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The Nature and Scope of Outdoor Education in the city-state of Singapore

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Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

8 June 2018

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Dedication

This work is dedicated to my parents for inspiring me to never give up the pursuit of knowledge to benefit society and go as far as I could in my education:

My Father, Abdul Mutaliffee Bin Omar Lebbay

and

My Mother, Kathija d/o T K Mohd Hussein

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Abstract

This study focuses on the analysis of collective meaning associated with secondary school-teachers' and outdoor practitioners' beliefs about the value of outdoor education in the city-state of Singapore.

A phenomenographical approach was employed to map the qualitatively different ways in which people understand, perceive, or experience various aspects of outdoor education. By conducting in-depth interviews with school-teachers and outdoor practitioners (n=11), a range of beliefs about the value of outdoor education were revealed.

Through a phenomenographic analysis framework, three conceptions were identified that detail the participants' collective meanings of the value of outdoor education; namely (a) belief in the value of outdoor environments in providing affordances for authentic, realistic learning, (b) belief in its value in fostering social emotional growth, physical and mental robustness, and (c) belief in the value of outdoor education as preparation for students' futures. A secondary research question considered the factors that influence the beliefs of the two sets of actors, teachers and outdoor practitioners, who are the focus of this study. The analysis and discussion focus on the context and meaning of the values ascribed to outdoor education as well as the factors that influenced the beliefs.

The findings indicate that school-teachers and outdoor practitioners have strong beliefs about the value of outdoor education. This strong intrinsic belief is constructed through 'sense-making' of their own experiences in the outdoors. This suggests that there is value in investing in the continuing professional development of school-teachers and outdoor practitioners in their outdoor education practice, so that this increased capacity in their complementary roles can bring about the added value of outdoor education to students. Several recommendations for policy, practice as well as further research in the field are offered.

Chapter 1

Introduction

> We don't need independent research to prove the value of outdoor education; we believe in it. McDonald (1997, pg 377)

1.1 Introduction and motivation for the study

I chose the above quote by McDonald (1997) to foreground this study because I was intrigued that he would make such an assertion and I felt that this study was doing the opposite - drawing on a phenomenographical approach to investigate the value of outdoor education through collecting and analysing teachers' and outdoor practitioners' beliefs.

Since its independence in 1965, Singapore as a nation has inspired its citizens to achieve many noteworthy accolades in a variety of areas and fields. As the writer for this thesis, and someone who was born and brought up in this country, in the context of the historical, social, cultural and geographical setting of Singapore, I am proud of our achievements over the last 50 years. Some of which include the summiting of Mt Everest, both by a male team and a female team on separate occasions, expedition to the South Pole, an individual summiting the seven summits, and most recently achieving gold medals in record timing in the swimming event at both the recent 2016 Olympic and Paralympic finals, amongst others. 2015 marked 50 years of nationhood for Singapore becoming a First World country from a Third World country in that duration. One recurring theme that confronts us as we reflect on these milestones, is what is our identity as Singaporeans and who are we as one people celebrating these achievements. Drawing on a similar curiosity about identity, outdoor education has been associated with the Singapore society for nearly 50 years since its independence in 1965 (Ho, 2013) and several questions remain unanswered on Singaporeans involvement and engagement in outdoor education, that could help to shed some light on the Singapore outdoor education identity. For example, what does outdoor education mean in this city-state? what activities, programmes, approaches are considered as part of outdoor education? what are the outcomes of

such experiences for participants? and, how are these experiences implemented? Against this backdrop and range of interest, Singapore has seen a gradual shift in the overall support and attention given to outdoor education as part of the continuous review of young people's education, and what it means to have access to quality education. I will explore these points further in the following sections.

1.2 Outdoor education in Singapore through the ages

The role of outdoor education has shifted over time within the broader context of the changes in the Singapore society. Ho (2013) recalls that this began with the "need to build its defense capability" (pg 6), responding to Singapore leaders' call for a 'rugged society' (The Straits Times, 1990, pg 1), developing resilience and tenacity (Ministry of Education, 2010) to its current form as outlined in the new national physical education (PE) curriculum in Singapore, which characterizes participants in the outdoors as 'learners' and 'students', and aligns outdoor education with various dimensions of PE and education more generally (Ministry of Education, 2013). More recently, the Ministry of Education (MOE) revealed a National Masterplan for Outdoor Education and as part of this masterplan, all secondary three students, aged 15 years will attend an outdoor education experience at Outward Bound Singapore from 2020 (MOE, 2017).

Up to 1999, outdoor education in Singapore was characterised predominantly by a focus on camping and outdoor pursuits (Ho, 2013). The Ministry of Education funded and operated two outdoor adventure centres to meet the rising participation levels of school students in outdoor adventure related programmes (Phua, 1996). Ho (2013) also noted that together with the increasing participation levels at the MOE adventure centres, Singapore schools also conducted overseas adventure experiences for their students, to be exposed to other cultures and acquire skills that they could not experience in the classroom in an effort to toughen them up.

Since 2004, the MOE has launched two more new and purpose-built adventure centres to cater for the demand for such programmes to 'toughen up' the teens. The

management of the MOE adventure centres was left to private outdoor and adventure camp companies whose primary business is to conduct outdoor and adventure activities for their clients. These private outdoor and adventure companies employ, train and pay their outdoor instructors to conduct outdoor adventure camps, rock climbing and challenge course activities, expeditions and programmes for their clients, mainly the Singapore schools. These take place at various locations (including the School location sometimes if the School has a suitable facility such as a climbing wall), where the outdoor activities are held throughout the year, catering for about 70,000 students annually (Lui, 2006). As there are no available studies about the outdoor instructors in Singapore, the description of the outdoor instructors here are my personal account having spent 25 years in the outdoor education field in Singapore. The outdoor instructors in these companies have a mix of background and experience. The companies hire individuals who have a strong interest, aptitude and ability to connect and establish rapport with participants. They have to be physically fit to work outdoors, carry out the outdoor activities in different environments such as water or land, and at campsites for overnight camps. The training provided by the outdoor companies equip these outdoor instructors to independently manage groups safely in those activities. The instructors' academic qualifications vary from diploma to bachelor's degree from a range of disciplines, but the common reason for them to be working in this field is their motivation and interest to take on such a role either due to their past experience having had been camp participants, or served in the school uniformed groups, such as the Boy Scouts, Girl Guides, Boys Brigade (see Chapter 2, section 2.4 on the beginnings of outdoor education in Singapore). For the purpose of this thesis, I will use the term 'outdoor practitioners' to refer to the outdoor instructors who work for the private outdoor companies and hence are not part of the school staff. Further description of the respondent sample is given in Chapter 3 Methodology and Method, section 3.6. Due to the volume of participants, it has resulted in most schools taking up the standard three-day, two-night camping packages for their students. The camping packages offered by these private outdoor and adventure

companies are targeted at mass participation to meet the MOE's policy of conducting at least two camps for each secondary school student. The output of this is somewhat like the "adventure in a bun" phenomena observed by Loynes (1998), who built from Ritzer's (1993) 'The McDonaldization of Society' and commented that such a paradigm poorly represents and distorts outdoor education provision as akin to a production line, predictable in its product offering, delivering standard activities and instructions to cater to the masses. The adventure centres were part of a larger effort to respond to the view that Singapore youth were lacking in tenacity and strength of character (Ng & Chan, 2004; Soh, 2004). Former Education Minister Tharman Shanmugaratnam described this situation as a bigger challenge for the country than the economic one (The Straits Times, 2004). He stressed that there was a need to have a strong emphasis on developing tenacity and strength of character in students, because these were recognised as important elements for Singapore children to experience as part of a holistic and broad-based education. He felt that sports and rugged activities, such as outdoor camps or expeditions and uniformed groups such as the Boy Scouts, Girl Guides, lend themselves naturally to building these qualities. This perspective departs from the post-independence emphasis on building defence capability through outdoor education. MOE's (2010) directions in outdoor education appear to have shifted towards inclusiveness so that each child can develop the tenacity to thrive in the globalised environment.

1.3 Local politicians' support and discourse on outdoor education

The purpose of building tenacity and resilience in people are outcomes associated with outdoor education in Singapore. Local politicians' discourse on outdoor education is singularly occupied with the idea of building resilience through outdoor education despite the changing context of this idea through different stages of Singapore's history. From the call by political leaders to build a 'rugged society' (The Straits Times, 1990, pg 1), the idea of resilience is expanded to embrace mental and emotional toughness through outdoor education (Shanmugaratnam, 2004) and most

recently by the current Minister for Education, Ng Chee Meng who said, "*students acquire important values and life lessons in the outdoors that they cannot learn in a classroom*" (Strait Times, 2017). Outdoor education practices in Singapore continue to be entrenched in a neo-Hahnian outlook, oblivious to Brookes' (2003a, 2003b) and Cosgriff's (2008) argument that character and personal development through outdoor education is a flawed concept. The centrality of why this concept may be so is critiqued in the literature review of this study in Chapter 2. Singapore government officials' speeches are peppered with the strongly held belief that outdoor education is an effective means of developing healthy and fit youths, as well as developing character, personal and social qualities (see Straits Times, 2016, 2017; Lui, 2006; Shanmugaratnam, 2004). The accompanying examples below demonstrates the political leadership associated with the MOE and their views about outdoor education in the overall educational discourse. The texts that are bold are my emphasis in quotes used below and throughout this study.

> **"Every youth** will have an opportunity to go through an **OBS camp** at least once in their schooling years," said Ms Fu… Ms Fu stressed the need to build up youth to work as a team, with ruggedness in their minds and bodies. She said: "**Our future remains uncertain**. …When the going gets tough, **we will be resilient and hardy enough** to overcome it together, to bounce back."

- Ms Grace Fu, Minister for Culture, Community and Youth, Wednesday (March 30, 2016) afternoon during a visit to the Outward Bound Singapore campus on Pulau Ubin, Singapore

> **Outdoor Education** is a key component of PAL … **Outdoor experiences** immerse the learner in **authentic situations within personal and social contexts, with real consequences to themselves, others and the environment**. For example, a student who does not pack/prepare appropriately for a group hiking trip will have to deal with consequences such as being unprepared for inclement weather … Such authentic situations provide rich platforms for social–emotional learning.

- Speech by Mr S Iswaran, Senior Minister of State, Ministry of Trade and Industry and Ministry of Education at the 4th Outdoor Education Conference 2010 on Tuesday, 26 Oct 2010, at School of The Arts

The 2014 PE syllabus emphasises an all-round sensory EXPERIENCE. **Outdoor education** is one component which enables students to explore the environment confidently. Students will learn navigational skills and route-planning. They will also learn how to manage the safety of themselves and others by identifying, assessing and managing risks. **Such explorations provide opportunities for students to step out of their comfort zone** while at the same time allow them to experience the outdoors.

- Speech by Mr Heng Swee Keat, Minister for Education, at the Opening Ceremony of the Physical and Sports Education (PSE) Conference at Republic Polytechnic, on 31 July 2013

  At the secondary school level, students are taught … Science, Social Studies and Geography curricula. One effective approach that teachers use is **field trips**. A few schools have even designed an **environmental education** curriculum. …The weekly lessons include **learning journeys to places such as Pulau Semakau to help pupils deepen their understanding of conservation in our local context**.

