of the six biogeochemical cycles and they have to piece it together and explain it to the whole group. This

becomes an example of group social constructivism (Vygotsky, cited in Daniels, 2017) and it highlights the basics of the cycles to the students. The jigsaws are set up so that you can take one piece out and then the whole cycle does not work or goes out of balance. A simple example of this is cutting down the trees to result in increased carbon dioxide in the atmosphere resulting in climate change. The emerging nations teams are then told to see if they had any environmental values on their flag and they get the opportunity to add them. At this point, we ask if all nations would live by those values and what would they do if one nation does not live by those values. This leads in to a discussion on rules and regulations, fines and punishments and international policies on climate change. The students realise that the values they have created are quite idealistic and to have a society that lives by them is actually quite unlikely, therefore rules are created to aim to ensure that society lives by those values. Sometimes we discuss the role of religion as a social control and go further to discuss how religion gets hijacked by extremists to support their cause, and somehow along the way the ethics and values get compromised or forgotten. We also touch on whether this compromising of ethics has been due to the disenfranchisement of the extremist. At some point, the nation teams get time to cook their shared dinner and to play the cleudo game that has been put in the trip as an extra example of a learning tool.

When it gets dark, the nations teams get to explore the island with a treasure map with questions on it. Sometimes there has been a special trip, in order to find the treasure on a nearby island. This is a short walk away and often involves wading through the tide. This session is debriefed the next day and it makes links to positive psychology (Seligman & Csikszentmihalyi, 2000; Frederickson, 2001). The group often identify that the nation teams who get into this exercise and dig deep into their motivation to complete it, are often the ones who get the most satisfaction from it. They also get to see that giving up on something cold, wet, and difficult is less satisfying and this ties in with the whole Outward Bound model of being impelled into experiences (Walsh & Golins, 1976) to achieve personal growth. This ties in with emotional intelligence (Goleman, 1996) and students are tested with their patience with their peers and their reactions to discomfort during this activity.

I also often tell them a story by candle light. The story is powerful and memorable and it is about my experiences when I first came to New Zealand and was immersed in the Maori culture by doing a camp with a Maori culture group. It has a sad ending as one of the group had taken his own life but it is used to reveal the reality of life in such groups. It also exemplifies the use of narrative in learning (Luckner & Nadler, 1995.) At this point, we look back at the values flags and see what aspects of biculturalism, ethnicity and racial aspects that groups have acknowledged. Again, they get to add to their flag.

The next morning also uses another Outward Bound style activity. At times, we have run to the jetty and jumped off or swam in the sea near the shelters. One year, with good weather we walked across the island, descended a tight gully and swam out and into the island cave at high tide. Once in the cave I read various personal growth and earth poems to them. Those with strong Maori beliefs, who are uncomfortable about being underground, wait on the rocks outside the cave and I read the poems to them there. Once back on shore we discussed aspects of adventure and the unknown, observing what young people get out of it. We link this to the work of Mortlock (2000) who believes that lack of appropriate adventure opportunities for youth, is part of the reason for the decay in society. They look at their values flags to see if they have included adventure and they get to add their thoughts about it.

After returning for a dry off and breakfast, we then get into some more activities. Again, these vary according to the group but some are described here. We do a fun activity called history charades in which groups get to act out aspects of the islands history. This is just a simple demonstration of how easy it is to learn something when you are immersed in it. Groups have usually remembered all of the islands' history from the treasure hunt the night before. I ask them if they would have remembered it had they been given a book or a guided tour and been talk at. I use this session to demonstrate how teaching methods are crucial in promoting how much learning goes on and I emphasise the importance of Education Outside the Classroom (Beames, Higgins & Nicol, 2012) as a learning tool.

The next activity is often a fun adventure based learning game called marbles and pipes. The group have several marbles to get from one end of a stretch of grass to the other and they have to use the pipes to do this and have to have their feet still on the ground when they have marbles in their pipes. This results in them making a long pipeline out of the pipes, rolling the marbles down it and moving along with the pipes once the marble has passed by, in order to make the pipeline long enough. They do this well, so for the second round I add some fatter and more difficult balls to their buckets. Most groups leave these behind because they are harder to deal with. Then I add some more value to the more difficult balls, by giving them more points than the single marbles. The groups usually then look after the difficult balls but I often still include one really big one that is impossible to get along the pipe and that will often get left behind. In the debrief I link the marbles to people. The ordinary marbles are the able-bodied students and the fat balls and difficult shaped balls become the difficult students, with behaviour problems or disabilities. They realise that they have taken the able bodied and left the challenged or challenging ones behind. We use this metaphor to discuss how the less able are treated in society. They look at their values flag to see if they have considered the less able in their values and they have a chance to add something.

Another activity is the island education system. The props are 5 bags with cardboard islands in them. On each card, there is a list of how that island's education system works. Each group gets each card for 3 minutes and they have to write on a piece of paper what sort of society has formed that education system and what sort of society will result from that education system. They put their ideas on a piece of paper in each bag and pass it on to the next groups. Groups are not allowed to look at each other's ideas, but at the end I get them out and we have a discussion on it. The islands are fictitious but the information has some parallels to current systems: one is very westernised and capitalist, one is 20th century communist, one is highly controlled and religious, one is old and indigenous, and the other is an idealistic futuristic place. When we discuss the societies that spring out of these education systems, they see how important education is as a precursor of society. We go back to the values flag to see if they have an education system on their flags and they get a chance to create one. Most groups by now have created quite an egalitarian, compassionate, environmentally friendly set of values but they realise that the education system is a big influence on these ideals. They start thinking about what sort of education system will support their ideals. They also start to understand the concept of ideologies and philosophies. The values flag has now moved on from values to rules to policies and they see how, much as they may disagree, some sort of policies are needed in a society, especially if we are to have a sustainable future. At this point we introduce the NZ school curriculum document (Ministry of Education, 2007), as an example of a future focused curriculum document.

At some point towards lunchtime on the second day, I go over the assignments for the course. At this point, the relevance of them all is very clear and links have been made with society, educational theories and current practices in NZ schools. The assignments include an essay on the application of broad outdoor education within the current NZ curriculum, the design of an outdoor education programme, backed up by theory and delivery of a high impact lesson from that programme. They also have to do a literature review of 6 articles on any topic within the broad definition of outdoor and environmental education. However, the very first assignment is a group one and they each have to contribute 2 pages to a group book on educational theorists and the relevance of their work to outdoor education. This book becomes the cornerstone of the other assignments, helps them back up the outdoor education programme, and gives them leads towards their literature review. The group get to debate on the boat on the way back how they want the book assignment to be marked. It can be graded A B C, be pass /fail, or just done with no grade because it will be useful. What follows on from this task is a great group discussion on the pros and cons of grades, pass marks and intrinsic and extrinsic motivation. This usually goes on all week until I next see them, when I have

requested their choice on the marking. I debrief this with a discussion about assessment and learning.

There are many other sessions and lessons that I have used on this trip or others and I have created a matrix (appendix 3b) showing the activity, the educational theory it demonstrates, the links it has to brain theory, how it applies to course assignments, how it fits the graduate profile and ultimately, what life lessons are embedded in it.

Other sessions

Poems in the cave.

Before the Christchurch earthquake in 2011, I used to run a session in one of the local moa caves. The cave entrance was blocked by rocks during the earthquake and I am forever thankful that I was not in there with a group on the afternoon of 22nd February 2011. I have since found other caves, or special places to run this session including the cave on the Island. The trip involves a challenge (getting in to the cave), some atmosphere (darkness, candles etc.), some music (including getting them to sing "The Galaxy Song" by Monty Python) and some poems and stories.

I do not actually say much about the meaning behind the trip or the poems, I just do it. All the poems have elements of reference to emotional intelligence, community of learners and global issues in them. Once we get back to the real world, we have a bit of a discussion on the impact of the session. On the final course debrief a few months later, students always remember this session. The learning theories that support this session include creative learning methods (Prashnig, 1995). The session also exemplifies some more brain theory in that it is an example of leaving leaners with vivid or episodic memories (Winston, 2004; Le Doux, 1996, Tulving & Szpunar, 2009).

Political Squares: a chequer board activity with values questions

This activity could happen inside but I usually run it outside in a garden at the institute where the course is based. The class is divided into 4 groups (usually of 8) and there is a chequer board laid out on the grass using carpet tiles. It is usually 9 x 9 squares so that the middle tile is in the centre of the board. Each group stands on each of the four sides of the board. They all have a chess piece (usually a soft toy!) and they put it on the square in the centre of the board. I get one person from each group to come to the centre and I read out a question to them and give them a piece of laminated card with the question on it. They go back to their group to discuss the question and they have to either agree or disagree with the statement. The statements are strong political arguments like "Big corporations should be allowed to by-pass environmental laws with new projects, if they are going to provide jobs in the community with those projects". Of course, this results in huge discussions and

debates on each topic, so I let groups work through the questions at their own pace. When they have decided to agree or disagree with the statement, they come back to me with their answer and I tell them where to move their chess piece. The moves I tell them depend on their answer and they are, right for right wing answer, left for left wing answer, up for an answer that fits with government authoritarian control or down for an answer that fits with more liberation from control. They can move on both axes of the political spectrum i.e. left/right and authoritarian/ liberalism. Once they have finished they remember a grid reference for their chess piece location and then we put all groups pieces on the board as if they had all started at the same side. The reason for starting them at different sides is that once they start, they tend to notice that there is a political message behind it and they tend to look at each other's pieces to confirm that they are conforming! However, when the pieces are all spread out on different axes, they just do it and then realise later.

The main aim of this activity is to promote discussion on contemporary issues. It certainly does that. It also allows me to introduce the basics behind the political spectrum and it helps the students understand a bit more and realise the need to vote and to be up with the play as far as politics goes. We also relate it back to our societies' values flags from the island trip and our learning about societies that we started on the island. We then recap on the island games about education and society and get them thinking about how they are linked. We also discuss how education and politics are interacting with each other, and what sort of political environment will be needed to have outdoor and environmental education available to all. We also cast a critical eye over the NZ curriculum to see what political influences were present at its time of writing. Feedback I have had from this session includes the fact that if I had revealed it was going to be a discussion on political issues, they would have been less interested, but because I introduced it as a game, they get curious and then get into the debating later. Some also comment that doing it outside keeps them awake and focussed and that they can stay on task for longer.

The theorist book

The theorist book has been mentioned earlier in the paragraphs about the island trip. The idea is for the group to make a book about educational theorists and to relate their theories to outdoor education. Each student researches one theorist and writes at least 2 pages which include a brief over view of the theorist's life and times to get the economic and social back ground to their theories, a description of one or two of their theories and a paragraph linking these theories to outdoor education. They also have to include a reference list and the book is made up into a spiral bound course book. The students use this information to help them find theoretical work to back up their dream programme below. Each chapter on a theorist has references that they can follow up for more details.

The experiential learning behind the theorist book is that I treat it like a real book and I am the publisher. They have to meet deadlines, take feedback, edit material and get it to the printers by a certain time and in a certain format. They have to decide how they are going to deal with those who miss the deadlines or who produce substandard work. They have to nominate people into certain responsibilities to do with making the book. They also have to decide whether it is marked by grading, by pass-fail or if it is not marked and is just done for the benefits the group will gain from it. They have to tell me this at a class a week later and they have to explain why they have made their particular choice. This always results in a week of debating out of class as they decide on their preferred system and a lot is learned about intrinsic and extrinsic motivation and the role of rewards in motivation (Medina, 2011). Many students hang on to the book and use it as a place to search for information for other assignments, and many have used in it further programmes such as teacher training.