  Schools also play a role in uplifting the community. Whether it is through … **outdoor education**, our children contribute to the community. Through such opportunities, values such as perseverance, self-discipline, respect and team work will be imbued in our children for life.

- MOE FY 2012 Committee of Supply Debate: Speech by Mr Hawazi Daipi, Senior Parliamentary Secretary, on Working Together: Values through Partnerships in Education

Considering how long outdoor education has been part of the Singapore education scene, surprisingly little is known about how outdoor education is manifested in schools beyond the standardized three days, two nights' camp at MOE adventure centres. Even less is known about teachers' and outdoor practitioners' beliefs about the value of outdoor education for students. Hence, the present study is timely and contributes to exploring the relatively 'unknown' nature and scope of outdoor education in the city-state of Singapore, despite the close association between educational and youth development history and outdoor education in Singapore. In addition to this backdrop, I also want to draw attention to several authors who have made me think more deeply about outdoor education in the multi-cultural city-state of Singapore.

The first is Nicol (2002) who suggested that outdoor education "defies definition in terms of being a fixed entity of common consent, homogeneous over time and space" (pg 29). The issues that Nicol (2002) describes and addresses in his paper are pertinent and range from historical influence, discussions of philosophical underpinnings and aims, public perception of safety and risk, influence of market forces on the provision of outdoor education and the pressures to maintain cost-effectiveness in relation to the increasingly diverse range and scope of activities described as outdoor education. Further, he discusses terminology and the role of outdoor education as a curricular subject, and states that it is difficult to identify from outdoor education literature a philosophical framework on which practice is based. He concludes by offering one such philosophical framework which is and uses it to consider the relationship between outdoor education, environmental education and the related concept of sustainability education. One might critically ask how these issues are similar to the situation in Singapore. Like the UK, where the above author originates from, Singapore does have an outdoor education history. Though it might not be as illustrious as the UK, there is a situated Singaporean narrative that explains the practices and approach to outdoor education. Unfortunately, this remains unrecorded and unknown, and it is the purpose of my research to contribute to this knowledge gap.

The next author to have a bearing on my thinking is Payne (2002), who suggested that "Undoubtedly, outdoor education in Australia is a 'set' of social and cultural constructions, whose activity base borrows from diverse histories…" (pg 5). Finally, two authors who have equally left an impression on me are Martin and Ho (2009), who challenge us further with the following

> Outdoor education is not a universal value. Rather, outdoor education's contributions need to be grounded in time, place and culture. (pg 79)

The above comments by the four authors and the background on outdoor education in Singapore, particularly with a strong political leaders' support have convinced me to embark on a study to investigate a little-known aspect of the nature and scope of

outdoor education, that of teachers' and outdoor practitioners' beliefs about the value of outdoor education in Singapore. These aspects combine to provide the motivation for the proposed study in a Singapore cultural context, and by contributing to this, I hope to add to the ongoing discoveries, highlight areas for future research and in doing so mature and progress outdoor education in Singapore.

1.4 Personal relationship with outdoor education

Having personally been involved in outdoor education for over 25 years in boy scouts, as an outdoor instructor and as a programme manager with Outward Bound Singapore and now as management staff overseeing the delivery of an academic diploma programme in outdoor and adventure learning at a Polytechnic, my experiences somewhat resonate with Payne's (2002) conception that outdoor education is socially and culturally constructed. In the last 25 years of my engagement with the outdoors, I have enjoyed the physical presence of being outdoors and the beautiful wonders of nature as it allowed me to discover a deep sense of respect for how the outdoor environment had a calming effect on me. I also cultivated great friendships on such outdoor trips and learnt a great deal about managing myself as well as learning about others. Having personally witnessed it for myself, this left me with an impression about how experiences in the outdoors can have positive effects on people. As I moved on to work for Outward Bound Singapore in 1990, my work took on a special meaning because I felt responsible that participants took home meaningful learning from their experiences. I was influenced by the predominant North American outdoor education literature and resources such as 'Effective Leadership in Adventure Programming' by Priest and Gass (1997) and 'Silver Bullets' (Rohnke, 1984) and 'Quiksilver' (Rohnke,1995) both texts formed a significant impression for me as far as outdoor education was concerned. I had even co-ordinated for these authors to come to Outward Bound Singapore to conduct staff training and development for instructors. Hence, the texts by Priest and Gass (1997) and Rohnkhe (1984) were essential resources which strongly influenced our practice

at Outward Bound Singapore between the years 1991 to 2005, until the time I left for my next journey in outdoor education at Republic Polytechnic. Republic Polytechnic is the last of five government funded Polytechnics which provide tertiary level academic diploma programmes for post-secondary students. These diploma programmes are developed to meet industry sector needs, so that graduates develop the employment competencies ready for work in the sector. All diploma programmes consult with the industry sector to understand industry expectations of graduates seeking employment. Consequently, I became aware that it was even more critical to develop a curriculum to reflect the nature of outdoor education practice that would be acceptable and applicable in a wider Singapore setting to move the field forwards. I realised that the over-reliance on the North American influenced ideas of Priest, Gass and Rohnke was inadequate. It was inadequate because the diploma programme had to facilitate the graduates to embrace an understanding of a wider set of practices and philosophy if they were to be employed by the outdoor companies in Singapore, whose outdoor education beliefs, philosophy and practices may not be just limited to the North American influences. Additionally, outdoor education has a reasonable and ongoing scholarly debate about practice and philosophy in various parts of the globe, particularly in North America, United Kingdom, Scandinavia, Australia and New Zealand. There is also an account of an emerging narrative about outdoor education philosophy in Japanese society (Kameoka, 2009). As the journey progressed on to develop and deliver the outdoor education preparatory curriculum for outdoor leaders in Singapore, increasingly, I was left thinking about what would be the concept of outdoor education practice in a multi-cultural Asian city-state like Singapore. Given the above background, I also drew great inspiration from Martin and Ho's (2009) exhortation to think critically about outdoor education through this extract:

> Outdoor education is not a universal value. Rather, outdoor education's contributions need to be grounded in time, place and culture. (pg 79)

So, although outdoor education's presence is adopted and present in many societies worldwide, its practice must be culturally and contextually specific and congruent to be meaningful and relevant. Consequently, the beliefs and cultural values that promote its practices in North America, United Kingdom or Australia may not be applicable or may not meet with similar acceptance in Singapore or other parts of Asia, and vice versa, due in part to cultural and environmental differences. This reinforces Brookes' (2004) view, that no aspects of outdoor education should be considered universal without first considering the geographical, historical, social and cultural context. Heeding this reminder, this study is more significant because it seeks to locate outdoor education as how it is conceived, understood and appreciated locally in the city-state of Singapore. The Singapore context will be considered in more detail in the next chapter on literature review.

1.5 Organisation of the thesis

The focus of this study is twofold. Firstly, the goal was to understand school teachers' and outdoor practitioners' beliefs about the value of outdoor education. The second focus of this research was to find out the sources that influenced these beliefs.

In chapter two, a review of the literature regarding outdoor education and teachers' and outdoor practitioners' beliefs is provided, allowing the reader a glimpse of outdoor education, the current applications of outdoor education and the contemporary issues related to outdoor education, at global and local levels.

To my knowledge, phenomenography has not been widely used before in outdoor education research generally and most notably in Singapore outdoor education research. Herein lies an opportunity for future researchers interested to contribute to addressing research questions that may be suitably done so through a phenomenographical approach, which has proved its worth as a useful tool assisting in the development of more powerful educational interventions (Marton & Pang,

2006; Marton & Tsui, 2004; Lo, 2012). For this reason, care has been taken to ensure sufficient details regarding phenomenography is provided with the belief that others will be able to consider the use of phenomenography as a powerful qualitative research tool to explore suitable research question(s). The methodological design developed to explore these questions, which is underpinned by a theoretical framework, will be explored in chapter three. It encourages school educators and outdoor practitioners to provide more concrete and specific details in relation to the above research questions and use their own vocabulary and associations with relevant concepts to describe their experiences and encounters of outdoor education for their learners.

Chapter four presents the results of the study, and a discussion of the findings in relation to literature. Chapter five presents a summary of the findings, conclusion and the limitations of the study. Finally, chapter six ends with recommendations of this research and the implications for outdoor education in Singapore for practice, policy and research.

Chapter 2

A Review of Outdoor Education Literature

> I have never heard of anyone involved in the education system in the UK being asked the question "why do you want to teach indoors?", whereas every teacher I know who has suggested taking their students outdoors has been asked why they wanted to do so. I make this observation to suggest that we should apply critical thinking to the assumptions of teaching and the status quo. If there is a widespread assumption amongst teachers, teacher-trainers, Local Authorities, politicians and society that all teaching (with a very few exceptions such as PE) always takes place indoors, then it will seem odd if anyone questions this. It will simply not occur to anyone to ask the question "why indoors?" (Higgins, 2009, pg 4)

2.1 Introduction

The literature in outdoor education is rich with many different approaches to research, which make claims regarding the efficacy of outdoor programmes (see McKenzie, 2000). Definitions and interpretations of outdoor education have emerged and changed over time. Notwithstanding that, some of the values and meanings have attached through practice and common agreement to contemporary outdoor education, at least in popular understandings and perhaps in professional practice. Historical antecedents have some influence and relevance when trying to understand contemporary practice and how it might impact interpretation. When considering the approach of this chapter on outdoor education literature, I was confronted with the dilemma of the almost complete absence of outdoor education literature specific to Singapore until recently (which I will address after the middle of this chapter), so in terms of published literature, Singapore is in its infancy. Consequently, much of what we (those in Singapore who are involved in outdoor education) know about outdoor education, its philosophy, practice and ideas may have been 'imported' – from the diverse range, methods and approaches from the USA, UK, Australia, New Zealand, Germany, Sweden, and I will make a comment about the cultural relevance of this.

Understanding this complexity is important as this is the context in which Singaporean teachers and outdoor practitioners could have learnt about the purpose and practice of outdoor education. It also provides a background to the ways in which outdoor education in Singapore could be perceived, understood and developed.

In this chapter, literature is reviewed to allow readers to get acquainted with the nature and scope of outdoor education by looking at how the field may have had its origins developed over time, the various interpretations and explanation of outdoor education. One of the struggles I had in considering the breadth of literature is that I realised the words 'outdoor learning', 'outdoor studies' and 'outdoor and adventure education' also came up whilst searching for suitable sources as part of the literature review. So, the literature found here is not limited to outdoor education but encompasses those from outdoor learning and outdoor studies. The literature used in this review has been sourced through reviews on outdoor education/ outdoor learning/ outdoor studies; peer reviewed journals associated with outdoor education, such as the Journal of Experiential Education, Australian Journal of Outdoor Education, Journal of Adventure Education and Outdoor Learning and Journal of Leisure Studies; from broad searches of literature available from academic databases such as EbscoHost, ProQuest, Google Scholar, ScienceDirect; from books acknowledged as text in the field such as Beames and Brown (2016) and Humberstone, Prince and Henderson (2016); and from theses, dissertations, conference proceedings and 'grey literature', which have historically contained a large proportion of the available theoretical discussions and explications of outdoor education. As my study seeks to situate outdoor education in Singapore, it starts off with a brief introduction to this city-state.