The dream programme

This was referred to briefly in previous paragraphs but it is the culminating assignment on this course. In two's or threes they have to dream up a programme, place or concept that is a provider of education outdoors for their chosen client group. They have to make a poster showing the background philosophy, vision and mission, teaching methods, curriculum, staff, students and assessment methods, of their dream programme, place or concept. They have to have a section on supporting educational theories and a reference list. They also have to deliver a model lesson from their programme, place or concept, which promotes deep learning and has high impact and high relevance to their background philosophy. These presentations are done on the last field trip of the course and this trip is usually an engaging and exciting 2 days that inspires the students to continue with this work. The idea of the "dream" is to engage the emotions and passion in the learning and it seems that the best dream projects are those that have passion behind them and that the passion fuels the motivation to read more about the topic. At this point, we reflect on the whole course and I facilitate a discussion on how the course uses experiential teaching methods and other creative means to engage the learner's brain in the learning through the engagement of the emotions. This method has varying degrees of success depending on the learners, with some being totally engaged and producing excellent work and others (a lesser proportion, estimate less than 10%) losing motivation but realising that their loss of motivation was something they could have turned around. However, most of them experienced that feeling of being engaged in something and being motivated by that engagement for a good proportion of the course.

This completes a moderately detailed overview of the course I am investigating and I think that knowledge of this helps the reader connect with the research. The planning, implementation and evolution of this course over 15 years has been a major part of the research itself.

Appendix 2b Island Mystery tour planning document: what why and who? How does it fit with course that is the subject of the inquiry

Note that we did not do all the activities, we never do, but it will give more ideas.

Activity	theorist	Brain theory	Course + assignments	Graduate profile	Other + life lessons
Group strengths questionnaire: do care think	Elias Porter	A predisposition to certain wiring patterns, e.g. doers have strong links to motor cortex	Learning styles, professional strengths	Self-aware	Know your strengths Work on your weaknesses
Myers Briggs personality questionnaire	Myers and Briggs	A predisposition to certain wiring patterns, but personalities are also formed from outside influences	How to know yourself and others in the professional environment	Self-aware	Know your strengths Work on your weaknesses
Tribes theme	Jean Gibbes	Human beings seem to have an instinct called species survival, which is a realisation that they could not survive without others. It's a level of caring for your tribe	To start students thinking about societies rules and norms in relation to a number of topics which will be discussed later in classes	Critically aware	The whole of life and how to live, how to influence and how to seek what is most conducive to a happy society
Cleudo mystery + lollies or chocolate	Behaviourism: a card as a reward. Skinner Problem based learning example, deductive reasoning skills. Oxford centre	Engages curiosity: frontal lobes	An idea for a lesson or theme supporting the poster of the dream programme, place or concept (dream poster)	Organised approach to problem solving Intrinsic motivation	Rewards are an integral part of how society works and hard to avoid. Note difference between surprise reward and known reward and no reward
General organisation	Hahn and Outward Bound	Engages frontal lobes in decision making; anterior cingulate gyrus	For shared assignments	Organised role model	Organisation in life, learning from consequences, e.g. who forgot stuff!
The demonstration of the Outward Bound theme	Hahn and Outward Bound Mortlock	Promotes emotional intelligence. Goleman	An example of a style of outdoor programme for the dream poster	Self-aware, resilient	A reflective look at self
Shipwreck... abandon ship	Hahn, Outward Bound, Brathay Hall	Maybe the brain stem reacts first, and then emotions come in, as it is perceived as fun. Gets emotionally marked by hippocampus and is therefore memorable	An idea for a lesson or theme supporting the poster of the dream programme, place or concept (dream poster)	Team collaboration Competition vs cooperation	The value of community Keep having fun
Shelter building	Maslow: basic needs	Brain stem and instincts take over from critical thought when basic needs are not met	An example activity, low cost and low tech equipment	Social skills	Society influenced by number of people in it needing the basics
Real estate Ad	Prashnig creative brain	Creative work as a way to teach high impact messages	Idea for poster Sustainability message about life styles and space needed to live in	Sustainability awareness Community vs individualism	Think about the impact of your life style
Finding beans; any sort of cryptic clue hunt	Vygotsky, social constructivism	Fun and engages frontal lobes	Idea for a lesson supporting poster	Lateral thinking enquiry	Lateral thinking
Auction	Hannaford, engaging brain	Competition vs cooperation	Example activity for broader learning Example of greed in society and value of different things depending on needs and demand and wants	Professional ethics! Power struggles The value of cooperation	Be aware of the value of stuff and the value of time spent. Especially relevant to your relationship with your children (if you have them)
Raft building	Kolb, Dewey experiential models, building, test renew Fun, .Hannaford	More nerve nets, reflection coats more myelin Engages emotions	Example activity for dream poster	X factor	Fun is important!
Raft race	Skinner: behaviourism Jensen: brain Hannaford: movement	Motivation: limbic system, pleasure seeking	Example activity for poster	Inter personal skills development	Most human beings are naturally competitive. Creating community requires higher brain functioning
Earth Education games	Van Matre	Stimulate senses to engage emotions and interest. Makes connection to nature	An example activity to liven up environmental education	Socio environmental aspect	Connection to nature is a life skill
Biogeochemical cycles	Van Matre, Vygotsky Bruner social constructivism Also a method of presenting to a range of learning styles Prashnig	Allows brain to create nerve networks of similar concepts and not just have one wiring path for things learned	Find the bits of a diagram through an activity. Piece the diagram together with a group	Environmentally aware	Piecing together bits of information to construct knowledge
Compass activity	Problem solving deduction	Frontal lobes seek novelty	Example activity for poster	Problem solving	Curiosity is a precursor to learning and motivation
Story: 3 bearings point to location on the lake. Participants told to wait there.	Hahn	Frontal lobes curiosity	Example activity for poster	patience	Patience is a virtue, which will carry you far!

Food games. Or sustainable food challenge	Maslow, basic needs Cooper, Martin	Engages emotions and brain stem. often precipitates argument providing review for learning opportunity	Example activity for poster	tolerance	Tolerance is a virtue that will improve a society
Storytelling, poem reading singing etc. Te Wero story	Nadler Socio cultural learning: immersion in culture	Engages emotions, strong in oral traditions such as Maori Engages both hemispheres Engages hippocampus and seals memories	Example activity and stories/ poems for poster.	A delivery skill Cultural awareness	Teaching is an emotional activity. Know when to share passion and how much of it
Galaxy song	Prashnig, use of music for memorable moments	Episodic memories	Example activity for poster!	Delivery skill	Get out of the comfort zone with stuff other than physical!
Treasure map activity	Lewin, Mortlock, comfort zones	Engages memories, can be race or chill out darkness heightens senses.	Example activity for poster,	communication	Advantage of this activity is that they do not need an instructor right with them.
Walk to King Billy Or other activities which may prompt the question "what is the point?"	Mortlock, Cooper, Martin sense of place	Engages curiosity and memories. Connects with a place.	Example activity for poster	Professional attitude	Use tides to stimulate adventure. Use dawn and dusk to heighten impact and adventure
Mudslinging! raft splashing	James: replacement for war!	fun	Example activity for poster	Such activities are an important part of pro development! Sense of humour	Have a sense of humour
Coasteering: wet or dry Or gorge walking/ canyoning Climbing down the gully and swimming in to the cave	Mortlock: stages of adventure Ages and stages: Piaget, Havighurst, Erikson	Engages emotions: limbic system	Example activity for dream poster	Creativity skills	A range of levels of adventure, all relevant, don't discount the small
Orienteering: Use of map generally to find things like, gear, clues, treasure, food, or points to buy.	Hannaford, brain hemispheres. Lewin group think	Frontal lobes, curiosity Brain differences	Lots of activities if they have been taught the skills	An outdoor skill	Addition to standard ABL
Reviews	Greenaway	Engaging, acknowledging emotions	Example method for poster	Reflection and feedback ability	Reflection is important
Brain lessons	Hannaford, Jensen, Goleman	Awareness of how it all works helps curiosity	Can support poster	Back ground to everything	Look after your brain, in informs your inner self
drama	Tolstoy: was running an experiential school for peasants 150 years ago	Tolstoy recognised children's difficulty with learning when sitting inside	Example activity for poster	Delivery skills	Drama and outdoor ed have many parallels
History Charades	Prashnig, Gardner Another way of getting information across	Engages a range of learning style, emotions and curiosity, limbic system and cortex	Example activity for poster	Broad base of O Ed	EOTC
Island discussion	Interactive socio constructivist, and socio ecological, content, Friere, Illich, Neill	Engages frontal lobes in curiosity	Example activity for poster	Critical thinking	A society and its education system are inextricably linked
Explorers study	Cooper, awareness raiser	Engages emotions in the island, then engages negative response when island no accepted	Example activity for poster	A teaching method	Emotional engagement in learning enhance the learning a huge amount
Marble and balls down a chute	Friere, Cooper, socio ecological	Engages emotions as fun and then interprets with powerful metaphor	Example activity for poster and presentation	See deeper learning opportunities in the surface	Society will have its less able
Solo (we only had time for solo while dreaming up project idea)	Mortlock	Engages emotions, connects with earth, comfort zone for some	Example activity for poster	Self-aware	Take some time out now and again
Feedback session	Kurt Hahn Kurt Lewin	Consolidates myelin on nerve pathways	Example activity for poster	Can take on feedback	Taking on feedback is a life skill
Beans	Rewards: metaphor of growth, or values (Higgins) or money and society expectations	Pleasure seeking part of brain encouraged by rewards	Example teachable moment	Awareness of how economic impacts life choices	Be wary of letting money rule your life
Discussion on grades for presentations	Behaviourism vs socio cultural	Intrinsic vs extrinsic motivation	Example of theme to include in learning	Development of intrinsic motivation over course	Be aware of how a system can trap you into a way of thinking
Community of learners concept	Socio ecological concept	Brain learns through movement, emotions and experience by being immersed in a group setting	Possible theme for project	Professional development preparation for real world work teams	Communities enable people to thrive, individualism can stretch or stifle or leave the mediocre in the middle
Sense of place	Peter Martin	Brain makes emotionally laden connections with places which creates a desire to look after them	Using a local iconic place	connected	Know your places

| Connect with nature | Rousseau | Brain makes emotionally laden connections with nature which creates a desire to look after them | Teaching all the theory outdoors | There is more on the planet than us | Value nature |

APPENDIX 3 INTERVIEW STRUCTURE

Template to guide interview *(italics show purpose and any references. most of it was Scherer's component process view, 2006).*

(Note: This is in large print to allow ease of use during interview. It was not used as a question sheet but more as a guide in the background)

Pre interview task is to spend a few minutes with an A3 blank sheet of paper jotting down memories from the BSOE 605 course (or brainstorm diagram etc.)

Tell me what sessions or field trips you remember from the BSOE 605 course?
What springs to mind first? *(this is to obtain the strongest memories first)*
Tell me a bit about them. *(this is to let the graduate speak)*
(For each relevant memory, unpack it as per page 2 of this guide)
Session headings to jog memory:
The field trip to the Island. Also name activities used on the trip if help needed.
The cave (if before 2011)
The debate on grading
The theorist book
The dream project
The outdoor grid activity on insightful society questions
Any other memorable moments?
Other strong memories from the degree
If you need a memory jogger, this picture will help (picture of the Island, no people)
Do you remember this music? (music was used on the Island trip)

Follow up points on the next page

Pointers to follow up for each memory recounted *(this is to unpack them further, this is just a guide and was used to help the interviewer stay enough on track to cover what was needed)*

Describe the experience in some detail, how much detail can you remember e.g. colour, weather, people etc. *(Scherer's sensations)*
If emotions not yet mentioned; how were you feeling during the activity/ task? *(Scherer's emotions)*
And after?
If emotions excitement, interest, curiosity, enjoyment mentioned, these will be explored further.
If the conversation leads to questions f g and h it will be explored further:
How were you feeling about the group?
How were you feeling about the BSOE 605 course? Assignments?
How were you feeling about the degree?   Your career? The wider world?
What were you thinking about that? *(Scherer's thinking)*
What were you and others doing at the time? *(Scherer's behaviour)*
What learning do you think you took away from that session? (Asked when a session is discussed and followed up.)
What learning have you noticed since?
Do you apply this learning anywhere in your work or life today? *(Scherer's action tendency)*
Anything else you would like to tell me or ask me?