2.2 Singapore – An introduction

Gassner and Kahlid (2015) in their case study of Singapore in the publication "Adventure Programming and Travel for the 21st Century" describe Singapore as "difficult to describe succinctly and conjures up different meanings to different

people" (pg 19). They cite Dutt and Parai (1996) who called it "Southeast Asia's most progressive country" (pg 319) and quote Kian and Kee (2002) who assert that Singapore has been described by "Western media as the archetypal interventionist state, with rules that affect almost every sphere of public and private life" (Kian and Kee, 2002, pg 149). Located geographically at the heart of Southeast Asia, Singapore has been described by many as a multiracial, multilingual, multicultural, and multi-religious society (Siddique, 1990).

Singapore is a highly urbanised island, with a land area of 719.2 square kilometres and has an estimated population of 5,607,300 (Singapore Department of Statistics, 2017). Its limited land area and high population density result in competing demands on the land for housing, economic purposes, and others. Its beginning was not like this. Natural areas began to be cleared in the late 19th and early 20th century, and the pace to clear more natural areas increased particularly after independence from British rule post-1960. When Singapore achieved internal self-government in 1959, the newly formed government was confronted with numerous challenges. These comprised rapid population growth, shortages in housing, high unemployment and poor infrastructure.

To address these challenges without delay and with a resolute mind, at the national level various economic and social programmes were initiated. These demanded a great amount of land-use planning as well as land and building development. The planning and development often required clearance of natural areas, from forests and ridges to swamps and coral-fringed coasts, as well as damming of rivers for reservoirs. From the most recent figures available for land use in Singapore today (Ministry of National Development, 2018), parks and nature occupy only 8% of Singapore's land area, with the rest mostly built-up areas and managed urban habitats [92%] (see Table 2.1). Of the 8% of parks and nature parks, these have evolved over time of decreased primary forest cover. It is further reported that the remaining primary forest in Singapore occupies less than 0.3% of the total land area (Chope for Nature, 2018). Table 2.1 illustrates the distribution and range of land use in Singapore.

Land Use	Planned Land Supply (ha)	
	2010	**2030**
Housing	10,000 (14%)	13,000 (17%)
Industry and Commerce	9,700 (13%)	12,800 (17%)
Parks and Nature Reserves	5,700 (8%)	7,250 (9%)
Community, Institution and Recreation Facilities	5,400 (8%)	5,500 (7%)
Utilities (e.g. Power, water treatment plants)	1,850 (3%)	2,600 (3%)
Reservoirs	3,700 (5%)	3,700 (5%)
Land Transport Infrastructure	8,300 (12%)	9,700 (13%)
Ports and Airports	2,200 (3%)	4,400 (6%)
Defence Requirements	13,300 (19%)	14,800 (19%)
Others	10,000 (14%)	2,800 (4%)
Total	71,000 (100%)	76,600 (100%)

Table 2.1: Singapore Land Use (Source: Ministry of National Development, 2018)

To compensate for the pressures of urbanisation and city-state build up over the years in Singapore, other forms of greenery and nature have been infused into the environment with the goal of satisfying various human needs. Due to this, the

transformation of Singapore's landscape from dense tropical forests to an equally dense built-up environment has resulted in a loss of natural areas while at various time periods, national policies and initiatives have been introduced concurrently to artificially green the city. In the process, the form of nature and outdoors which Singaporeans have become familiar with are landscaped and manicured vegetation deliberately planted to provide the green balance in an increasingly urban environment. For the average Singaporean, there is little contact in Singapore with naturally occurring unmanaged greenery and wildlife, and it is in this context that most young people have been growing up over the last five decades. Martin and Ho (2009) echo this further by stating

> Constructing encounters with nature is a challenge for outdoor educators in Singapore simply because nature in Singapore is limited …The lack of natural tracts of more undisturbed land is a challenge for outdoor educators in Singapore… (pg 88)

I have chosen to include a brief background on Singapore as well as the comment by Martin and Ho (2009) to highlight an observation that being a small island-nation-city-state, there are many competitors staking their claim for the scarce land use. How does such limitations on natural land available for leisure, recreation, camping and as outdoor classroom, have an impact to the value of outdoor education in Singapore? Against such limitations of natural land in Singapore, it would be pertinent to relate any aspect of school teachers' and outdoor practitioners' beliefs about the value of outdoor education with relevant accounts of this background to the history and characteristic of Singapore.

2.3 The origins and development of outdoor education

The idea of nature having a healing impact on the wellbeing of human beings was observed 60,000 years ago according to Hong-Fang and colleagues (2009). Beames, Higgins and Nicol (2012) provide a contemporary take by reminding us that the USA, UK, Germany and the Scandinavian countries "have rich histories in outdoor

learning" (pg 3). Brookes (2016) also tells us that two major characters in modern history who have been linked to outdoor education is Lord Baden-Powell for the Scouting movement in 1908 and Kurt Hanh for the Outward Bound movement in 1941. Scouting emerged earlier than Outward Bound in the context of British colonial struggles in Africa. Wilkinson (1980) asserts that many religious systems in their teachings advocate that human beings have shared a special relationship with nature since creation, and records numerous stories of wilderness trials and rites of passage. Ancient Greek philosophers hold a strong belief that virtues such as wisdom, courage, justice and temperance are key qualities that young people should develop, and such virtues are best nurtured through direct and purposeful experience (Hattie, Marsh, Neill, & Richards, 1997; Priest & Gass, 2005).

Acknowledging the value of outdoor experience for the growth of virtues in education, Outward Bound was founded by Kurt Hahn and Lawrence Holt in 1941 in Wales. Hahn was influenced by Dr George Kerschensteiner who promoted the Country Boarding Schools movement and a holistic approach to education in Germany, and similarly placed physical, moral and social education on a par with cognitive knowledge development. Kurt Hahn initially executed these principles at Salem School, located in a castle in Baden, South Germany in 1920 with the clear goal of rescuing German youth from becoming victim to the moral deterioration following World War I. In March 1933, after fleeing Nazi Germany to Great Britain, Kurt Hahn introduced the Salem School system into Great Britain. In August 1941, Kurt Hahn persuaded James Hogan to be the Warden of a training centre that would provide a convincing demonstration of a programme that could help novice seamen develop resilience and determination to confront the obstacles they were encountering in the Battle of the Atlantic. Lawrence Holt accepted the idea and named the programme Outward Bound (Veevers & Allison, 2011). The Outward Bound institution grew at a fast rate thereafter. In 1958, Lumut in Malaysia became the first location outside Great Britain to have an Outward Bound institution. In 1962, the first Outward Bound school was brought to the United States by Joshua Miner, opening in Marble, Colorado (Priest & Gass, 2005). Recognising the need for Outward Bound instructors

training, Paul Petzoldt and Ernest Tapley, Outward Bound instructors themselves, founded the National Outdoor Leadership School (NOLS) in Lander, Wyoming in 1965. Soon after in 1971, Jerry Pieh started Project Adventure, received a three-year grant to bring adventure learning into the mainstream high-school curriculum (Priest & Gass, 2005). The Outward Bound philosophy received wider interest from the international community and continued to spread to over 35 countries all over the world and resulted in dramatic growth in youth programmes based in outdoor settings in the 1970s and 1980s (Davis-Berman & Berman, 2008).

Apart from North America, where outdoor adventure education was embraced rapidly, as described, the UK also experienced a similar evangelism. Experiential educators in both the USA and UK have contributed significantly to shaping outdoor education knowledge and practices globally. In the UK, during the 1960s to 1970s, the use of the term 'outdoor education', as opposed to 'outdoor pursuits' or 'outdoor activities', became more prominent. This growth in prominence, as suggested by Cheesmond and Yates (1979) is directly credited to the formation, in 1970, of the National Association for Outdoor Education (NAOE). By including the words "outdoor education" within its own Association title, the NAOE was sanctioning the use of outdoor education over the use of outdoor pursuits. According to Cheesmond (1981), the choice of the term signified the intention to draw together differing outdoor practices within "a broadly based definition which, it was hoped, would appeal to a wide variety of teachers" (pg 14). It has been suggested that the reason outdoor education became a preferred term instead of outdoor pursuits is ascribed to the effort to connect it with the school curriculum. To do this, the NAOE had to gain the trust and honour from the mainstream educational institutions. Cheesmond (1981) suggested that:

> Outdoor education as opposed to pursuits can be seen as an example of a trend in education towards subject integration. It represents a subject amalgamation, an applied area of knowledge which draws from several established parts of the school curriculum. (pg 28)

Cheesmond's (1981) description was a cautious attempt to establish legitimacy by using terminology that would appear to be acceptable to fit in with the mainstream curriculum. On curricular subjects, the most naturally fitting subject was physical education (Cheesmond, 1981; Yates, 1981; Keighley, 1998). Another subject area was environmental education, which offered an additional means by which outdoor education could claim to be involved in curricular subjects (Parker & Meldrum, 1973). Residential visits gave pupils opportunities to become involved in curricular field studies. Such opportunities strengthened the potential for connections with school based education. With such strategic and deliberate attempt to position outdoor education with mainstream curriculum to gain acceptance, it was possible to say with some assurance that outdoor education had become something more than outdoor activities, together with policy documents supporting the areas of personal and social development or environmental education. Furthermore, such an attempt through outdoor education was progressively seen as an innovative pedagogical effort. For instance, the General Teaching Council for Scotland (1990) reported that in the 1970s, outdoor education represented a "shift from passive learning to active inquiry methods" (pg 3).

2.3.1 The nature and scope of outdoor education globally

Globally, outdoor education has many different foci ranging from adventure-based therapy to environmental and ecological awareness. Prince (2016) in the opening chapter of introduction in the Routledge International Handbook of Outdoor Studies (2016), recalled the choice of conceptual frameworks and areas of focus in outdoor studies from Australia, Canada, USA, UK, Sweden and Germany. Prince (2016) reminds us how outdoor education may have been presented because of the time and space that it occupied at particular periods as we navigate the timeline of outdoor education:

> The authors describe different philosophical perspectives with a range of outcomes through experiential, adventure, recreational and educational approaches, historical roots and meanings, environmental concerns, health

> and wellbeing, and research. We recognise that these constructs might be seen as time specific and that, were this book being written in a different decade, the prioritization of contributions might be different, nevertheless they all present conceptualisations that have rigour and application, and influence practice. (pg 7)

In this section, I will be tracing outdoor education literature exemplified through the researchers of those countries, to allow an appreciation of the contemporary and emergent foci in outdoor education across those countries. A caution needs to be made here that due to the different foci of each of the literature that is being reviewed, it is not fair to conclude that the range of literature considered on outdoor education/ outdoor learning is relevant to Singapore. Rather, it is an invitation to ask how much of this is relevant to Singapore and what is missing in the literature. At various points in this section, I will highlight and reflect upon the context and the implications for Singapore in terms of this study. By tracing outdoor education globally, I aim to develop an understanding of its possible influence of outdoor education in the Singapore society.

2.3.2 Militaristic, nationalistic, imperialistic roots and universal applicability of outdoor education

The founding of the Outward Bound movement by Kurt Hahn, and the philosophy that underpins it seems to have been crucial in evolving the 'character-building' movements in outdoor education from their militaristic, nationalistic and imperialistic roots (Brookes, 2003b). The influence of Hahn and Outward Bound remains prevalent in the outdoor education field in many places. For example, Higgins (2002) reminds us that outdoor education in Scotland, being one of the first countries in the world to formalise outdoor education, has its origins in Hahn's philosophy. The original gaps which Kurt Hahn identified as the emphases on which to focus on such as physical fitness, endurance, craftsmanship and community service have been translated into contemporary ideas such as the pursuit of "outdoor activities and sports" and "personal and social education" (Higgins, 2002, pg 155).

These approaches are widely adopted by a majority of the outdoor service providers in the United Kingdom. Cook (2001) observes that fitness for war and service during the British colonisation, particularly in nations allied with Britain during World War I, underpinned the uses of the outdoors for educational purposes for boys. Brookes (2003b) contends that the aim of character building, though regularly featured in outdoor education literature and programmes, is a flawed and contested concept. The phrase “neo-Hahnian outdoor education” was invented by Brookes (2003a) to describe the assumption that adventure experiences develop and build a person’s character. He takes issue that, without any strong evidence, neo-Hahnian outdoor education should not be considered ‘foundational’ to outdoor education research, theory and practice. He observed that such a persistence with neo-Hahnian approach to outdoor education was most prevalent in the USA (Brookes, 2003b). The advent of promoting such a position could be due to the perspectives of Priest and Gass (1997), two well-known researchers in the USA who published and edited textbooks on outdoor and adventure education.

Priest and Gass (1997) presented a concept to describe four main purposes of adventure programmes. According to Priest and Gass (1997), the four main purposes of adventure programmes are recreational programmes which aim to change the way people feel; educational programmes which aim to change the way people feel and think; developmental programmes which aims to change the way people feel, think and behave; and therapeutic programmes which aims to change the way people feel, think, behave and act.

Outdoor education programme practice has been openly criticized for becoming commercialised (“adventure in a bun”, likening it to the Macdonald restaurant chain, which was evolved from Ritzer’s (1993) Macdonalisation of Society), for seeming algorithmic and production-line-like, for ignoring ecological aspects, for supporting dualistic and mentalist tendencies of Cartesian thought (Beringer & Martin, 2003; Fenwick, 2003; Loynes, 1998; Ringer, 1999). Such programmable, formulaic approaches observed above are influenced by the positivist scientific paradigm. This positivist approach has set out to discover the theory behind all observable

phenomena and seeks to express these theories as algorithms. The benefit to society is that these general algorithms can then be 'plugged in' to a problem and produce a solution. This is how it works with computer language. Enter the data, select the algorithm for the job that needs to be undertaken, the output is a consistent solution. This pattern then feeds researchers to build their inquiry to further support the approach in practice. Applying this method to the study of human behaviour has been under severe criticism by other methodologies that do not treat people as predictable phenomena. Nevertheless, the positivist paradigm has had a major influence as a metaphor for a course design understood as an algorithm with the capacity to deliver a consistent solution, therefore Ringer (1999) used the term 'algorithmic paradigm' to describe this approach.

Loynes (2002), was highly critical of experiential educators for advocating universal applicability of outdoor education programmes and raised his concerns for 'off the shelf', commodified approach to providing adventure experiences and talking about them which in his view was counter to the organic and emergent nature of experiential learning as it takes account of environments, individuals, groups, cultures and activities and the experiences that arise from their interaction. He proposed 12 characteristics of an emerging "generative" paradigm for outdoor experiential learning and one of the characteristics, is to restore "place as a central and critical dimension of equal value for learning and meaning as the self and the group" (Loynes, 2002, pg 123). I chose to highlight 'place' from Loynes because 'place' was an emergent paradigm that brought interest to outdoor practitioners and researchers. The idea of 'place' in outdoor adventure education gathered momentum when Baker (2005) and Knapp (2005), outlined the emerging field of place-based education and offered suggestions on ways to incorporate place-based education into adventure programmes.

2.3.3 Personal development and environmental focus in outdoor education

Whilst the majority of the outdoor service providers adopt the contemporary ideas as listed above, Higgins (2002) reminds us that the outdoor educational practices in the United Kingdom, which include addressing environmental concerns have been impacted to some extent by the global environmental imperatives of the World Summits (e.g. Rio in 1992 and Kyoto in 1997). Higgins (2002) also observed that in Scotland, the educational uses of the outdoors are similar to other parts of the United Kingdom, Europe and countries much further afield. For instance, before the 1940s, outdoor education in New Zealand was largely recreational. However, it has since become more explicitly educational in its purpose. Zink and Boyes (2006) noted that since the 1970s, outdoor education in New Zealand has also become more focused on developing the skills and values associated with employability. Outdoor education only gained an official place in the New Zealand curriculum in 1999. Thereafter, it became one of seven key learning areas in the Health and Physical Education curriculum aiming specifically to provide students with opportunities to develop personal and social skills, to become active, safe and skilled in the outdoors, and to protect and care for the environment (Zink & Boyes, 2006). Following Zink and Boyes' (2006) view that the aims of outdoor education have shifted over time within the broader context of changes in the New Zealand education system, others, such as Lynch (2006) have added that "a focus on outdoor pursuits and adventure education with the aims of personal development appears to have been an enduring phenomenon in the history of outdoor education in New Zealand" (Lynch, 2006 cited in Cosgriff, 2008, pg 20). Cosgriff (2008) argues that this emphasis on neo-Hahnian personal development outcomes has served to keep outdoor pursuits and adventure activities as a dominant focus in many school programmes in New Zealand, despite "the need to foster environmental appreciation, understanding and action" (pg 14). She argued for a more "environmentally attuned" outdoor education as an appropriate way forward in New Zealand schools, central to which "are 'skill-full' adventures that foster students' connectedness with local environments, help

develop sustainable human–nature relationships, and promote orientation towards action" (Cosgriff, 2008, pg 23).

From the research by Lugg and Martin (2001), most outdoor education teachers in schools in Victoria, Australia, perceived outdoor education to be chiefly focused on personal development. They observed that outdoor education teachers who would prefer the subject to develop more distinctive educational purposes (such as pursuing environmental education through outdoor activities) face a number of challenges when trying to initiate and roll out such programmes in schools: the majority of principals (as well as teachers) saw the value of outdoor education as primarily being related to its personal development objectives; there was greater emphasis on outdoor education as a process rather than content; and people teaching the subject had qualifications in disciplines other than outdoor education. Other researchers (e.g. Payne & Wattchow, 2008; Stewart, 2003) have suggested alternatives to traditional outdoor adventure activities. They saw outdoor education as having a role to play in helping participants to develop strong connections with local places via "slow" outdoor education that allows participants time to pay attention to the unique qualities of particular places. Bucknell and Mannion (2006) add to this argument that for outdoor education to be able to claim a unique place in contemporary curricula, it might do so if it is within the wider environmental goals. They suggest a new focus in the outdoor education curricula to prepare students to deal with a range of complex environmental issues. Neill (2001) also noted the following statement of ethical purpose to emphasise a broad, underlying aim of outdoor education in Australia by delegates of a national outdoor education conference in Australia:

> Through interaction with the natural world, outdoor education aims to develop an understanding of our relationships with the environment, others and ourselves. The ultimate goal of outdoor education is to contribute towards a sustainable community (pg 2)

Neill's statement above resonates with Martin's (1999) earlier concept of critical outdoor education. According to Martin (1999), the concept of critical outdoor education is to help students develop a critical perspective on understanding people's relationship in and with the outdoors. Boyes (2000) advocated that outdoor education can have a critical role in educating for environmentally sustainable living by addressing cultural beliefs and practices that are contributing to the current ecological crisis. While 'sustainability' is a key word in today's environmental studies, the kinds of problems associated with sustainability would differ depending on the context, culture and location. Therefore, devoting some attention and focus on sustainability in outdoor education curricula might help students to engage with the complexity of these issues both in their community and globally. To do this, Webster (2004) brings forth the argument that educators need to be cognisant of new knowledge, especially about design and technology, systems and economics and how they are intertwined. A search of the literature on purposes of outdoor education in various countries reveals that besides neo-Hahnian personal development, environmental education dimensions are included as well. These include approaches addressing sustainability and ecological literacy within outdoor education (e.g. Beames, Higgins & Nicol, 2012; Christie & Higgins, 2012; Higgins, 1996; Hill, 2012; Ho, 2013; Lugg, 2007; Martin, 2008; Martin & Ho, 2009; Nicol, 2014; Orr, 1992; Prince, 2017); critical outdoor education (e.g. Beames & Brown, 2016; Brown, 2009; Hill, 2008; Martin, 1999; Payne, 2002; Pike & Beames, 2013) and the possibilities offered by place-based approaches (e.g. Beames & Ross, 2010; Brown, 2008; Payne & Wattchow, 2008; Stewart, 2003, 2004; Wattchow, 2001, Wattchow & Brown, 2011). Rickinson, Teamy, Morris, Choi, Sanders, and Benefield (2004) in their review, which primarily focused on environmental education, referred to a number of "blank spots and blind spots" (Wagner, 1993, pg 16) related to outdoor education research in the United Kingdom, to conclude that outdoor education research would benefit from greater attention given to the "historical and political aspects of outdoor education policy and curricula" (pg 57). Brookes (2003b) earlier made a similar point to

emphasise that when exploring the purposes of outdoor education, it is necessary to look at outdoor education's connection with its past.

2.3.4 What does all this mean for outdoor education in Singapore?

From the above accounts of how outdoor education has evolved all over the world, I wish to highlight that the developments in outdoor education in those countries, its practices and conclusions were influenced and foregrounded by its political, social, historical and cultural episodes.

While the various development milestones of outdoor education witnessed globally may give readers a sense that it is fragmented, unorganized due to the wide range and scope of research outcomes that have been covered in the early parts of this section, it is important to recognise that such developments of outdoor education happened organically in response to the emergence and interpretation of needs of society. The historical overview above seeks to highlight some key traditions and values that may have influenced and shaped the outdoor education practice, provision and development in Singapore and to some extent may have had a role in influencing school teachers' and outdoor practitioners' beliefs about the value of outdoor education. In the following paragraphs I continue with this historical overview with other views to contemporary practice of outdoor education, and subsequently recount the Singapore outdoor education story at section 2.4.

2.3.5 Integration of outdoor education with curricula

Outdoor education in curricular terms is viewed as possibly underpinning compelling learning contexts that contrast with the tradition of formal classroom-based schooling, whilst remaining relevant and pleasurable (Waite, 2009). It is observed, that despite the tendency for generalisation at times, learning in and about the natural environment as well as understanding issues of sustainability through outdoor activities can arise in conjunction with key curricular frameworks (Higgins,

2009). Thorburn and Allison (2010) argue that outdoor learning can also bring about deeper engagement in reflective and problem-solving learning experiences, so that students can grow and progress in more personally meaningful ways:

> a more complete engagement with an experiential philosophy of learning 'through' requires students to identify issues, topics, problems and challenges in which they are interested, … reflecting on their success and progressively engaging in an upward spiral of engaged learning ... we consider outdoor education as being beneficial in helping students to explore their own values, preferences and histories and to make decisions about how they want to live their lives. (pg 99–100)

The above statements align with the view that young people generally have missed out on opportunities and lack interactions with the natural world, which results in severe implications in terms of their physical, personal, social and moral growth and maturity. In view of this identified gap, Beames et al. (2012) critically address how outdoor education programmes are regularly oriented towards personal and social development, environmental education and the attainment of skills valuable for adventure activities. Beames and Atencio (2008) comment in their review that some literature from North America, Australia and the United Kingdom problematically define outdoor education implementation as small groups operating within expeditions and at residential centre or camp locations. Beames and Atencio (2008) are critical of this approach and hence suggest that endemic to this conception of outdoor education is the problematic belief that positive experiences in these away-from-school contexts are expected to translate into improved student development and social interaction within the school environment. A vital, yet heavily debated rationale supporting the position of outdoor education within the main curriculum thus involves the belief that students can transfer knowledge, skills and social learning from adventure education contexts to everyday life conditions (for further discussion, see Brookes, 2003; Brown, 2009).