APPENDIX 4 ETHICS

(NOTE: some forms have been formatted differently to fit neatly with the appendix page size)

Appendix 4a University of Canterbury Ethics Approval

HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson Telephone: +64 03 364 2987, Extn 45588 Email:

human-ethics@canterbury.ac.nz

Ref: 2016/50/ERHEC

7 September 2016

Jean Cory-Wright

College of Education, Health and Human Development UNIVERSITY OF CANTERBURY

Dear Jean

Thank you for providing the revised documents in support of your application to the Educational Research Human Ethics Committee. I am very pleased to inform you that your research proposal "An Exploration of Long-Term Impacts of Experiential Learning of Social and Educational Theory Concepts in the Outdoors" has been granted ethical approval.
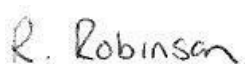
Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 7th September 2016.

Should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval, please let me know. We wish you well for your research.

Yours sincerely

pp *R. Robinson*

Patrick Shepherd
Chair
Educational Research Human Ethics Committee

Please note that ethical approval relates only to the ethical elements of the relationship between the researcher, research participants and other stakeholders. The granting of approval by the Educational Research Human Ethics Committee should not be interpreted as comment on the methodology, legality, value or any other matters relating to this research.
F   E   S

Academic Board
Research and Knowledge Transfer Committee

CPIT

Memo

To:	Jean Cory-Wright
Cc:	Libby Gawith
From:	Research and Knowledge Transfer Committee [contact: Chris Rhea, Academic Division]
Date:	7/12/2015
Re:	**Research Application**

Thank you for your application for a Research Project titled 'An exploratory study of graduate perceptions of the impact on their learning of emotionally engaging teaching methods set in an outdoor context'. Your application (Reference number 1693) was approved on 7/12/2015 and we are pleased to advise that the research is considered eligible for future grants until 30/09/2017.

This approval is subject to the following:
No conditions

On Wed, Oct 21, 2015 at 3:42 PM, Rea Daellenbach <Rea.Daellenbach@cpit.ac.nz> wrote:

Thank you Jean ... that's great and you now have ethics approval from CPIT. I will sign the form electronically and you will get a copy and I can also get Chris Rhea to send you a memo if you need that for UC.

Kind regards

Rea

Appendix 4c Participant Invitation Letter
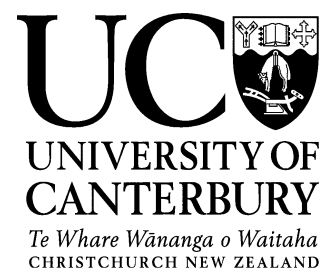
Tel 021 2311 713

Email jean.cory-wright@ara.ac.nz

Ara (CPIT) Outdoor Programmes student/graduate

16th Jan 2016

Dear,

Re: Jean Cory-Wright: Masters research

"An exploration of long term impacts of experiential learning of social and educational theory concepts in the outdoors"

This letter invites you to be a participant in a research study that I am undertaking. I am a senior lecturer in the Outdoor Programmes team at the Ara Institute of Canterbury. As part of my study for a Masters of Education at the University of Canterbury, College of Education, I am conducting a study on graduate perceptions of a teaching method in an outdoor setting. As part of this study, I am gathering data from graduates on **your impressions of a selected number of teaching sessions in the theoretical papers of the Bachelor of Sustainability and Outdoor Education or Bachelor of Adventure Recreation and Outdoor Education.**

Please feel free to decline this invitation if you do not want to participate. You will also be asked to volunteer to attend a short interview, which could be conducted on the phone or on skype. Before the interview, you will be asked to complete a pre- interview task. This will take about 20 minutes and can be done in your own time. The interviews will be audio recorded and participants will have the right to ask for the recording to be turned off at any time. The recordings will be transcribed by the researcher and will only be accessible to the researcher and her supervisors as detailed below. Please also read the attached participant information sheet as this has further details.

Please note that the results of the study may be submitted for publication to national or international journals or presented at educational conferences. Please be assured that particular care will be taken to ensure the confidentiality of all data gathered for this study and the anonymity of participants and their institutions, in all publications of the findings. All data is to be securely stored in password-protected facilities and/or locked storage at the University of Canterbury for five years following the study. Please also note that participation in the study is voluntary. If you do participate, you have the right to decline to answer any questions and to withdraw from the study at any time prior to publication.

Complaints may be addressed to The Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch, Email: human-ethics@canterbury.ac.nz

All participating institutions and participants will receive a full report of the results and recommendations of this study.

Contact for my supervisor is veronica.otoole@canterbury.ac.nz 021 333175

If you have any questions about this research, please do not hesitate to contact me.

Please return the consent form attached as detailed on the form.

Yours sincerely
Jean Cory-Wright
Senior Lecturer, Outdoor Education Programmes
Ara Institute of Canterbury

Contact details of researcher: Jean Cory-Wright 021 2311 713 Jean.cory-wright@ara.ac.nz
Contact for my supervisor: veronica.otoole@canterbury.ac.nz 021 333175

This research has been approved by the University of Canterbury Educational Research Human Ethics Committee in Sept 2016 Ara (CPIT) Academic Research Ethics Committee in January 2016
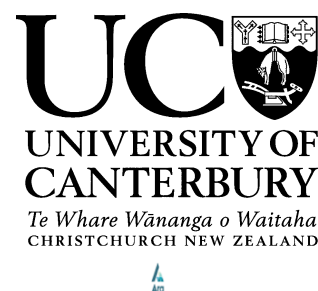
Tel 021 2311 713

Email jean.cory-wright@ara.ac.nz

Jean Cory-Wright Masters research

"An exploration of long term impacts of experiential learning of social and educational theory concepts in the outdoors"

 Participant information sheet for Ara (CPIT) Outdoor Programmes graduate

I am a senior lecturer in the Outdoor Programmes team at CPIT. As part of my study for a Masters of Education at the University of Canterbury, College of Education, I am conducting a study on graduate perceptions of teaching methods in an outdoor setting. As part of this study, I am gathering data on **your impressions of a selected number of teaching sessions in the BSOE 605 course or for graduates prior to 2012, the AROE 604 course**, (which had social and educational theories as one of its focusses)**.** You have been sent this information letter because you are an Ara (CPIT) graduate and have completed the BSOE 605 course (or the predecessor AROE 604 course).

You are invited to participate in this research. You are invited to attend a personal interview with me (the researcher) for about 45 minutes. Before the interview, you will be asked to jot down some memories of the course using a form for guidance. This pre-interview task will take about 20 minutes. The interviews will be audio recorded and you will have the right to ask for the recording to be turned off at any time. I will also show you some landscape photos and/or play some music as a memory jogger. I will transcribe the recording and it will only be accessible to the me and my supervisor as detailed below. I will also be consulting my own personal diary of teaching reflections. If you choose to withdraw from the study at any time, I will remove all data. Note that the research is about a course that you have already completed and there will be no consequences for choosing not to participate in this research.

Please note that the results of the study may be submitted for publication to national or international journals or presented at educational conferences. Please be assured that particular care will be taken to ensure the confidentiality of all data gathered for this study and the anonymity of participants and their institutions in all publications of the findings. All data is to be securely stored in password-protected facilities and/or locked storage at the University of Canterbury for five years following the study. By signing the consent form, you are consenting to the above practice with the data. Please also note that participation in the study is voluntary. If you do participate, you have the right to decline to answer any questions and to withdraw from the study at any time prior to publication.

Any concerns or issues may be addressed to The Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch, Email: human-ethics@canterbury.ac.nz

Contact for my supervisor is veronica.otoole@canterbury.ac.nz 021 333175

All participating institutions and participants will receive a full report of the results and recommendations of this study. If you have any questions about this research, please do not hesitate to contact me.

Please complete the consent form, scan it, and send it to me via email.

Yours sincerely

Jean Cory-Wright

Contact details of researcher: Jean Cory-Wright 021 2311 713 Jean.cory-wright@ara.ac.nz
Contact for my supervisor: veronica.otoole@canterbury.ac.nz 021 333175

This research has been approved by the University of Canterbury Educational Research Human Ethics Committee in Sept 2016 Ara (CPIT) Academic Research Ethics Committee in January 2016
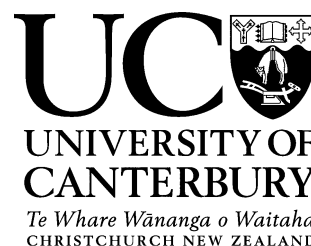
"An exploration of long term impacts of experiential learning of social and educational theory concepts in the outdoors"

Jean Cory-Wright

Senior Academic Staff Member

Ara Institute of Canterbury

I have read and understood the information sheet for this research study and the details have been explained to me. I have had the opportunity to discuss this study and my questions have been answered. I understand that I have the right to ask further questions at any time.

I understand that taking part in this project is entirely voluntary and I will not be affected in any way whether I choose to participate or not. I agree to participate under the following conditions:

I am free to withdraw at any without giving any reasons up until publication and without any disadvantage to me.
I give consent for audio recording of my interview to take place and to be transcribed
My participation in this study is confidential and no material, which could identify me, will be used in the reports or publications from this study.
I may decline to answer any questions.
The data/ audio recording and this consent form will be stored securely at University of Canterbury for five years and then these will be destroyed.
I am no longer in a class that the researcher teaches

Full name of participant:

Signature of participant: _____ Date: _____

Signature of researcher: _____ Date: _____

Contact details of researcher: Jean Cory-Wright 021 2311 713 Jean.cory-wright@ara.ac.nz

Contact for my supervisor: veronica.otoole@canterbury.ac.nz 021 333175

This research has been approved by the University of Canterbury Educational Research Human

Ethics Committee in Sept 2016 Ara (CPIT) Academic Research Ethics Committee in January 2016

 Thank you for your participation

Appendix 4f Support Worker Consent form

"An exploration of long term impacts of experiential learning of social and educational theory concepts in the outdoors"

Jean Cory-Wright

Senior Academic Staff Member

Ara Institute of Canterbury

Consent form for support worker

I have read and understood the information sheet for this research study and the details have been explained to me. I have had the opportunity to discuss this study and my questions have been answered. I understand that I have the right to ask further questions at any time.

I understand that taking part in this project is entirely voluntary and I will not be affected in any way whether I choose to participate or not.

I agree to be the support worker and to be present in the interviews of those who request a support worker. I agree to keep the content of the interviews confidential and make no judgements on them.

I agree to participate under the following conditions:

I am free to withdraw at any without giving any reasons up until publication and without any disadvantage to me.
My participation in this study is confidential and no material, which could identify me, will be used in the reports or publications from this study.
The data/ audio recording and this consent form will be stored securely at University of Canterbury for five years and then these will be destroyed.
I am no longer in a class that the researcher teaches

Full name of participant:

Signature of participant: _____ Date: _____

Signature of researcher: _____ Date: _____

Contact details of researcher: Jean Cory-Wright 021 2311 713 Jean.cory-wright@ara.ac.nz
Contact for my supervisor: veronica.otoole@canterbury.ac.nz 021 333175
This research has been approved by the University of Canterbury Educational Research Human Ethics Committee in Sept 2016 Ara (CPIT) Academic Research Ethics Committee in January 2016
Thank you for your support of this research.

APPENDIX 5 TABLES OF RESULTS AND ANALYSIS

Please note, where a table covers several pages, there are no borders on the top or bottom of the table where they join to the next page. Tables like this state how many pages they cover on their title page.

Colours are used on some pages to highlight emerging themes.