Beames et al. (2009) also suggest that outdoor learning can be integrated with a local setting to provide a viable space where more constructivist and student-driven

learning can occur. They claim that programmes that integrate with the local setting focusing on available architecture, ecology, geography and history meaningfully ties with holistic learning aims reported in the Scottish national curriculum document, the 'Curriculum for Excellence' (Learning Teaching Scotland, 2006). Beames et al. (2009) acknowledged that the Curriculum for Excellence "challenges the existing emphasis on disciplinary content as the central curriculum driver" (pg 38) and call to support for a more situated understanding of various subject matter to evolve. Despite this likely way forward under a locally based vision, Beames and Ross (2010) believe that further research is required to understand how teachers and students engage with this version of outdoor education, through recourse to overarching national curricular guidelines. Thus, while this perspective signals how outdoor education programmes based in or near schools (within a 700-metre radius in the case of Beames et al.'s [2009] study) can bring about significant value to students, it must also be noted that teachers often face significant barriers when attempting to teach this subject area. Some of the barriers here include lack of training as well as high teaching workloads and class sizes (Beames et al., 2012). Even without the implementation of complex "high-adrenaline" activities, these barriers can still prevent teachers from developing and implementing an appropriate outdoor education curriculum. In addition, teachers would find the value of practical guidance that is underpinned by deeper and reflective understandings of how outdoor education can incorporate local, national and geographic contexts (Beames et al., 2012).

Beames et al. (2012) also go on to explain that the local outdoor environment is a very useful resource to teach "generic" curricula, which can hopefully inspire teachers to use them creatively. The authors argue that when an outdoor playground is well designed, it can fulfill physical and sensory development (see Blythe, 2004) for young people when it is used. They highlight that beyond the built-up playground, local parks and natural play area present a more "complex" environment where the undulating ground, logs, boulders, trees and rocks which are found there, provide added stimulus for developing activities and participants' interactions that can be

transferred to other environments. In taking Blythe's (2004) idea further, Beames et al. (2012) contend that the outdoor environment plays a critical role in the sensory development of learners as "it can engage all the senses and multiple intelligences (Gardner, 1993) in an integrated way fashion and in ways not possible in a classroom." (pg 21).

Beames and Brown (2016) discuss the appropriateness and relevance of adventurous learning, so that learners are equipped to interact with a world which is changing rapidly towards the future. The authors challenge educators to reconsider an adventurous learning pedagogy in the design considerations of learning for their learners, by keeping in mind the following four key elements: a) authenticity (keeping the activities real); b) agency (ensuring that learners have the power to shape what is learned and how it is learned); c) uncertainty (being willing to move away from rigid and prescribed processes and allow creativity in finding solutions); and d) mastery (helping learners develop applicable knowledge and skills) (pg 20).

2.3.6 Re-conceptualising contemporary lenses to frame outdoor education

Quay and Seaman (2014) draw our attention to the link between outdoor education and John Dewey's pragmatism to "outline an account of experience for outdoor studies," (Quay & Seaman, 2014, pg 40). Both Quay and Seaman (2014) highlight the challenges associated with the catchphrase "learning by doing" (Roberts, 2011), where "encoded in such models is a persistent and unfortunate hierarchy: experience – provided through means like outdoor studies – is the poor cousin to thinking" (pg 41). The authors state that outdoor studies will benefit from revisiting Dewey's call for a "coherent theory of experience" (pg 41). They affirm that Dewey's (1929) major contribution was "to insist that thinking is also experience: reflective experience" (pg 7). In doing so, Dewey (1916) repositions experience as more than just doing to holistically embracing life itself, "we use the term 'life' to denote the whole range of experience" (pg 39).

Hoad (2015) moved away from conventional conceptualisations of outdoor education and looked for an alternative lens because he felt that the conventional cause and effect approaches proved to be too reductionist to provide a useful analysis, given that the outdoor education paradigm is complex. In doing so, he found the alternative framework from James Gibson's (1977) work on the theory of affordances to be of interest which called for an ecological perspective of situations and interactions that may occur. Hoad (2015) explains that the theory of affordances makes reference to what it is about an environment that augments the kind of interaction that subsequently occurs. To Gibson, it is a "mistake to separate the cultural environment from the natural environment, as if they were a world of mental products distinct from the world of material products" (Gibson, 1977, pg 70). Gibson's theory of affordances comprises the physical, social and cultural affordances. Hoad (2015) explains that circumstances that empower individual interactions, arise from the complex interaction between certain properties of the individual, along with certain properties of the environment. Greeno (1994) refer the properties of the individual as "abilities" (Greeno, 1994, pg 338). In some of the interpretations of the theory, these affordances and abilities are said to be relational. The affordance relates to the characteristics of the environment within which the individual can use their ability, and this is a type of reciprocal dependence. According to Hoad (2015), "the physical and social aspects of the natural environment 'afford' amongst other things instances of humour, teachable moments, physical activities, and serendipitous interactions with the flora and fauna that would otherwise not be available in the traditional classroom setting." (pg 151).

Hoad (2015) gives an example to illustrate the above, within the context of outdoor education, that when individuals in the group take advantage of a humorous situation, this may signal to other participants "this context affords a relaxing, non-threatening social environment". Such affordances, according to Hoad (2015), have been taken advantage of in outdoor adventure programme design, through the concepts of perceived and real risk and may have been the cause of students' anxiety when, there is little reason to worry. According to Gibson, the diverse ways in which

the environment is configured afford different behaviours for the individuals who interact in them. When Bang (2008) stated that with “social interaction, others do have affordances because they interact in socialized and culturally developed ways and not only as single decontextualized individuals” (pg 130), she made clear both the significance of the social and the interconnection of the cultural. Social affordances and expectations can evolve to shape that of the cultural. When teacher and peer expectations of behavior and conduct are put into action, these activities and behaviours over time contribute to form the culture of the group. Therefore, this framework also enables developmental potentialities that are afforded to participants on their outdoor education experience in relation to the more social aspects.

Gibson’s (1977) theory of affordances has brought out an alternate way of framing and analyzing the interactions that take place in outdoor education. The strength of the affordance theory is the interactions that take place in the environment, through which its ecological consideration provides a more holistic perspective to be adopted when analyzing interactions that take place. This contribution offers a framework to better understand the emergent interactions that can and do take place during outdoor education progammes and provides a means of capturing and understanding these interactions.

This review and discussion illustrates the potential benefits to students’ learning that might emerge through greater engagement with sustained, and locally, culturally situated, place-based outdoor education. Through an interrogation of existing literature, differing ideas and approaches to outdoor education have been surfaced, together with potential issues associated with implementation. This varying form reflects the many different foci of outdoor education noted at the beginning of this section, ranging from adventure education experiences that are usually accessible in an “off-site” and expert-driven manner, as well as more local-based, place-based or ecological perspective of situations and interactions that may occur with local communities, societies and situations.

2.4 The beginnings and growth of outdoor education in Singapore

The roots of outdoor education in Singapore can be traced to the camping movements established in the early part of the 20th century. The Boy Scouts Movement, founded in Singapore in 1910 by Frank Cooper Sands, a UK trained Scout, who became the first Chief Scout Commissioner is credited to be the first organisation that served the needs of the young people in the city-state of Singapore through outdoor education. The formation of the Boy Scouts Movement even before Singapore gained its independence in 1965, proves to be a pivotal milestone in tracing the early activities of outdoor education in Singapore. Following the formation of the Boy Scouts Movement in 1910, the Girl Guides (1917), Girls Brigade (1927), Boys Brigade (1930), and National Police Cadet Corps (1959), all of which incorporate outdoor education as a part of their manifesto, were established. Later, the other uniformed groups such as the St John Ambulance Brigade, Red Cross Society, National Cadet Corps, National Civil Defence Cadet Corps, were established with some outdoor education emphasis in its approach to the development of its youth members.

2.4.1 Building a rugged nation

Besides the above overview of early influences of how outdoor education began in Singapore, it is also necessary to trace the milestone events of outdoor education programmes as it is implemented and took place in Singapore to the best of available records. According to Ho (2013), outdoor education in Singapore can be traced back to the time when Singapore achieved independence in 1965, as building defence capability became a priority after being separated from Malaysia. This was implemented by having all able-bodied male Singaporeans to enlist at age 18 for National Service for a minimum of two years, and thereafter remain operationally ready as part of the reserves for another 20 years (Neo & Chen, 2007). The formation of the national army became even more urgent with the announcement in 1967 of the impending withdrawal of the British troops from Singapore.

Ho (2013) explains that the deliberate intention to grow outdoor education took shape with the establishment of extra-curricular activities such as the National Cadet Corps and the National Police Cadet Corps in all secondary schools with the objective to improve the physical abilities of students and strengthen positive attitudes towards adventure and strenuous activities. In 2000, the term extra-curricular activity was changed to co-curricular activity (CCA) to signal a shift that such CCAs do have an integral role in the non-academic development of students (Teo, 2000).

Ho (2013) also comments that the repositioning of outdoor education within the co-curricular activities space reflected how outdoor education was considered a core school-based activity that has earned its place to "toughen" students both physically and mentally. To further understand how CCAs were managed and implemented, the Co-Curricular Activities Branch (CCAB) in the Ministry of Education (MOE) used to oversee all school-based adventure programmes in Singapore government schools. The CCAB was comprised of two units to regulate the outdoor programmes in schools - Uniformed Groups Unit and the Outdoor Education Unit.

The Uniformed Group Unit oversees all the school uniformed groups' programmes, including the outdoor education programmes of the Scouts and Guides Movement, Boys and Girls Brigade, National Cadets Corps, National Police Cadets Corps, Civil Defence Cadets Corps, Red Cross and St. John Ambulance Brigade. It also managed a MOE Adventure Centre specially built for use by students from the National Police Cadets Corps. The Outdoor Education Unit was established in 1999 to propose and implement policies, plan and manage the provision of outdoor education resources such as the MOE adventure centres, and provide advice on all outdoor education-related matters to Singapore government schools. The Outdoor Education Unit also manages a specially allocated annual budget to send selected students from schools that have been allocated places to undergo Outward Bound programmes in collaboration with the Outward Bound School in Singapore. This programme is offered at no cost to the selected Singapore schools and their students since the CCAB funds it through the specially allocated annual budget.