Table 8 Manual Concept Record: analysis of transcripts and summary of themes (next 3 pages)

Legend   Scherer **S** or Lazarus **L** list   Names are pseudonyms   Dates are years on course

yellow   25+ mentions
light brown   20+ mentions   Numbers are record of number of conversations
grey   15+ mentions

* means condense into a lead theme
** means lead theme titles

Participant year 20**	Lily 2003	Harry 2004	Meg 2004	Lucie 2006	Rob 2008	Andy 2009	Francie 2009	Barry 2011	Jason 2012	Heather 2013	Mary 2014	Poppy 2015	Robbie 2015	Total	Joined similar concepts outlines show groups and number
awesome * S												2	2	4	
confident/prove*											1	2		3	
keen engaged*									2	2	1	2	2	9	
relax/comfort * S						1	2				3			6	
emotions **	1		1	4	4	1		4	2	3	1	3	4	28	33 emotions, motivation
enjoyment **S		1		5	1	4	2	3	4	3	2	1	6	32	50 enjoyment, awesome
happy* L S												1	2	3	happy, comfort, cool
enthusiasm* S	1			1										2	
explore *									1					1	
cool*	1		1						1		2			5	explore
excitement **	3	2	4			3		3	5		4	2	2	28	31 excitement enthusiasm
fun **	1			5			1	2	1	4	7	2	3	26	26 fun
experience **			1	1				1			5		4	12	23 experience experiential
mystery **	1		1	1		2	1	1			2			9	
suspense anticipate*				1							1	3		5	
surprise* S											2	1	1	4	
different*		1		1		2								4	
unexpected*	1								2	2	1		1	7	
inspire	1		1			2								4	

	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	Total	
passion**	5			1		1	6			1	1		1	16	39 Passion Love like
love* L	1			2		1				1		2	1	8	
like/good*				1		2	1	2	1	2	3	2	1	15	
special											1	2		3	
humour			1											1	
senses		1				1								2	
curiosity * S				1			1	5						7	suspense anticipate
interest** S		3	1	1	3	1	5	1		2	1			18	45 interest curiosity mystery
creative		1			1	2		2	1					7	unexpected keen engaged
															surprise different
frustration				3		1	2	2	3				3	11	17 Frustration annoyed
annoyed/hate*				1		1				1			1	4	hate angry
angry* L S										1	1			2	
scared** S											3			3	17 scared apprehensive
comfort zone*		1								1		5		7	nervous comfort zone
resilience*	2													2	
apprehensive* anxious S L			1				1							2	
nervous* stress S			1						2			1	1	5	
reflection	1	1	1	1			1	3	2		2		1	13	reflection
intense				1	1								1	3	
competition								1			3		1	5	resilience confidence
emotional intel pos**	2			3				3		3	1	4	1	17	20 emotional int, pos psyche
physical/ move**			1	1	1	3				3	1	1	1	12	12 physical
earth*	1										1	1		3	
place**			2				1	1	1			2	3	10	23 Place earth nature local
nature*	3			1							1	2	1	8	outdoors not indoors
local*	2	1				2		1						6	
outdoors*							1			1	1	2	1	6	
indoors			1			1			1					3	
values	3					4		1						8	
choice	2			2			1			3	1	1		10	choice
real**	1		1	1	1		1				2			7	real relevant
relevant*		1												1	

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	Total	
connect*	4						1	2				2		9	
theory*	1			1		2	1	3		3	3	1	1	16	
models*				1	1		1	1	1		1		1	7	
writers**	2	1	6	2	4	1	2	6					1	24	47 writers theory models
brain		1						1	3	1			3	9	
experiential**		1		3		1			1		4		1	11	
supported*	2													2	
success / proud*				1		1					1	1	1	5	
challenge	1			1								1		3	impact learning moment
ahha blow aw**		1		4		1	2	5	1	4	6	3	6	33	47 aha blow away eye opener
learning moment*									5	1	4	1	3	14	
opinion*				1							1		1	3	
applied*	1					1			1	1				4	
educate*							1	1	1					3	
facilitate*	2	3							1					6	
teach**			1	5		2	4	4	2	8	3			29	38 teach facilitate educate
styles			1	1					1					3	applied
motivation *					1	1			1	1	1			5	
celebrate satisfied*									2		1		1	4	celebrate satisfied proud
own school*	1													1	success
uni**							2			5		1		8	other institutes uni school
staff	1						1						1	3	
student group**	1			1	1	1	2		3	4	3	5	2	23	27 student group support
relationships*				2										2	relationships
focus							1							1	
debate/discuss**					2	2	2	2	1	4	1	2	1	17	20 discussion debate argue
															opinions

Table 9 Condensed Summary of Manual Concept Record

Participant / year 20**	Lily 2003	Harry 2004	Meg 2004	Lucie 2006	Rob 2008	Andy 2009	Francie 2009	Barry 2011	Jason 2012	Heather 2013	Mary 2014	Poppy 2015	Robbie 2015	Total	Number of similar concepts / major themes emerged
enjoyment ** S		1		5	1	4	2	3	4	3	2	1	6	32	50 enjoyment, awesome, comfort, happy
high Impact learn**		1		4		1	2	5	1	4	6	3	6	33	47 impact learning aha blow away
writers**	2	1	6	2	4	1	2	6					1	24	47 writers theory models
															suspense anticipate unexpected
interest** S		3	1	1	3	1	5	1		2	1			18	45 interest curiosity mystery
															surprise different keen engaged
passion**	5			1		1	6			1	1		1	16	39 Passion Love like
teach**			1	5		2	4	4	2	8	3			29	38 teach facilitate educate applied
emotions **	1		1	4	4	1		4	2	3	1	3	4	28	33 emotions, motivation explore
excitement **	3	2	4			3		3	5		4	2	2	28	31 excitement enthusiasm
student group**	1			1	1	1	2		3	4	3	5	2	23	27 student group support relationship
fun **	1			5			1	2	1	4	7	2	3	26	26 fun
experience **			1	1				1			5		4	12	23 experience experiential
place**			2				1	1	1			2	3	10	23 Place earth nature local outdoors
emotional intel pos**	2			3				3		3	1	4	1	17	20 EQ, pos psyche resilience confidence
debate/discuss**						2	2	2	1	4	1	2	1	17	20 discussion debate argue opinions
frustration				3		1	2	2	3				3	11	17 Frustration annoyed hate angry
scared** S											3			3	17 scared apprehensive comfort zone
learning *									5	1	4	1	3	14	14 learning
reflection	1	1	1	1			1	3	2		2		1	13	13 reflection
physical/ move**			1	1	1	3				3	1	1	1	12	12 physical
experiential**		1		3		1			1		4		1	11	11 experiential
choice	2			2			1				3	1		10	10 choice
brain		1						1	3	1			3	9	9 brain

Table 10 Major Themes and Linked Words in Order of Magnitude

Emerging theme	actual words	other words	Total words used for the theme	
enjoyment ** S	32	18	50	enjoyment, awesome, comfort, happy, cool
high Impact learn**	33	14	47	impact learning, aha, blow away, eye opener, intense
writers**	24	23	47	writers theory models
interest** S	18	27	45	interest curiosity mystery suspense anticipate unexpected surprise different
passion**	16	23	39	Passion Love like
teach**	29	9	38	teach facilitate educate applied
emotions **	28	5	33	emotions, motivation explore
excitement **	28	3	31	excitement enthusiasm
student group**	23	4	27	student group support relationship
fun **	26	0	26	fun
experience **	12	11	23	experience experiential
place**	10	13	23	Place earth nature local outdoors
emotional intel pos**	17	3	20	EQ, pos psyche resilience confidence
debate/discuss**	17	3	20	discussion debate argue opinions
frustration	11	6	17	Frustration annoyed hate angry
scared** S	3	14	17	scared apprehensive comfort zone
learning *	14	0	14	learning
reflection	13	0	13	reflection
physical/ move**	12	0	12	physical
experiential**	11	0	11	experiential
choice	10	0	10	choice
brain	9	9	9	brain

Legend

Scherer or Lazarus list S L

yellow	25+ mentions
light brown	20+ mentions
grey	15+ mentions

* condense into a lead theme

** lead theme

Table 11 Themes Chosen for the Analysis

Emerging theme	words used	reason chosen for analysis	chapter section title	Legend
				Scherer or Lazarus list S L
enjoyment ** S passion** excitement ** fun **	enjoyment awesome comfort happy cool Passion Love like excitement enthusiasm fun	These were the most frequently used words and these concepts were discussed the most	Positive emotions	yellow 25+ mentions light brown 20+ mentions grey 15+ mentions ** lead theme
interest** S	interest curiosity mystery suspense anticipate unexpected surprise different	These were also frequently dicussed using a wider range of words and different from enjoyment	Interest emotions	
high Impact learning **	impact learning, aha, blow away, eye opener intense	These were noticeably of higher intensity than all others	High impact learning	
frustration ** scared** S	Frustration annoyed hate angry scared apprehensive comfort zone	These were discussed less but warranted investigation	Negative emotions	
Important observations			Not used as theme but embedded in others	
writers**	writers theory models	note frequent reference to theoretical material		
debate/discuss**	discussion debate argue opinions	the highest recalled classroom session		
teach**	teach facilitate educate applied	refering to own practice this is evidence of learning		
emotions **	emotions motivation explore	main concept of inquiry		

Table 12 Thesaurus Search to Aid Aggregation of Theme Words

Next 7 pages

Table 7 Thesaurus and dictionary search to help aggregate themes

major theme	words	Definitions and similar words to help define categories		notes
		dictionary	thesaurus	
A Positive emotions/experiences all have element of pleasure enjoyment to varying degree of intensity	Enjoyment, enjoy, joy	The state or process of taking pleasure in something. A thing that gives pleasure Take delight or pleasure in (an activity or occasion),A feeling of great pleasure and happiness.	pleasure, entertainment, amusement, diversion, recreation, relaxation comfort, relief, delight, happiness, merriment, gladness, joy, fun, gaiety, jollity, satisfaction, gratification liking, zeal, relish, gusto delight, great pleasure, joyfulness, jubilation, triumph, exultation, rejoicing, happiness, gladness, glee, exhilaration, ebullience, exuberance, elation, euphoria, bliss, ecstasy, transports of delight, rapture, radiance	
	awesome	informal extremely good; excellent. Extremely impressive or daunting; inspiring awe.	breathtaking, amazing, stunning, astounding, astonishing, awe-inspiring, stupendous, staggering, extraordinary, incredible, unbelievable magnificent, wonderful, spectacular, remarkable, phenomenal, prodigious, miraculous, sublime formidable, imposing, impressive	awesome is commonly used by New Zealanders to describe something amazing, stronger than good
	happy	Feeling or showing pleasure or contentment	contented, content, cheerful, cheery, merry, joyful, jovial, jolly, joking, jocular, gleeful, carefree, untroubled, delighted, smiling, beaming, grinning, glowing, satisfied, gratified, buoyant, radiant, sunny, blithe, joyous, beatific, blessed thrilled, exuberant, elated, exhilarated, ecstatic, blissful, euphoric, overjoyed, exultant, rapturous, rapt, enraptured, in seventh heaven, on cloud nine, over the moon, walking on air, beside oneself with joy, jumping for joy	
	comfortable	physically relaxed and free from constraint. Free from stress or tension.	pleasant, free from hardship, well off, well-to-do, affluent, luxurious, gracious, opulent, elegant	comfortable often used in an accepting way
	excitement	A feeling of great enthusiasm and eagerness.	thrill, thrilling sensation, exciting sensation, adventure, treat pleasure, delight, joy informal kick, buzz, high… exhilaration, elation, animation, enthusiasm, eagerness, anticipation, feverishness, fever, delirium, agitation, emotion, fire, fieriness, intensity, zeal, zest	excited was used a lot
	enthusiasm	Intense and eager enjoyment, interest, or approval.	eagerness, keenness, ardour, fervour, warmth, passion, zeal, zealousness, zest, gusto, brio, pep, go, sap, liveliness, vivacity, vivaciousness, energy, verve, vigour, dynamism, vehemence, fire, excitement, exuberance, ebullience, spirit, avidity, avidness wholeheartedness, commitment, willingness, readiness, devotion, devotedness, fanaticism, earnestness	

like	Find agreeable, enjoyable, or satisfactory.	enjoy, have a taste for, have a preference for, have a liking for, have a weakness for, be partial to, delight in, find pleasure in, take pleasure in, be keen on, find agreeable, derive pleasure from, be pleased by, have a penchant for, have a passion for, derive satisfaction from, find enjoyable, take to, appreciate...informal get a kick from of, get a kick out of, have a thing about, be into, get off on, go for, be mad about, be mad for, dig, groove on, get a charge from of, get a charge out of, get a buzz from of, get a buzz out of	like was only counted when used in this context
love	strong feeling of affection... A great interest and pleasure in something..Like or enjoy very much	passion, ardour, desire, lust, yearning, infatuation, adulation, besottedness... enjoyment, appreciation, soft spot, taste, delight, relish, passion, zeal, appetite, zest, enthusiasm, keenness, predilection, penchant, fondness compassion, care, caring, regard, solicitude, concern, warmth, friendliness, friendship, kindness, charity, goodwill, sympathy, kindliness, altruism, philanthropy, unselfishness, benevolence, brotherliness, sisterliness, fellow feeling, humanity	
passion	An intense desire or enthusiasm for something.	fervour, ardour, intensity, enthusiasm, eagerness, zeal, zealousness, vehemence, vigour, avidity, avidness, feeling, emotion, fire, heat, fieriness, fierceness, excitement, energy, animation, gusto, zest, zestfulness, spirit, spiritedness, commitment, fanaticism, violence..enthusiasm, love, mania, keen interest, fascination, obsession, fanaticism, fixation, predilection, compulsion, appetite, relish, partiality, liking, interest, weakness, penchant, addiction, fondness	
fun	Enjoyment, amusement, or light-hearted pleasure. ..Amusing, entertaining, or enjoyable	pleasure, entertainment, enjoyment, amusement, excitement, gratification jollification, merrymaking leisure, relaxation, relief, respite, rest, refreshment recreation, diversion, distraction good time, great time	note fun is not an emotion but emotions happen when having fun
cool	fresh, crisp, refreshing, invigorating, bracing, brisk... trendy, funky, with it, hip, in, big, happening, now, groovy, sharp, swinging...calm, cool, calm, and collected, composed,	calm, cool, calm, and collected, composed, as cool as a cucumber, collected, cool-headed, level-headed, self-possessed, controlled, self-controlled, poised.. serene, tranquil, relaxed, unruffled, unperturbed, unflustered, undisturbed, unagitated, unmoved, unbothered, untroubled ...trendy, funky, with it, hip, in, big, happening, now, groovy, sharp, swinging. 'it's a really cool song—I love it' excellent superb	The most common use of cool in NZ is for excellent and superb

B interest/engagement	interest	Showing curiosity or concern about something or someone; having a feeling of interest....[attributive] Having an interest or involvement; not impartial.	attentive, intent, focused, absorbed, engrossed, fascinated, riveted, gripped, captivated, rapt, agog, intrigued, enquiring, inquisitive, curious, burning with curiosity earnest, keen, eager	
	engaged	did not appear in Oxford dcitionary as meaning involved or focussed	only similar was attached and link to marriage	This is used more in educational literature for engagement in learning and in psychological literature for emotional engagement
	curiosity	A strong desire to know or learn something.	inquisitiveness, interest, spirit of enquiry	
	explore	Travel through (an unfamiliar area) in order to learn about it. Inquire into or discuss (a subject) in detail. Examine or evaluate (an option or possibility)	investigate, look into, look over, enquire into, consider, check out examine, research, survey, scrutinize, scan, study, review, probe, dissect, take stock of, go into, go over with a fine-tooth comb	strong link with explore and adventure and the outdoors
	mystery	A person or thing whose identity or nature is puzzling or unknown... Secrecy or obscurity....Something that is difficult or impossible to understand or explain.	puzzle, enigma, conundrum, riddle, secret, unsolved problem, problem, question, question mark, closed book... secrecy, darkness, obscurity, ambiguity, ambiguousness, uncertainty, impenetrability, vagueness, nebulousness inscrutability, inscrutableness, unfathomableness, mystique, romance	
	suspense	A state or feeling of excited or anxious uncertainty about what may happen.	tension, uncertainty, doubt, doubtfulness, anticipation, expectation, expectancy, excitement, anxiety, nervousness, apprehension, apprehensiveness, strain	
	anticipation	The action of anticipating something; expectation or prediction.	expectation, prediction, forecast... expectancy, expectation, hope, hopefulness excitement, suspense	
	surprise	An unexpected or astonishing event, fact, etc.... A feeling of mild astonishment or shock caused by something unexpected. Denoting something done or happening unexpectedly.	astonishment, amazement, incredulity, bewilderment, stupefaction, wonder, confusion, disbelief consternation shock, bolt from the blue, bolt out of the blue, thunderbolt, bombshell, revelation, source of amazement, rude awakening, eye-opener	
	different	Not the same as another or each other; unlike in nature, form, or quality, Novel and unusual.	dissimilar, unalike, unlike, non-identical, contrasting, divergent, disparate, poles apart incompatible, mismatched, inconsistent, opposed, at variance, at odds, clashing, conflicting, contradictory, contrary unusual, out of the ordinary, uncommon, unfamiliar, rare, unique, novel, new, fresh, original, unprecedented, unconventional, unorthodox, off-centre, atypical, out of the way special, singular, remarkable, noteworthy, exceptional, extraordinary, outrageous, outlandish, exotic	

	unexpected	Not expected or regarded as likely to happen.	unforeseen, unanticipated, unpredicted, not bargained for, unlooked for, unhoped for, out of the blue, without warning, without notice chance, fortuitous, unplanned, serendipitous, adventitious sudden, abrupt, surprising, startling, astonishing, uncommon, abnormal, extraordinary	
	keen	Having or showing eagerness or enthusiasm...Interested in or attracted by	enthusiastic, avid, eager, ardent, passionate, fervent, fervid, impassioned, wholehearted, zestful, zealous, driven willing, conscientious, committed, dedicated diligent, earnest, industrious, assiduous, intent	
extension of interest: moments of high awarenss impact	blown away	for something shocking or exciting to overwhelm a person; to excite a person very much. (the freedictionary.com)		note that the on line dictionary and thesaurus did not have blown away. The printed thesaurus didn't. The printed dictionary had to kill someone by shooting
	eye opener	1. An utterly shocking or startling thing, situation, or revelation. (Sometimes hyphenated.) The free dictionary.com An event or situation that proves to be unexpectedly enlightening.	enlightenment: Rogets thesaurus. Astonishment amazement	this was used in the context of awareness raising
	impact learning moment	A marked effect or influence. learning : The acquisition of knowledge or skills through study, experience, or being taught	effect, influence, impression, footprint scholarship, knowledge, education, erudition, culture, intellect, academic attainment, acquirements, enlightenment, illumination, edification, book learning, insight, information, understanding, sageness, wisdom,	this was prompted later in interviews but interpeted from the earlier conversations in the interview. It is not commomnly used but is more evident in educational literature
	aha moment	A moment or instance at which a sudden, revelatory idea, realization, or solution to a problem comes to mind. (the freedictionary.com) also sometimes refered to as the A-ha moment	We'd been working on the problem at the lab for weeks, but the aha moment came to me when I was out gardening! You tube video from the free dictionary.com	I found it interesting that a you tube video used an outdoor activity as an example of where aha moments happen.
	other words used included insight, revealing and deep			
Negative emotions	frustration	The feeling of being upset or annoyed as a result of being unable to change or achieve something. The prevention of the progress, success, or fulfilment of something.	exasperation, annoyance, anger, vexation, irritation, bitterness, resentment disappointment, discouragement, disheartenment, dispiritedness, depression, dissatisfaction, discontentment, discontent informal aggravation	note that this was commonly used with a positive temperer

167

annoyed	Slightly angry; irritated.	irritated, cross, angry, vexed, exasperated, irked, piqued, displeased, put out, fed up, disgruntled, in a bad mood, in a temper, testy, in high dudgeon, huffy, in a huff, resentful, aggrieved furious, irate, infuriated, incensed, enraged, wrathful, choleric informal aggravated, peeved, nettled, miffed, miffy, mad, riled, hacked off, peed off, hot under the collar, foaming at the mouth	
angry	Feeling or showing strong annoyance, displeasure, or hostility; full of anger. stormy, turbulent, or threatening.	irate, annoyed, cross, vexed, irritated, exasperated, indignant, aggrieved, irked, piqued, displeased, provoked, galled, resentful furious, enraged, infuriated, in a temper, incensed, raging, incandescent, wrathful, fuming, ranting, raving, seething, frenzied, in a frenzy, beside oneself, outraged, in high dudgeon irascible, bad-tempered, hot-tempered, choleric, splenetic, dyspeptic, tetchy, testy, crabby, waspish hostile, antagonistic, black, dark, dirty, filthy	
scared	Fearful; frightened.	frightened, afraid, fearful, nervous, panicky, agitated, alarmed, worried, intimidated terrified, petrified, horrified, panic-stricken, scared stiff, frightened out of one's wits, scared out of one's wits, scared witless, frightened to death, scared to death, terror-stricken, terror-struck, horror-stricken, horror-struck, frantic, hysterical, beside oneself with one's heart in one's mouth, shaking in one's shoes, shaking like a leaf, shaky	
apprehensive	Anxious or fearful that something bad or unpleasant will happen.	anxious, alarmed, worried, uneasy, nervous, concerned, agitated, restless, edgy, on edge, fidgety, tense, strained, stressed, neurotic, panicky, afraid, scared, frightened, fearful, terrified informal on tenterhooks,	
nervous	Anxious or apprehensive. (of a feeling or reaction) resulting from anxiety or anticipation.	highly strung, easily frightened, easily agitated, anxious, edgy, tense, excitable, jumpy, skittish, brittle, neurotic, hysterical timid, timorous, mousy, shy, fearful, frightened, frightened of one's own shadow, apprehensive, scared	
comfort zone	Psychology) a situation or position in which a person feels secure, comfortable, or in control: example encouraging people to work outside their comfort zone.		used in outdoor education literature

emotion /motivation concepts	emotional intelligence positive psychology.... Resilience, mindfulness.. Self awareness self confidence, social skills motivation critical reflection, academic emotions, success proud achieve etc			using academic definitions of this. to include the concepts listed in column B
experiential methods... there are many of these I have list just words that were frequent but have interpreted experiences and experiential learning as part of this	experiential learning	Involving or based on experience and observation. The fact of being consciously the subject of a state or condition; of being consciously affected by an event; a state or condition viewed subjectively; an event by which one is effected; knowledge reuslting from actual observationor from what one has undergone (Oxford dictionary)	not in the thesaurus... but Dewey used the terms together , the interaction of people with environments and linking action and thought.	most of these will be clarified in the experiential learning literature. This is to be followed up
	debate	An argument about a particular subject, especially one in which many people are involved.	discussion, exchange of views, discourse, parley argument, dispute, wrangle, altercation, war of words arguing, argumentation, wrangling, sparring, disputation, dissension, disagreement, controversy, contention, conflict, disharmony negotiations, talks dialogue, comment, interest	
	discussion	The action or process of talking about something in order to reach a decision or to exchange ideas...A conversation or debate about a specific topic.	conversation, talk, dialogue, discourse, conference, debate, exchange of views, consultation, deliberation powwow, chat, tête-à-tête, heart-to-heart seminar, symposium talks, negotiations, parley argument, dispute	
	reflection	Serious thought or consideration. An idea about something, especially one that is written down or expressed	thought, thinking, consideration, contemplation, study, deliberation, pondering, meditation, musing, rumination, cogitation, brooding, agonizing... opinion, thought, view, viewpoint, belief, feeling, idea, impression, conclusion, judgement, assessment, estimation comment, observation, remark, statement, utterance, pronouncement, declaration	
	choice	A range of possibilities from which one or more may be chosen.	option, alternative, possibility, possible course of action solution, answer, way out	

169

	physical, activity, doing	Relating to the body as opposed to the mind.	bodily, corporeal, corporal, fleshly, in the flesh	This was a fascinating Oxford dictionary definition : Relating to the body as opposed to the mind. 'a range of physical and mental challenges' As if body and mind are separate?!
Location	earth	The planet on which we live; the world.	world, globe, planet, sphere, orb... land, ground, dry land, solid ground, terra firma floor	
	nature	The phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations.	the natural world, the living world, Mother Nature, creation, the world, the environment, the earth, Mother Earth, the universe, the cosmos, natural forces wildlife, flora and fauna, countryside, landscape, scenery	
	outdoors	..Any area outside buildings or shelter, typically that far away from human habitation...In or into the open air; outside a building or shelter.	open air, out-of-doors, outside, exterior, external exposed to the elements, not under cover, field en plein air, plein-air al fresco	
Writers, theories and models				I ticked this category whenever a participant refered to something theoretical, either an authors name, a model, a theory a theoretical concept etc.
group and people related				this category to be used for reference to the group, other groups, the tutors, their students etc
Graduates own practice	practice	The actual application or use of an idea, belief, or method, as opposed to theories relating to it. 'the principles and practice of teaching' Repeated exercise in or performance of an activity or skill so as to acquire or maintain proficiency in it.	application, exercise, use, operation, implementation, execution, enactment, action, doing	this term will be used when refering to descriptions and observations that graduates made of their own practice. Note USA uses practice for both the verb and noun whereas UK uses practise for the verb and practice for the noun
	teach facilitate educate apply were all used in this context			