The Outward Bound School in Singapore, renamed as Outward Bound Singapore (OBS) was founded in 1967 and managed by the Ministry of Defence from 1969 to 1990. Its main objective then was to prepare boys for national military service, known as National Service (NS), through regimented outdoor training. Till now, NS which commenced in 1967, is a national programme, and considered a "rite of passage" for Singapore males who turn 18 years to enter military training. Then in 1967, it was part of the newly independent Singapore's strategy of building up its own defence force for national defence. Since April 1991, when the running of Outward Bound Singapore was taken over by the People's Association under the umbrella of the Ministry of Community Development and Sports, it has realigned its objectives similar to that of the International Outward Bound Trust. Personal growth and team development for youths in Singapore became the mainstay of OBS programmes (Tan, 2005). Most recently, the Outward Bound Singapore was handed over to the National Youth Council (NYC), under the Ministry of Culture, Community and Youth (MCCY), to better align its focus to support Singapore's national strategies.

2.4.2 Personal and social development

Wang, Liu and Kahlid (2006) inform us that outdoor education gained wide acceptance in Singaporean schools as a distinct curriculum offering. It is understood that while some schools include outdoor education options as part of their physical education (PE) curriculum, other schools offer them under the leadership or co-curricular activities (CCA) programmes. As such, outdoor education in Singapore is not a formalised curriculum and the implementation of it can take a variety of forms. For instance, it can be a three days two nights camp experience for an entire level of pupils (up to 300), at one of the four Ministry of Education (MOE) adventure centres or a five days camp experience for smaller segment of the student population of a level at Outward Bound Singapore at its campus on Pulau Ubin. Ho (2011) tells us that schools that have bigger budgets, may even organise overseas expeditions for their pupils to include a cultural immersion for their students, which is also an area

that Singapore schools are keen to develop for selected students. As a general principle, Singapore schools target to achieve through outdoor education programmes, positive personal and social development for their students by introducing them to adventure activities designed to encourage self-discovery and character building (Wang et al., 2006). During such camps of three days at the MOE adventure centres or five days of camp experience at Outward Bound Singapore, typical activities experienced by school students comprise of artificial rock climbing, abseiling, challenge ropes course, scenario-based problem-solving activities, outdoor camping, outdoor cooking, navigation on land and kayaking expeditions to campsites.

Ho (2013) explains that due to the limited places available for schools to send their students to the highly sought after OBS for adventure-based programmes, schools also organised their adventure-based residential programme at the MOE adventure centres. Such adventure-based camps organised by schools have been a vital part of the co-curricular component of the Singapore education system since the MOE acquired its first camping grounds on St. John Island, which is located off the southern coast of Singapore in the 1960s. This led to MOE acquiring and setting up four more campsites mentioned earlier, with provision of adventure-based facilities.

The four MOE adventure centres were created to increase the access to an adventurous and active experience to address the perception of a Singaporean lifestyle that is seemingly producing youths who are becoming too ‘soft’ (Ho, 2011), since the limited places that OBS could provide is insufficient to cater to the number of students in the national schools. Ho (2011) recounts how the former Education Minister, Mr Tharman Shanmugaratnam had claimed that the Singaporean lifestyle that is seemingly producing youths to be ‘soft’ presented the nation with a major social challenge. In this respect, we are reminded by Christie, Higgins, and McLaughlin (2014) urging caution when considering published literature that makes strong claims of the impact of outdoor residential experiences on “self-confidence, social skills, motivation and their academic attainment” (Christie et al., 2014, pg 2). Their own mixed-methods study (of Outward Bound provision in Scotland) was, to

some degree inconclusive. Whilst they found some initial qualitative evidence where pupils self-reported positive development in social, personal and academic areas, they also noted "a degree of variability in self-reported outcomes. The effect on some pupils was clearly more pronounced than for others, and for a few the experience was interpreted as negative" (Christie et al., 2014, pg 16). The authors noted that the qualitative findings of the study called into question many initial quantitative findings. As this extensive three-year study, which involved an OB residential experience carefully integrated with school-based work intended to "raise achievement" was so clearly equivocal, the prioritisation of residential camp experiences at MOE adventure centres, and programmes at OBS in Pulau Ubin and overseas trips requires critical evaluation.

2.4.3 Developing lifeskills and 21st century competencies

In maintaining a strong advocacy as in the past, the Singapore government continues to view adventure-based outdoor education programmes such as adventure camps and expeditions as a useful medium to develop important life skills and attributes for students. During the Parliamentary Debate on the Education Budget in March 2004, the then Minister of State for Education stated that "rugged activities" such as sports, adventure camps, and expeditions "are naturally well-suited to develop qualities like perseverance, self-reliance, a sense of adventure, self-confidence and a "can-do", gung-ho spirit. All of them are important in the challenges that we are going to face in life" (Singapore Parliament Reports, 2004). I wish to make a point here that such claims regarding the efficacy of outdoor programmes as noted by the Singapore Minister above, echoes Rea's (2008) observation of

> how Government agendas have colonized the language and work of others, in this case defining outdoor learning in terms of schools' effectiveness, an agenda that has been heavily criticized (Hargreaves & Fullan, 1998; Wrigley, 2003, 2007). Some of the outdoor research has focused on the impact on the academic performance of children (Christie, 2004; Dismore & Bailey, 2005; Nundy, 1998) and on aspects of self-concept (Ewert, 1983; Gibbs & Bunyan, 1997; Hattie, Marsh, Neill, & Richards, 1997) (pg 43)

In keeping with this overall support, in August 2004, during his inaugural National Day Rally speech as the new Prime Minister, Mr Lee Hsien Loong went so far as to mention an example of a school which took the initiative of outdoor education programme that complemented its formal school curriculum

> The school sent their entire cohort of Secondary 3 students to Outward Bound Singapore for 5 days, teachers as well as students conducted classes there. So… you camp, you rough it out… test out your character, experience the roughness and challenge each other and put their leadership skills to the test. The Education Ministry can't order this, the schools must want to do this
> (National Archives of Singapore, 2004)

The strong support for outdoor education programmes in Singapore schools is further evidenced in the measures taken by the Ministry of Education policy of setting aside budget and encouraging all national schools to provide for all their students the opportunity to participate in at least three outdoor camping experiences in their school life; once when they are in primary school and twice in secondary school (Shanmugaratnam, 2004). As a result of this shift and accessibility to adventure-based programmes for their students, it was observed by Ho (2013) that schools organised adventure-based programmes run by private outdoor education service providers at the four adventure centres operated by the MOE. These programmes involved a two to three-day adventure-based residential camp in the MOE adventure centres (Ho, 2013).

The commitment and allocation of funds to schedule students for residential experiences, overseas adventure trips and immersion within MOE adventure centres aligns with the goals of building a 'rugged' nation. This view of building a 'rugged' nation has its origins in the early days when Singapore became independent, building up its defence capability as a deterrence to any foreign threat (Ho, 2013). This rationale for outdoor education provision has been noted elsewhere. Cook (1999) for instance, has broadly sketched out the historical classification of outdoor education in the UK since 1944, with reference to character-building and even developing a capacity for war and battle, for the sake of constructing citizens with "ideal"

attributes (pg 158). Prevalent to this form of outdoor education, has been 'moulding' the behaviour of young people through adult intervention (Cook, 1999, pg 158). In this way, the emergence of vision for outdoor education in Singapore parallels the historical constitution of Physical Education (PE) in certain western countries. Kirk (1998) has observed, with concern, that soldiers having to perform in requisite manner within Australian and English post-war contexts led to the reproduction of militaristic (and indeed masculine) forms of PE over successive decades. This trend became subsequently modified through discourses of competitive sport.

Accordingly, various contemporary PE researchers have criticized the narrow orientation of this subject area, while at the same time promoting a more socio-culturally situated and holistic progression of learning to occur (Evans, Rich, Davies, & Allwood, 2008; Wright & Harwood, 2008). Thus, while the Ministry of Education, has championed a form of outdoor education that is intended to play a dynamic role in holistic and broad-based educational experiences for students, the focus on such outdoor experiences founded on the development of militaristic character values such as 'tenacity' (Shanmugaratnam, 2004) is problematic. This can be viewed as nurturing non-reflective and "top-down" conditions and instructional approaches for the sake of transforming character and behaviours. There is a tension here, as such a vision for outdoor education contrasts with recent MOE educational policies regarding social, emotional, physical and moral learning framed by the twenty-first-century competencies framework. Atencio, Tan, Ho & Chew (2014a) also advocate a more contemporary outdoor education vision that is cross-curricular, place-responsive and locally contextualised in line with broader policy perspectives. I will make further comments in Chapter 6, using the observation by Atencio et al. (2014a) to suggest how their views could be further capitalized from the discussions chapter of this study.

2.4.4 New directions for outdoor education in Singapore

In previous sections, I stated that the MOE adventure centres, catered to providing outdoor experiences for Singapore schools through private outdoor education programme providers. From 2016, the Ministry of Education established their own team of outdoor instructors to deliver quality outdoor education programmes (Atencio et al., 2014a). The team revamped its entire approach and took stock of the training and development of its outdoor instructors by partnering with Outward Bound Singapore and staff from the Outdoor and Adventure Learning faculty of Republic Polytechnic's School of Sports, Health and Leisure, to deliver customized training to equip its MOE outdoor instructors with the skills to design and deliver outdoor education programmes (Channelnewsasia, 2016).

The media (Straits Times, 2016) reported on the Ministry of Education's plan to send all its secondary three student cohorts (estimated at 33,000 students per level), for an Outward Bound programme from the year 2020. Because of this crucial change in the implementation of outdoor education services for schools, the private sector outdoor education service providers openly shared their grievances in the local national paper, "Let private firms have a slice of outdoor education pie" Straits Times (2016). Their concern was essentially over the monopolization of outdoor education programmes being delivered by Outward Bound Singapore and MOE's own outdoor instructors (Atencio et al., 2014a). At the core of this dissatisfaction from the outdoor education industry players, many of them home-grown small and medium sized enterprises (SMEs), is the MOE's action to partner solely with Outward Bound Singapore to deliver outdoor experiences for all secondary three students from 2020, essentially cutting out the private players. Such actions runs contrary to political leaders such as the Minister of Finance's 2016 Budget statement, "We will deepen partnerships between Government and the industry, and among industry players to identify challenges, and develop solutions to support transformation", and even the Deputy Prime Minister who was quoted previously echoing that home-grown small- and medium-sized enterprises (SMEs) will be at the heart of the economy as Singapore restructures, and that there should be a vibrant SME sector.

2.5 Research on outdoor education in Singapore

While it is understood that there is strong government support for the beneficial role that outdoor education can play in the development of young people in Singapore (Tay, 2006), a review of the local literature shows that there is no in-depth research on the nature and scope of outdoor education in Singapore. Published research on outdoor education has only appeared recently in the last decade through the work of several post graduate students and other studies have appeared in internationally peer reviewed journals by emerging writers from Singapore (Atencio et al., 2014a; Ee & Ong, 2014; Gassner, Kahlid & Russell, 2006; Ho, 2013; Martin & Ho, 2009; Wang, Ang, Teo-Koh & Kahlid, 2004; Wang, Woon-Chia Liu & Kahlid, 2006). Most of such studies tend to be dominated by reporting the outcome and impact of outdoor education experiences of young people and discussing the results of young people's pre- and post-participation responses to outdoor programmes. While these studies are valuable in those aspects of knowledge, further inquiry and study needs to address other questions that remain unanswered that are specific to the Singaporean context. This would help to address the current gaps about other areas of outdoor education in Singapore.