Table 13 Word Use Frequency Chart from Nvivo

(next 11 pages)

Word	Length	Count	Percentage (%)	Similar Words
think	5	799	3.64	think, thinking
remember	8	757	3.45	remember, remembered, remembering
like	4	688	3.14	like, liked, likely, likes
know	4	495	2.26	know, knowing, knows
things	6	447	2.04	thing, things
really	6	394	1.80	really
learning	8	309	1.41	learn, learned, learning, learnings, learns
group	5	290	1.32	group, groups
people	6	274	1.25	people, peoples
feeling	7	217	0.99	feel, feeling, feelings, feels
actually	8	197	0.90	actual, actually
good	4	190	0.87	good, goodness
talking	7	158	0.72	talk, talked, talking, talks
trip	4	152	0.69	trip, trips
differently	11	150	0.68	difference, differences, different, differently
cool	4	149	0.68	cool
emotions	8	149	0.68	emotion, emotional, emotionally, emotions
laughs	6	133	0.61	laugh, laughed, laughing, laughs
class	5	127	0.58	class, classes
teaching	8	125	0.57	teach, teaching
interesting	11	124	0.57	interest, interested, interesting, interestingly
looking	7	121	0.55	look, looked, looking, looks
work	4	118	0.54	work, worked, working, workings, works
students	8	113	0.52	student, students
course	6	111	0.51	course, courses
island	6	110	0.50	island
activity	8	104	0.47	activities, activity
experiences	11	100	0.46	experience, experiences, experiment
enjoy	7	98	0.45	enjoy, enjoyable, enjoyed, enjoying, enjoyment, enjoys
went	4	98	0.45	went
educator	8	97	0.44	educate, education, educational, educator, educators
starts	6	96	0.44	start, started, starting, starts
cave	4	95	0.43	cave, caves, caving
thought	7	93	0.42	thought, thoughts
guess	5	92	0.42	guess, guessed, guessing
memories	8	91	0.42	memories, memory
outdoor	7	90	0.41	outdoor, outdoors
everyone	8	88	0.40	everyone, everyones
definitely	10	87	0.40	definite, definitely, definition
happen	6	87	0.40	happen, happened, happening, happens
quail	5	85	0.39	quail
great	5	82	0.37	great
story	5	80	0.36	stories, story
trying	6	79	0.36	tried, trying

172

personally	10	79	0.36	person, personal, personalities, personality, personally, persons
idea	4	78	0.36	idea, ideas
book	4	77	0.35	book, books
school	6	76	0.35	school, schools
exciting	8	75	0.34	excite, excited, excitement, exciting
means	5	75	0.34	mean, meaning, meanings, means
projects	8	74	0.34	project, projects
engaging	8	72	0.33	engage, engaged, engagement, engages, engaging
felt	4	70	0.32	felt
classroom	9	69	0.31	classroom, classrooms
places	6	69	0.31	place, placed, places
needs	5	68	0.31	need, needed, needs
dream	5	64	0.29	dream, dreamed, dreaming, dreams
readings	8	64	0.29	read, reading, readings
teachers	8	64	0.29	teacher, teachers
presentations	13	64	0.29	present, presentable, presentation, presentations, presented, presenting, presents
questions	9	63	0.29	question, questioned, questioning, questions
points	6	60	0.27	point, pointed, pointing, points
theory	6	59	0.27	theories, theory
beans	5	54	0.25	bean, beans
outside	7	54	0.25	outside
walking	7	54	0.25	walk, walked, walking
mind	4	53	0.24	mind, minds
theorists	9	53	0.24	theorist, theorists
paper	5	52	0.24	paper, papers
raft	4	51	0.23	raft, rafting, rafts
sessions	8	50	0.23	session, sessions
particular	10	49	0.22	particular, particularly
debate	6	48	0.22	debate, debates
together	8	48	0.22	together
night	5	48	0.22	night, nights
frustration	11	46	0.21	frustrated, frustrating, frustration
research	8	46	0.21	research, researched, researcher, researching
shelter	7	45	0.21	shelter, shelters
obviously	9	45	0.21	obvious, obviously
real	4	45	0.21	real
strongly	8	45	0.21	strong, strongly
discussions	11	44	0.20	discuss, discussed, discussing, discussion, discussions
helps	5	44	0.20	help, helped, helpful, helping, helps
degree	6	43	0.20	degree, degrees
find	4	43	0.20	find, finding, findings
hard	4	43	0.20	hard, hardly
moment	6	43	0.20	moment, moments
knew	4	42	0.19	knew
share	5	42	0.19	share, shared, sharing
someone	7	42	0.19	someone

everything	10	41	0.19	everything
change	6	40	0.18	change, changed, changes, changing
passion	7	40	0.18	passion, passionate, passions
assessments	11	38	0.17	assess, assessed, assessing, assessment, assessments
awesome	7	36	0.16	awesome
writing	7	35	0.16	write, writing
grade	5	34	0.16	grade, graded, grades, grading
important	9	34	0.16	importance, important
saying	6	34	0.16	saying
building	8	33	0.15	build, building, builds
field	5	33	0.15	field
life	4	33	0.15	life
give	4	32	0.15	give, giving
picture	7	32	0.15	picture, pictures
game	4	31	0.14	game, games
sticks	6	30	0.14	stick, sticking, sticks
thanks	6	30	0.14	thank, thankful, thanks
amazing	7	29	0.13	amazing, amazingly
brain	5	29	0.13	brain, brains
challenge	9	29	0.13	challenge, challenged, challenges, challenging
connection	10	29	0.13	connect, connected, connecting, connection, connections, connects
inside	6	29	0.13	inside
jump	4	29	0.13	jump, jumped, jumping
sense	5	29	0.13	sense, senses
marking	7	28	0.13	mark, marked, marking, marks
moving	6	28	0.13	move, moved, moving
stands	6	28	0.13	stand, standing, stands
curriculum	10	27	0.12	curriculum
link	4	27	0.12	link, linked, linking, links
positive	8	27	0.12	position, positive, positives, positivity
boat	4	26	0.12	boat, boats
high	4	26	0.12	high, highly
love	4	26	0.12	love, loved, lovely, loving
memorable	9	26	0.12	memorable
team	4	26	0.12	team, teamed, teams
competitive	11	25	0.11	competition, competitive
create	6	25	0.11	create, created, creates, creating
kids	4	25	0.11	kids
lesson	6	25	0.11	lesson, lessons
answer	6	24	0.11	answer, answering, answers
apply	5	24	0.11	applied, applies, apply, applying
atmosphere	10	24	0.11	atmosphere
example	7	24	0.11	example, examples
listening	9	24	0.11	listen, listened, listening
method	6	24	0.11	method, methods
whatever	8	24	0.11	whatever
world	5	24	0.11	world, worlds
assignments	11	23	0.10	assigned, assignment, assignments

curiosity	9	23	0.10	curiosity
happy	5	23	0.10	happiness, happy
level	5	23	0.10	level, levels
possibly	8	23	0.10	possible, possibly
reason	6	23	0.10	reason, reasonably, reasoning, reasons
shows	5	23	0.10	show, showed, showing, shows
studied	7	23	0.10	studied, studies, study, studying
absolutely	10	22	0.10	absolute, absolutely
choose	6	22	0.10	choose, choosing
experiential	12	22	0.10	experiential
facts	5	22	0.10	fact, facts
pass	4	22	0.10	pass, passed, passing
poems	5	22	0.10	poem, poems
totally	7	22	0.10	totally
best	4	21	0.10	best
college	7	21	0.10	college
decided	7	21	0.10	decide, decided
environment	11	21	0.10	environment
information	11	21	0.10	inform, informal, information, informed
stuck	5	21	0.10	stuck
boring	6	20	0.09	bored, boring
dark	4	20	0.09	dark, darkness
found	5	20	0.09	found
head	4	20	0.09	head, heads
realising	9	20	0.09	realisation, realise, realised, realising
style	5	20	0.09	style, styles
worry	5	20	0.09	worried, worries, worry
essay	5	19	0.09	essay, essays
hours	5	19	0.09	hour, hours
mystery	7	19	0.09	mysteries, mystery
topic	5	19	0.09	topic, topics
understand	10	19	0.09	understand, understanding
values	6	19	0.09	value, valued, values
certainly	9	18	0.08	certain, certainly
choice	6	18	0.08	choice, choices
creative	8	18	0.08	creative, creativity
general	7	18	0.08	general, generally
kayaks	6	18	0.08	kayak, kayaked, kayaking, kayaks
practice	8	18	0.08	practical, practice, practices
reflect	7	18	0.08	reflect, reflected, reflection, reflective, reflects
relating	8	18	0.08	relate, related, relates, relating, relation
taught	6	18	0.08	taught
auction	7	17	0.08	auction, auctioned, auctioneer, auctioning
debrief	7	17	0.08	debrief, debriefed, debriefs
area	4	17	0.08	area, areas
comfortable	11	17	0.08	comfort, comfortable
completely	10	17	0.08	complete, completed, completely
content	7	17	0.08	content
conversation	12	17	0.08	conversation, conversations

Word				
everybody	9	17	0.08	everybody
home	4	17	0.08	home, homing
inspiring	9	17	0.08	inspiration, inspire, inspired, inspiring
live	4	17	0.08	live, lived, lives, living
powerful	8	17	0.08	power, powerful
remind	6	17	0.08	remind, reminder, reminders, reminding, reminds
situation	9	17	0.08	situation, situations
solo	4	17	0.08	solo, solos
impact	6	16	0.07	impact, impactful, impacting, impacts
room	4	16	0.07	room, rooms
detail	6	16	0.07	detail, detailed, details
easy	4	16	0.07	easy
enough	6	16	0.07	enough
huge	4	16	0.07	huge, hugely
playing	7	16	0.07	play, played, playing
special	7	16	0.07	special
beach	5	15	0.07	beach
deep	4	15	0.07	deep
element	7	15	0.07	element, elements
fail	4	15	0.07	fail, failing
funny	5	15	0.07	funny
message	7	15	0.07	message, messages
nature	6	15	0.07	natural, nature
park	4	15	0.07	park
polytech	8	15	0.07	polytech
transcript	10	15	0.07	transcript
written	7	15	0.07	written
indoor	6	15	0.07	indoor, indoors
struggle	8	15	0.07	struggle, struggled, struggles, struggling
ahha	4	14	0.06	ahha
involved	8	14	0.06	involved, involvement
maori	5	14	0.06	maori
motivation	10	14	0.06	motivated, motivating, motivation, motivator
planning	8	14	0.06	plan, planning, plans
sell	4	14	0.06	sell, selling
social	6	14	0.06	social
cooperate	9	14	0.06	cooperate, cooperation
outcome	7	14	0.06	outcome, outcomes
action	6	13	0.06	action, actioning, actions
equipment	9	13	0.06	equipment
feedback	8	13	0.06	feedback
king	4	13	0.06	king
negative	8	13	0.06	negative
nervous	7	13	0.06	nervous, nervously
physical	8	13	0.06	physical, physically
race	4	13	0.06	race, races
running	7	13	0.06	running, runs
setting	7	13	0.06	setting
view	4	13	0.06	view, views