Martin and Ho (2009), who investigated physical education (PE) teachers' engagement with outdoor education in Singapore, found that while most of their participants agreed that specialised knowledge is vital in carrying out the activities associated with outdoor education, only about one-third of them felt that they had the expertise and knowledge for engaging their students with activities in this subject area. This disparity in their findings indicates the need to further explore the meanings teachers ascribe to outdoor education, what they perceive as specialised knowledge within outdoor education and perceptions of their own teaching competencies. Without subject-specific training in the specialised knowledge of outdoor education, and specialisation, the issues of PE teacher's capacity to create meaningful use of the outdoors during lessons and their own professional development in such areas come to the fore.

Two recent research publications have given us further perspectives on issues related to outdoor education in Singapore. In the first study, Atencio et al. (2014a) describe the potential and limitations of how outdoor education could be infused into the new national physical and health education curriculum. They also highlight a similarity in view by quoting Nicol (2010) that PE teachers might struggle to "make the leap from indoor teacher to outdoor teacher" (Nicol, 2010, pg 167) and recommend future studies to establish teachers' perceptions regarding teaching outdoor education as how it is currently conceived within the domain of physical education. They conclude with a thought on the limiting possibilities for outdoor education if it continues to be placed within PE and propose that outdoor education can be fused with other subject areas outside the traditional domain of PE. In another article by the same authors, Atencio et.al (2014b), explore Singapore pre-service PE teachers' conceptions of outdoor education in Singapore. The findings indicate that outdoor education is generally associated with the "outdoor camp" environment. It was found that pre-service PE teachers hold the view that the purpose of outdoor education is to instill discipline among students and to improve the negative health impacts due to the urban, sedentary and wealthy lifestyle. The authors reflect that a dislocation of outdoor education from the local situation works in opposition to fostering acquisition of life skills and character development. They further critique how such an expectation of outdoor education can convincingly support holistic learning outcomes deemed beneficial to Singaporean youth and society more broadly. Both articles provide a good baseline understanding, addressing philosophical perceptions of pre-service PE teachers on outdoor education.

As those studies focused on pre-service PE teachers' perceptions, it is equally important to survey the perceptions of in-service teachers, as well as outdoor practitioners. In doing so, it would be a valuable contribution to the existing studies to strengthen our knowledge and understanding and foster an in-depth understanding of the 'social and cultural constructions' of outdoor education in Singapore. This underscores my interest in studying the nature and scope of outdoor education in a highly urbanised Asian city-state like Singapore and extend the above

studies by investigating teachers' and outdoor practitioners' beliefs about the value of outdoor education.

2.6 What are teacher beliefs?

One of the observations I have highlighted in my reference to Rea (2008), is that several politicians have made various claims on the efficacy of outdoor education programmes to promote their agendas. What is missing in giving voice to a belief in the value of outdoor education are the school teachers and outdoor practitioners, who are the two actors closest to the participants participating in outdoor experiences. Though school teachers and outdoor practitioners are two actors who are involved in implementing outdoor education in a significant way in Singapore, no study appears to have examined or conducted research into the nature of their beliefs on the value of outdoor education in Singapore.

One difficulty in exploring the literature on teachers' beliefs lies in the plethora of definitions of beliefs (Pajares, 1992). As a global construct, beliefs do not lend themselves easily to empirical investigation (Pajares, 1992).

In the 1990s, Pajares (1992), Calderhead (1996) and Richardson (1996) in their attempt to clarify differences between knowledge and beliefs, suggested that beliefs were more personal, while knowledge was based on facts agreed by members of a particular community. Current research recognises that there is a closer relation between teachers' beliefs and teacher knowledge, especially the practical knowledge that guides their behaviours. Researchers have recognised that beliefs tend to be subjective, personal and reflect individual judgment and interpretation of a community's agreed upon knowledge (Lundeberg & Levin, 2003; Richardson, 1996, 2003).

Researchers recognised that teachers' beliefs, which includes issues of pedagogy, epistemology and self-efficacy, contribute to an overall system of beliefs, which can

function as filters for interpreting their experiences, frames for addressing problems and guides for actions they take (Fives & Buehl, 2012).

Kagan (1992) and Pajares (1992) have identified teacher beliefs under a variety of headings. These range from opinions, attitudes, values, judgements, axioms, guiding images, ideology, perceptions, conceptions, conceptual systems, dispositions, implicit theories, explicit theories, personal theories, personal practical knowledge, to perspectives. Richardson (1996) adds to this, stating that "beliefs are thought of as psychologically held understandings, premises or propositions about the world that are thought to be true" (pg 104). From the above, it is quite evident that the belief construct is made up of a wide range of factors, which undoubtedly influenced my data collection.

Taylor and Caldarelli (2004) noted that teachers' beliefs are formed through both formal and non-formal educational experiences. By the time they enter college, pre-service teachers have developed explicit beliefs about teaching and learning through their observation of and participation in the routine of formal K-12 education (Pajares, 1992). Once these beliefs are firmed up, these educators construct causal clarifications, to justify them, which may or may not be accurate (Pajares, 1992). Pajares (1992) argued that teachers' beliefs were formulated and reinforced through a self-fulfilling prophecy cycle. This means that teacher's beliefs about teaching and learning influenced their perceptions, those perceptions affected their behavior, and their behaviors led to outcomes that ultimately corroborated their originally held beliefs.

With the above backdrop, Fives and Buehl (2012) have succinctly summarised that "a lack of cohesion and clear definitions has limited the explanatory and predictive potential of teachers' beliefs" (pg 471).

2.6.1 What is the nature of teacher beliefs?

Teachers' beliefs are shaped by a range of factors that work together to inform their worldview and practice. In the process of becoming a full teacher, most would already possess a well-developed set of beliefs (Joram & Gabriele, 1998; Anderson, Blumenfield, Pintrich, Clark, Marx & Peterson, 1995; Wubbels, 1992; Zeichner & Gore, 1990). These beliefs and attitudes are constructed based on cultural and personal beliefs, some of which may be long-standing (Holt-Reynolds, 1992), stable, deeply entrenched and resistant or difficult to change (Joram & Gabriele, 1998; Kagan, 1992; Marso & Pigge, 1989; Mertz, 1991; Clark, 1988). These beliefs can be related to teachers and students, student learning, methods of instruction, curriculum, and schools as social institutions (Pajares, 1992). Fives and Buehl (2012) have identified internal and external factors that support or hinder teachers' enactment of their beliefs. Internal factors comprise teachers' knowledge, interactions among the different aspects of teacher's belief system for instance, how they interpret situations; and teachers' self-efficacy beliefs and personal identity beliefs. External factors are made up of role of culture, socio-historical shifts within culture, national policies, perceived school culture and immediate environment and parents and students' reactions.

Understanding these as internal and external factors would enable school leaders to consider what causes teachers to possess such beliefs towards outdoor education and could work to review and clarify any on a needs basis in order to facilitate any particular outcome. Teachers could also better relate to how their beliefs are influenced and internalise how it might impact their role as a teacher.

2.6.2 Sources of teacher beliefs

Richardson (1996), highlighted three major sources of teacher beliefs: personal experience, experience with schooling and instruction, and experience with formal knowledge – both school subjects and pedagogical knowledge. A number of other reasons have been proposed with regard to the factors that might have influenced

the preconceived beliefs of prospective teachers. It is argued that teachers may have been influenced by the way they themselves acquired work-related knowledge in their first occupations (Robson, 2002).

Others have also highlighted that teacher beliefs may develop as a result of years spent as a student watching and participating in classroom interactions (Feiman-Nemser, & Floden, 1986; Gunstone, 1989; Joram & Gabriele, 1998; Mertz, & McNeely, 1991). The many years spent as classroom observers has provided them with experience and insight to develop their own personal theories and powerful conceptions about teaching and learning (Dart, Boulton-Lewis, Brownlee, & McCrindle, 1998). Researchers (Hollingsworth, 1989; Powell, 1992) consider these previously held beliefs and conceptions act as filter for interpreting their classroom experiences. In the context of this study, the application would be in relation to how teachers and outdoor practitioners' past experiences of outdoor education implementation could act as a filter for interpreting their current beliefs about outdoor education for students.

2.7 Beliefs of outdoor practitioners

While the ways in which teachers' beliefs and their influence on educational practices has been documented in traditional classroom settings (e.g. Fang, 1996; Kagan, 1992; Pajares, 1992); there have been relatively few studies documenting the instructional beliefs of outdoor practitioners. One of the few studies, by Taylor and Caldarelli (2004) examined the beliefs and practices of environmental educators working in state and local parks in the Northeastern United States. From their semi-structured interviews, Taylor and Caldarelli came to the conclusion that these environmental educators' beliefs were influenced by their experiences in both formal and non-formal educational situations, and that environmental education training programs should address how individual beliefs influence and shape practice, particularly reflecting on teaching practices that target learning. Hill's (2010) study on the beliefs of outdoor educators in New Zealand used interviews with four secondary outdoor

education instructors, who described their personal beliefs and how those beliefs were demonstrated during instruction. For instance, one outdoor practitioner indicated that her personal environmental beliefs shaped her decisions about what environmental education scope and coverage should be built into her lesson plans. Another outdoor education teacher observed her personal belief that outdoor education can lead to improving students' confidence, therefore she facilitated activities that nurtured teamwork, leadership development, and ultimately, personal development.

Martin and Ho's (2009) research findings of a survey questionnaire targeted at Singapore school teachers and outdoor instructors, provides some further insights to the range of beliefs about outcomes from outdoor education. The survey questionnaire was adapted from an Australian (Lugg & Martin, 2001) and New Zealand (Zink & Boyes, 2006) study. For each of the outcome statement in the survey questionnaire, participants were asked to choose one option on a Likert scale from: (1) very important; (2) quite important; (3) of some importance; or (4) not important. Mean ranking was calculated for each outcome. Table 2.2 presents this data in rank order.

Rank of importance	Learning outcome	Mean score
1	Increase personal resilience	1.19
2	Develop group co-operation	1.25
3	Increase self-responsibility	1.26
4	Improve social & communication skills	1.40
5	Improve self-esteem	1.47
6	Enhance critical thinking/problem-solving skills	1.49
7	Provide an alternative to classroom-based learning	1.52
8	Develop leadership skills	1.72
9	Develop understanding of human relationships & responses to nature	1.77
10	Promote environmental appreciation	1.83
11	Enhance knowledge of outdoor environments	1.89
12	Extend learning in a range of discipline areas	1.92
13	Learn outdoor survival skills	1.92
14	Improve physical fitness	1.99
15	Develop outdoor recreation/leisure skills	2.00

Table 2.2: Rank order of importance for outdoor education learning outcomes in Singapore, (Martin & Ho, 2009)

The mean scores can be interpreted as revealing that participants thought all the outcomes listed were at least 'quite important' for outdoor education since the mean scores range from 1.19 to 2.00. This is comparable with results from the original Australian study by Lugg and Martin (2001) that had mean scores ranging from 1.21 to 2.08. The results from the New Zealand study by Zink and Boyes in 2006 were a little more spread, ranging from 1.18 to 2.49. One of the observations that may have contributed to this slight spread in the mean scores of the New Zealand study was due to the inclusion of four learning outcomes of cultural/ethnic understanding, Tikanga Maori, data gathering and analysis, and spirituality. If we removed these additional four outcomes, the New Zealand range of ranked scores 1.18 to 1.85 becomes even narrower than both the Australian and Singaporean studies.