vividly	7	13	0.06	vivid, vividly, vividness
weather	7	13	0.06	weather
worth	5	13	0.06	worth
swim	4	13	0.06	swim, swimming, swims
tutors	6	13	0.06	tutor, tutors
aware	5	12	0.05	aware
clue	4	12	0.05	clue, clues
cold	4	12	0.05	cold
effort	6	12	0.05	effort
expect	6	12	0.05	expect, expectations, expected, expecting
facilitator	11	12	0.05	facilitated, facilitating, facilitation, facilitator, facilitators
opportunity	11	12	0.05	opportunities, opportunity
poor	4	12	0.05	poor
song	4	12	0.05	song, songs
split	5	12	0.05	split, splits
squares	7	12	0.05	square, squares
today	5	12	0.05	today
wonder	6	12	0.05	wonder, wondered, wonderful, wondering
opinions	8	12	0.05	opinion, opinions
agree	5	11	0.05	agree, agreed
chose	5	11	0.05	chose
confident	9	11	0.05	confidence, confident
design	6	11	0.05	design, designed, designing
environmental	13	11	0.05	environmental
fantastic	9	11	0.05	fantastic
figure	6	11	0.05	figure, figured, figures, figuring
friends	7	11	0.05	friend, friendly, friends
human	5	11	0.05	human, humans
nice	4	11	0.05	nice, nicely
orienteering	12	11	0.05	orientated, orienteering
programme	9	11	0.05	programme, programmes
quiet	5	11	0.05	quiet, quietly
rest	4	11	0.05	rest
sleep	5	11	0.05	sleep, sleeping
touch	5	11	0.05	touch, touched, touching
afterwards	10	10	0.05	afterwards
argue	5	10	0.05	argue, arguing
blah	4	10	0.05	blah
camp	4	10	0.05	camp, camping, camps
candles	7	10	0.05	candle, candles
circle	6	10	0.05	circle, circles
depth	5	10	0.05	depth
draw	4	10	0.05	draw, drawing, drawings
exercise	8	10	0.05	exercise, exercises
fascinating	11	10	0.05	fascinated, fascinating
fast	4	10	0.05	fast
food	4	10	0.05	food
goes	4	10	0.05	goes
half	4	10	0.05	half

impressions	11	10	0.05	impressed, impression, impressions
initially	9	10	0.05	initial, initially
knowledge	9	10	0.05	knowledge
meeting	7	10	0.05	meet, meeting
must	4	10	0.05	must
potential	9	10	0.05	potential, potentially
process	7	10	0.05	process, processes
seems	5	10	0.05	seem, seemed, seems
shark	5	10	0.05	shark, sharks
small	5	10	0.05	small
society	7	10	0.05	societies, society
soon	4	10	0.05	soon
specific	8	10	0.05	specific, specifically
supported	9	10	0.05	support, supported, supportive
taken	5	10	0.05	taken
tribe	5	10	0.05	tribe, tribes
ways	4	10	0.05	ways
reinforced	10	9	0.04	reinforced, reinforcement, reinforces, reinforcing
trade	5	9	0.04	trade, traded, trading
zone	4	9	0.04	zone, zoned, zones, zoning
block	5	9	0.04	block, blocks
curious	7	9	0.04	curious
decisions	9	9	0.04	decision, decisions
deeper	6	9	0.04	deeper
describe	8	9	0.04	describe, described, describes
drive	5	9	0.04	drive, drives, driving
earth	5	9	0.04	earth
earthquake	10	9	0.04	earthquake, earthquakes
exploring	9	9	0.04	exploration, explore, exploring
focus	5	9	0.04	focus
health	6	9	0.04	health
incredible	10	9	0.04	incredible
learner	7	9	0.04	learner, learners
notes	5	9	0.04	note, noted, notes
skills	6	9	0.04	skill, skills
space	5	9	0.04	space
state	5	9	0.04	state
surprise	8	9	0.04	surprise, surprised, surprising
tired	5	9	0.04	tired
university	10	9	0.04	universe, university
water	5	9	0.04	water
deal	4	8	0.04	deal, dealing
explain	7	8	0.04	explain, explained, explaining
heaps	5	8	0.04	heap, heaps
sustainability	14	8	0.04	sustain, sustainability
adventure	9	8	0.04	adventure
bang	4	8	0.04	bang
contribution	12	8	0.04	contribute, contributed, contributing, contribution, contributions
country	7	8	0.04	countries, country

crazy	5	8	0.04	crazy
estate	6	8	0.04	estate
expedition	10	8	0.04	expedition
heightened	10	8	0.04	heighten, heightened, heightens
lake	4	8	0.04	lake
late	4	8	0.04	late
money	5	8	0.04	money
navigation	10	8	0.04	navigated, navigating, navigation
observed	8	8	0.04	observations, observe, observed, observer, observing
ocean	5	8	0.04	ocean
participation	13	8	0.04	participant, participants, participate, participating, participation
political	9	8	0.04	political
resources	9	8	0.04	resource, resources
scared	6	8	0.04	scared
sensations	10	8	0.04	sensation, sensations
silly	5	8	0.04	silly
speaking	8	8	0.04	speak, speaking
spectrum	8	8	0.04	spectrum
system	6	8	0.04	system, systems
task	4	8	0.04	task, tasks
test	4	8	0.04	test, tested, tests
thrown	6	8	0.04	thrown
zealand	7	8	0.04	zealand
allowed	7	7	0.03	allow, allowed, allows
angry	5	7	0.03	angry
apprehensive	12	7	0.03	apprehension, apprehensive
balance	7	7	0.03	balance
calendar	8	7	0.03	calendar
chuckles	8	7	0.03	chuckle, chuckles
concept	7	7	0.03	concept
critical	8	7	0.03	critical
culture	7	7	0.03	culturally, culture
gosh	4	7	0.03	gosh
honest	6	7	0.03	honest
intense	7	7	0.03	intense
keen	4	7	0.03	keen
leaves	6	7	0.03	leave, leaves, leaving
lucky	5	7	0.03	lucky
matter	6	7	0.03	matter
norm	4	7	0.03	norm, norming
placement	9	7	0.03	placement, placements
pressure	8	7	0.03	pressure
purpose	7	7	0.03	purpose, purposefully, purposely
review	6	7	0.03	review, reviewing
rheiny	6	7	0.03	rheiny
rich	4	7	0.03	rich
rock	4	7	0.03	rock
simple	6	7	0.03	simple
sing	4	7	0.03	sing, singing, sings

super	5	7	0.03	super
theme	5	7	0.03	theme, themes
unknown	7	7	0.03	
accepted	8	7	0.03	accept, acceptance, accepted
animated	8	7	0.03	animal, animals, animated
buzz	4	7	0.03	buzz, buzzing
care	4	7	0.03	care, careful, caring
flowing	7	7	0.03	flow, flowing
mountain	8	7	0.03	mountain, mountains
noise	5	7	0.03	noise, noises
party	5	7	0.03	parties, party
raining	7	7	0.03	rain, rained, raining, rains
relationships	13	7	0.03	relationship, relationships
relevant	8	7	0.03	relevance, relevant
surf	4	7	0.03	surf, surfing
training	8	7	0.03	train, trained, training
annoyed	7	6	0.03	annoyance, annoyed
beautiful	9	6	0.03	beautiful
booklet	7	6	0.03	booklet, booklets
bush	4	6	0.03	bush
chat	4	6	0.03	chat, chatting
context	7	6	0.03	context
credits	7	6	0.03	credit, credits
drawn	5	6	0.03	drawn
excellent	9	6	0.03	excellent
gear	4	6	0.03	gear
grid	4	6	0.03	grid
highlight	9	6	0.03	highlight, highlights
hilarious	9	6	0.03	hilarious
hill	4	6	0.03	hill, hills
history	7	6	0.03	history
hooked	6	6	0.03	hook, hooked, hooks
intelligence	12	6	0.03	intelligence, intelligences
interactive	11	6	0.03	interaction, interactive
journey	7	6	0.03	journey
lecture	7	6	0.03	lecture, lecturer, lectures
movement	8	6	0.03	movement
music	5	6	0.03	music
ncea	4	6	0.03	ncea
prepared	8	6	0.03	prepared, preparing
relaxed	7	6	0.03	relax, relaxed
rope	4	6	0.03	rope, ropes
safety	6	6	0.03	safety
self	4	6	0.03	self
sound	5	6	0.03	sound, sounds
stimulated	10	6	0.03	stimulate, stimulated, stimulation
stoked	6	6	0.03	stoked
tcoll	5	6	0.03	tcoll
tent	4	6	0.03	tent, tented
terrible	8	6	0.03	terrible, terribly

180

white	5	6	0.03	white
young	5	6	0.03	young
argument	8	6	0.03	argument, arguments
clicking	8	6	0.03	click, clicked, clicking, clicks
competing	9	6	0.03	compete, competed, competing
grow	4	6	0.03	grow, growing
guiding	7	6	0.03	guide, guided, guides, guiding
response	8	6	0.03	response, responses, responsibility
affect	6	5	0.02	affect, affected, affects
anticipation	12	5	0.02	anticipate, anticipated, anticipation
attitude	8	5	0.02	attitude, attitudes
beliefs	7	5	0.02	belief, beliefs
body	4	5	0.02	bodies, body
bonded	6	5	0.02	bonded, bonding, bonds
calm	4	5	0.02	calm, calming
cards	5	5	0.02	card, cards
cause	5	5	0.02	cause, caused
chance	6	5	0.02	chance, chances
classmates	10	5	0.02	classmate, classmates
colour	6	5	0.02	colour
cooking	7	5	0.02	cook, cooked, cooking
define	6	5	0.02	define, defined, defines
desks	5	5	0.02	desk, desks
development	11	5	0.02	developing, development
diploma	7	5	0.02	diploma, diplomas
direction	9	5	0.02	direct, direction, directly
effect	6	5	0.02	effect, effecting, effective, effectively, effects
experienced	11	5	0.02	experienced, experiencing
eyes	4	5	0.02	eyes
fairly	6	5	0.02	fair, fairly
fear	4	5	0.02	fear
fire	4	5	0.02	fire
focussed	8	5	0.02	focussed
frame	5	5	0.02	frame, framed, frames
future	6	5	0.02	future, futures
goal	4	5	0.02	goal, goals
graduate	8	5	0.02	graduate, graduates, graduating
grass	5	5	0.02	grass
growth	6	5	0.02	growth
helper	6	5	0.02	helper
insight	7	5	0.02	insight, insights
issues	6	5	0.02	issue, issues
judge	5	5	0.02	judge, judged, judging
leader	6	5	0.02	leader, leaders
load	4	5	0.02	load, loads
minutes	7	5	0.02	minute, minutes
mixed	5	5	0.02	mixed, mixing
offer	5	5	0.02	offer, offered, offering
paddle	6	5	0.02	paddle, paddled, paddles

page	4	5	0.02	page, pages
pairs	5	5	0.02	pair, pairs
path	4	5	0.02	path
peer	4	5	0.02	peer, peers
perspective	11	5	0.02	perspective, perspectives
philosophy	10	5	0.02	philosophy
photos	6	5	0.02	photo, photos
plant	5	5	0.02	plant, planting
progress	8	5	0.02	progress, progression
recounting	10	5	0.02	recounted, recounting
sand	4	5	0.02	sand
significant	11	5	0.02	significant
snippets	8	5	0.02	snippet, snippets
strange	7	5	0.02	strange
sumner	6	5	0.02	sumner
tend	4	5	0.02	tend, tending
tide	4	5	0.02	tide, tides
tool	4	5	0.02	tool, tools

Source: Cory-Wright, Emotions memories outdoor learning. Nvivo project (2017)

Table 14 Simplification of Word use Frequency Chart

Word	Count	Similar Words
learning	309	learn, learned, learning, learnings, learns
feeling	297	feel, feeling, feelings, feels, felt
differently	150	difference, differences, different, differently
emotions	149	emotion, emotional, emotionally, emotions
teaching	125	teach, teaching
interesting	124	interest, interested, interesting, interestingly
enjoy	121	enjoy, enjoyable, enjoyed, enjoying, enjoyment, happy to do
experience	100	experience, experiences, experiment
fun	99	fun funny
outdoor	90	outdoor, outdoors
exciting	75	excite, excited, excitement, exciting
engaging	72	engage, engaged, engagement, engages, engaging
frustration	46	frustrated, frustrating, frustration
discussions	44	discuss, discussed, discussing, discussion, discussions
passion	40	passion, passionate, passions
curiosity	32	curiosity, curious
positive	27	position, positive, positives, positivity
happy	23	happiness, happy
experiential	22	experiential
mystery	19	mysteries, mystery
inspiring	17	inspiration, inspire, inspired, inspiring
powerful	17	power, powerful
impact	16	impact, impactful, impacting, impacts
motivation	14	motivated, motivating, motivation, motivator
nervous	13	nervous, nervously
opinion	12	opinion, opinions
fascinating	10	fascinated, fascinating
surprise	9	surprise, surprised, surprising
apprehensive	7	apprehension, apprehensive
unknown	7	unknown
anticipation	5	anticipate, anticipated, anticipation
combined concepts		
	134	fascinating and interesting
	122	experience and experiential
	72	curiosity,mystery, surprise unknown anticipation
	64	inspiring, motivation, powerful, impact
	20	nervous, apprehensive

Table 15 Frequency of Emotion Word use by Participants

Code: some are nested Shown with indent	Interviewees recalled	Occurrences	Words used in description
Positive emotions (general)	13	13	744
• Enjoyable	13	151	12207
• Interest/curiosity	12	58	5173
• Passion/love	10	22	1770
Total positive	13	240	19894
Impact learning moments	11	60	5408
Motivation	4	5	519
Negative emotions general including sad	10	18	1759
• Boredom	5	8	824
• Fear	4	6	535
• Frustration annoyance	9	27	2766
• Nervousness and apprehension	12	23	1929
Total negative	12	82	7813
Sessions and field trips	(took part)		
Assignments	10	38	2388
Learning teaching methods	1	1	109
Mystery trip	13	57	4987
-Beans auction	4 (6)	14	1343
-cave swim	4 (4)	6	326
-enviro games	1	1	109
-floating islands	1 (1)	1	109
-night walk	8 (12)	19	1436
-other activities	2	5	384
-raft races	6 (6)	12	1114
-shelter building	5 (6)	15	1352
-shipwreck activity	4 (5)	10	743
-story	6 (13)	10	790
Political squares	4 (4)	8	974
Cave	8 (8)	20	1952
Society	1	1	109
Solo	3	3	205
Theorist book	13	32	2573
Some other findings			
• Emotional intelligence	7	14	1292
• Experiential Ed learning	12	80	5924
• Theoretical Learning	11	38	2541
• Learning applied to own practice	11	45	4030
The big picture	11	34	2806

Notes:
Anomalies in brackets, not all people did all trips due to change in course and earthquakes.
Numbers of the 13 participants who did each session shown in brackets
Negative emotions general had sad ones added in as there was no node for this.

Table 16 The Strongest Theme for each Participant

participant	Field trips enjoy	Field trips excite	Cave-enjoy	Cave-excite	Book	Debate	Assignments Dream	Political Squares	Main memory	Other of note
03 Lily	Local area	exploring	Laughed about cave wow	mystery aspect	Connected Friere	Not done	Creative local	Not done	support	Exped memories
04 Harry	Fun journey	Place new but local	Method teaching ahha	anticipate	Connected Uncle	Self assess opportunity	Fuzzy memory	Not done	facilitation	
05 Meg	blast	Activities represent theories	Stories excited	Awe wonder	Excited to publish	Lots observation	Enjoyed Real life	Not done	Observations of others	
06 Lucie	Orienteering groups	*Day trip only weather*	Vivid blownaway	Mystery wonder	Used it	heated	relevant	Not done	Activities to do in job	Solo vivid memory Y1 theory
08 Rob	History fun	creative	Music trepidation	Interesting surprise	Choice interest	Low effort some ppl	Interest enjoy	Not done	Group fun	Solo vivid memory
09 Andy	Cruisy relaxed	philosophical	deep	Crazy Been back	Very useful	Value not immediate	Low rules freedom	Not done	Applied to school	Enviro sessions story
09 Francie	Self directed	Sleep under stars	Apprehensive atmosphere	Been back	Very useful	Long unresolved	People Listened to Each others	Not done	Uses it lots	School pracs Y1 theory
11Barry **EarthQ changes**	Fun	Mystery edgy	*No cave Foggy mem*	*Night walk fun In end*	*No book* Theory done	*Not done*	Ideas explode	Not done	Theory Philosophy ideology	Night walk made fun
12 Jason	history	Nervous excited	*No cave Wet night*	First buzz	No mem	No mem	real	opinions	Relates to current work	Got wet modulated
13Heather	Fizz Really good	laughs	*No Cave windy*	*Lyttelton lights*	choice	Just do it right thing,	Keen Choice Uni	Not there	Current teaching course	Night walk Made fun
14 Mary	Really enjoyed	amazing	Cool special	Poem heavy heart	Piaget	agreed	Experiential sustainable	intense	*dramatic most scary emotion*	Pretend seal incident
15 Poppy	Group Great time	anticipation	Really enjoyed	Excited Sense of place	Cool grp perspective	*Not there*	Awesome freedom	Invested green	passion	Comfort zone obs
15 Robbie	Everyone enjoyed	Excited Boat jump	Really enjoyed	Excited place	Showed Grandma	Chill	Enjoyed group aspect	Cool discussion	Enjoyed Wrote poe	Story memory

Table 17 Timing of Recall in Interviews and Percentage Recall of Sessions

moments/activity	FT	Cave	Boat J	rafts	auction	cleudo	shelters	night w	story	Pol sq	solo	book	dream	curric	society	crit thk	debates	theory	year 1	applied at work	example from work
names below																					
03 Lily	4	5	ND	ND	ND	0	ND	5	0	ND	ND	5	1	0	ND	0	ND	3	general2	yes	tutoring girls
04 Harry	4	2	ND	ND	ND	0	ND	4	0	ND	0	5	6	0	ND	0	5	1	general1	yes	facilitation
04 Meg	2	1	ND	ND	ND	0	ND	4	0	ND	ND	3	3	0	ND	0	3	3		yes	teaching
06 Lucie	3	1	ND	ND	ND	0	ND	ND	0	ND	2	3	6	0	ND	0	3	3	news 2	yes	ABL's at school
08 Rob	1	3	ND	ND	ND	0	ND	2	0	ND	2	5	3	0	ND	0	3	5		yes	tetiary
09 Andy	4	2	ND	ND	ND	0	ND	4	4	ND	0	1	1	0	ND	0	3	2	school	yes	health
09 Francie	1	2	ND	ND	ND	0	ND	4	4	ND	0	1	2	0	ND	0	3	2	some	yes	teaching
11 Barry	1	ND	ND	3	ND	4	3	3	4	ND	ND	2	3	2	6	3	3	3		yes	CSOE course
12 Jason	4	ND	ND	4	4	0	2	2	0	5	0	5	4	0	0	0	5	1	brain 1	yes	animal empathy
13 Heather	1	ND	1	1	1	0	5	2	0	ND or 7	0	1	5	0	2	3	2	2	cable t	yes	school
14 Mary	1	2	1	1	2	0	2	1	0	3	2	3	2	2	3	3	3	2	school 3	yes	school
15 Poppy	1	1	2	2	2	0	2	1	2	2	0	5	5	0	3	3	3	3		yes	vision
15 Robbie	1	1	1	1	1	0	1	2	2	5	0	3	5	0	5	5	3	5	brain 3	yes	t coll
number took part	13	10	4	6	5	13	6	12	13	5	10	13	13	13	6	6	12	13	13	13	
number recalled	13	10	4	6	5	1	6	12	5	4	3	12	12	2	3	5	7	10	9	13	
% recalled	100	100	100	100	100	7.6	100	100	38	80	30	92	92	15	23	38	58	83	69	100	8 out 20 100% mem

Key to table

1 =1st recall

2= 2nd recall

3 = 3rd or more recall

4= picture / map prompt

5= simple word prompt

6= detailed word prompt

7= no recall so told them

8= after thought recall

0= not discussed

ND = not done

Year 1 = year 1 memories
 with no prompt

Activities on field trip

FT field trip	the 2 day trip and activities below were part of it
Cave	cave poems
Boat j	jumping off boat
rafts	building rafts
auction	buying gear
cleudo	a clue activity run on the field trip
shelters	shelter building
night w	night walk
story	story about tutor experiences told in engaging way

Activities outside

pol sq	political squares- a question game on issues
solo	solo night out in shelter

classes

debates	on the book marking and others
society	general link with society
crit thk	skills of critical thinking recalled
theory	theory and authors recalled

assignments

dream	programme planning
book	class book on theory
curric	The NZ school curriculum

Table 18 Frequency of Recalled Experiences within Group

Activity- memory below	Field Trip	Cave	boat jump	rafts	auction	cleudo	shelters	night w	story	politics squares	solo	book	dream	curric	society	critical think	debates	theory
# 1st recall	7	4	3	3	2	0	1	2	0	0	0	3	2	0	0	0	0	2
# 2nd recall	1	4	1	1	2	0	3	4	2	2	3	1	2	2	1	0	1	4
# 3rd or more	1	1	0	1	0	0	1	1	0	1	0	4	3	0	2	4	9	5
# picture prompt	4	0	0	1	1	1	0	4	3	0	0	0	1	0	0	0	0	0
# word prompt	0	1	0	0	0	0	1	1	0	2	0	5	3	0	1	1	2	2
# detail prompt	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0
told them	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
later recall	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
not discussed	0	0	0	0	0	12	0	0	8	0	7	0	0	11	1	8	0	0

year 1	applied at work
recalled	all
memory	apply
with	the
no	learning
prompt	

Table 19 Frequency of Word Use by Participants

This includes words and similar words denoted by a +

words right names below	excite	enjoy	fun	good +	like	engage	engage+	passion	passion+	emotion words
03 Lily	6	3	8	15	39	1	11	5	16	15
04 Harry	9	5	2	9	25	0	15	1	2	18
04 Meg	11	9	2	23	18	0	24	0	0	21
06 Lucie	4	17	17	18	51	0	16	1	10	28
08 Rob	0	9	9	18	15	0	13	0	1	9
09 Andy	7	12	4	18	44	1	28	1	5	16
09 Francie	2	2	5	9	42	1	18	8	19	11
11 Barry	14	11	17	30	77	1	12	0	4	33
12 Jason	7	7	1	16	72	1	6	0	1	11
13 Heather	0	3	8	23	100	1	15	2	4	13
14 Mary	9	1	15	23	84	0	14	1	3	20
15 Poppy	2	3	3	20	29	0	5	0	3	14
15 Robbie	4	16	8	28	92	0	7	0	1	20
total	75	98	99	250	688	6	184	19	69	229

Note that "good" and "like" were used in a general context also so their totals are inflated and the manual concept record is more accurate

Table 20 Examples for Participant's Accounts of Enjoyment, Excitement and Passion Related Concepts

participant	Field trip enjoy	Field Trip excite	Cave enjoy	Cave excite
03 Lily	Local area	exploring	Laughed about cave wow	mystery aspect
04 Harry	Fun journey	Place new but local	Method teaching ahha	anticipate
05 Meg	blast	Activities represent theories	Stories excited	Awe wonder
06 Lucie	Orienteering groups	*Day trip only weather*	Vivid blown away	Mystery wonder
08 Rob	History fun	creative	Music trepidation	Interesting surprise
09 Andy	Cruisy relaxed	philosophical	deep	Crazy Been back
09 Francie	Self-directed	Sleep under stars	Apprehensive atmosphere	Been back
11 Barry **Earthquake changes**	Fun	Mystery edgy	*No cave Foggy mem*	*Night walk fun In end*
12 Jason	history	Nervous excited	*No cave Wet night*	First buzz
13Heather	Fizz Really good	laughs	*No Cave windy*	*Lyttelton lights*
14 Mary	Really enjoyed	amazing	Cool special	Poem heavy heart
15 Poppy	Group Great time	anticipation	Really enjoyed	Excited Sense of place
15 Robbie	Everyone enjoyed	Excited Boat jump	Really enjoyed	Excited Sense of place