In sum, the teachers' responses to the studies in Australia, New Zealand and Singapore report that from the range of suggested outcomes of outdoor education, the common outcomes of personal, community, environmental and recreation leisure skills are believed to be 'quite important'. It seems that teachers of outdoor education readily see the potential for outdoor education in pursuit of the many foci of outdoor education discussed at the beginning of this chapter. The Singapore teachers who responded gave top rankings to personal and community related outcomes: increasing resilience, developing group co-operation and increasing personal responsibility were dominant.

Although there is limited empirical evidence from the outdoor education literature on instructor beliefs influencing instruction, the research from traditional education is sufficiently extensive to allow for the conclusion that outdoor practitioners' personal beliefs affect their instructional practices. Even more telling by its absence in the literature is teachers' and outdoor practitioners' belief of the value of outdoor education. There is also no study available that sheds light on the sources of outdoor practitioners' beliefs, so this study adds this knowledge to the current gap.

A review of literature indicates that resilience was a term commonly used in Singapore and seen as a cultural value (Low, 2007), and is commonly linked to notions

of continuous effort. Low (2007) made this point and sought to understand the origins of resilience through a qualitative study, interviewing 43 Singaporeans from a cross-section of society. Most of the interviewees, 93% (40 interviewees) of his research participants talked about Singaporeans being resilient or having the mindset of continuous effort. The interviewees shared that resilience amongst the Singapore citizens and society had primarily evolved from having to deal with economic difficulties because of a small domestic market/city state, the nation' s historical events, and solid political determination. An interesting observation analysis of the interviewees' responses revealed that no single interview subject referred to education having an influence on their views about the importance of resilience, nor did they talk about National Service, which is compulsory for all males over 18 years of age in Singapore (25 of the 43 research participants were male). It is also obvious that the idea and acceptance of resilience, although applied to the individual, was something believed by the interviewees to be of benefit to the nation. Eighteen of the 43 interviewees in Low's (2007) research on resilience, spoke of younger people "getting softer . . . as a consequence of affluence" (pg 138). Consistently, this is a point that Lee Kuan Yew, Singapore's first Prime Minister, related in his 1998 memoirs about how "the present generation take their security and success for granted . . . they are less willing to make sacrifices for the benefit of the other in society" (quoted in Lau, 2005, pg 229). Singapore's historical and cultural background has played a vital role upon the nation's inhabitants and their strongly held belief of resilience as a necessary and relevant value.

The former Director General of Education in Singapore, Ms Seah Jiak Choo, in her opening address at the second national outdoor education conference in October of 2006, shared personal anecdotes on how she observed that Singapore students were less resilient than their early kin who settled in the city-state. She called for outdoor education to play a critical role in shaping a more rugged society well placed to accept and deal with future challenges of life in Singapore. Once again, such appeal to authoritative claims on the value of outdoor education, while affirming the stakeholders in the field and policy formulators in the Ministry of Education, does

little to provide substantial evidence on the efficacy of outdoor education from an empirical angle. Even more noticeable in Singapore, is the under-representation of school teachers' and outdoor practitioners' voices in giving their perspectives about the value of outdoor education as they implement the roll out of outdoor education in schools. This is an area that the literature has not sufficiently addressed. This is the gap I will now look at to extend our knowledge, which I capture as research questions in the next section 2.8 - "Purpose of this study".

Given that "a lack of cohesion and clear definitions has limited the explanatory and predictive potential of teachers' beliefs" (Fives & Buehl, 2012), the scope undertaken in this study will explore beliefs as postulated by Kagan (1992) and Pajares (1992) as well as the range of external and internal factors identified by Fives and Buehl's (2012) to extrapolate teachers' and outdoor practitioners' beliefs about outdoor education.

2.8 Purpose of this study

The literature review on outdoor education globally revealed a dearth of available local outdoor education literature; therefore, the purpose of this study is to contribute to the limited literature related to local Singaporean outdoor education both to advance local knowledge and to broaden the scope of international perspectives. This study seeks to explore and extrapolate the meanings and perspectives related to outdoor education in the city-state of Singapore as expressed by the two key actor groups – school teachers and outdoor practitioners. As increased support, funding and resources are made available for outdoor education to play a more pivotal role in the growth and development of our young people in Singapore, my study is intended to contribute to the growing Singaporean knowledge about outdoor education insofar as it pays heed to Brookes' (2004) call that no aspects of outdoor education should be considered universal without first considering the geographical, historical, social and cultural context. Heeding this reminder to locate outdoor education as how it is conceived, understood and

appreciated locally in the city-state of Singapore, the study is framed by the following research questions:

1. What are Singapore school teachers' and outdoor practitioners' beliefs about the value of outdoor education?
2. What are the sources that influence their beliefs?

Chapter 3

Methodology & Method

> By learning about how the world appears to others, we will learn what the world is like, and what the world could be like.
>
> Marton & Booth, 1997, pg 13

3.1 Introduction

The core methodology adopted is described in this chapter. I will begin by considering which research paradigm best aligns with my study and then follow with a discussion of the theoretical assumptions underpinning my approach, before going deeper into phenomenography, which is the specific research design used, followed by various discussions and issues of this approach. Then I turn my attention to the more practical aspects of method such as data generation, data sampling, and data analysis. The chapter concludes with a discussion of relevant ethical issues.

3.2 Research paradigms

Developing a research methodology is the process by which a study moves from fundamental assumptions to research design, methods and data collection (Myers, 2009). Quantitative and qualitative researchers have unwaveringly different world-views and function under different ontological, epistemological, and axiological traditions about the goal and nature of research (Bryman, 1984; Tashakkori & Teddlie, 1998). The justification of the choice of methodologies and methods goes beyond answering questions in the proposed research. This justification relates to identifying the underlying assumptions about reality (ontology) and understandings of human knowledge (epistemology) that the researcher brings to the research, and the theoretical perspectives which lie behind the methodology used (see Figure 3.1).

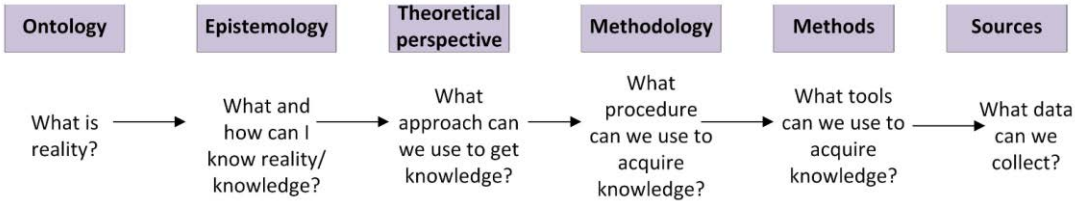

Figure 3.1: Research paradigms (adapted from Hay,2002, pg 64; and Crotty,1998)

According to Denzin and Lincoln (2003), "qualitative research involves an interpretive, naturalistic approach to its subject matter; it attempts to make sense of, or to interpret, phenomena in terms of the meanings people bring to them". In other words, qualitative research is naturalistic, it attempts to study the everyday life of different groups of people and communities in their natural setting. Additionally, Domegan and Fleming (2007) argue that "Qualitative research aims to explore and to discover issues about the problem on hand, because very little is known about the problem. There is usually uncertainty about dimensions and characteristics of a problem. It uses 'soft' data and gets 'rich' data'' (pg 24).

Myers (2009) contends that qualitative research is designed to help researchers understand people, and the social and cultural contexts within which they live. Such an approach allows the complexities and differences of worlds-under-study to be explored and represented (Philip, 1998, pg 267). Creswell (2003) explains that in qualitative research, different knowledge claims, enquiry strategies, and data collection methods and analysis are employed. Data sources in qualitative research include observation and participant observation (fieldwork), interviews and questionnaires, documents and texts, and the researcher's impressions and reactions (Myers, 2009). Written descriptions of people, events, opinions, attitudes and environments, or combinations of these can also be sources of data.

Eventually, the essential concern guiding the choice of research methodology should always be the research questions, which are determined by the need for information that is contextually relevant and useful. This study follows a 'big-q' approach to

qualitative research. Qualitative studies adopt two broad approaches, “big q” and “little q” methods (Thompson & Harper, 2012; Willig, 2008). Qualitative research defined as 'little q' places the emphasis on qualitative data collection, where non-numerical data are used within a hypothetical-deductive research design. Such a research approach assumes direct correspondence between what is observed and the nature of reality and is characterised by the researcher imposing his/her meanings during data collection and analysis (Willig, 2008). “Big q” research, on the other hand, acknowledges the inter-subjective relationship between the researcher and the phenomena under investigation, placing the emphasis on qualitative data analysis, and is performed in a more inductive, open-ended, and reflexive fashion considering both epistemological and personal reflexivity (Thompson & Harper, 2012).

3.3 Theoretical framework

The theoretical framework of a research project relates to the philosophical basis on which the research takes place and forms the link between the theoretical aspects and practical components of the investigation undertaken. Therefore, the theoretical framework “has implications for every decision made in the research process” (Mertens, 1998, pg 3). According to Crotty (1998), the starting point in developing a research proposal is to identify the methodologies and methods that will be utilised in the research project and then to justify their choice. The methodologies relate to “the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes” (Crotty, 1998, pg 3). The application of methods, conveys “the techniques or procedures used to gather and analyse data related to some research question” (Crotty, 1998, pg 3).

The theoretical framework, outlined by Crotty (1998, pg 4-5) discloses the methods, methodology, theoretical perspective and epistemology underpinning the research.

This is used in identifying the theoretical framework adopted for this study, as shown in Table 3.1.

Epistemology	Theoretical Perspective	Methodology	Methods
• Constructionism	• Interpretivism o Phenomenography	• Survey Research • Interpretive Approach	• Open ended questionnaire • Open ended interview

Table 3.1: Crotty's schema outlining the theoretical framework of the study

On reflection, Crotty's theoretical framework offers a format for a researcher to conceptualise and clarify the basis for a research project. By using the scheme as a guide, researchers can intentionally and deliberately consider how the ideas underlying their project fit together and ensure consistency between them. This will help a research project to maintain intellectual rigor. In my own case as I embarked on this study, I found it to be a helpful guide as it provided clarity for the approach I was taking.

3.3.1 Epistemological and theoretical perspective

Epistemology refers to the nature of knowledge. It is interested to search for the answers to "what is the relationship between the knower or would-be knower and what can be known?" (Guba & Lincoln, 1994, pg 108). Ontology or metaphysics is the nature of reality. It attempts to find out what is present that can contribute to our understanding of the world (Guba & Lincoln, 1994) and involves considering the filters through which we see and experience the world.

Considering the purpose of this research and the open-ended research questions, this study is encapsulated within the theoretical perspective of interpretivism. Interpretivism looks for "culturally derived and historically positioned interpretations of the social life-world" (Crotty, 1998, pg 67). The theoretical perspective of interpretivism sees the world as too complex to be reduced to a set of observable 'laws' that cannot necessarily be generalised to concern other kinds of relations.

Therefore, generalisability is less important than understanding the real workings behind 'reality'. Hence, an inductive research approach through phenomenography to seek 'thick descriptions', is adopted in this study. The notion of 'thick descriptions' in qualitative research is based on Geertz's (1973) adaptation of Ryle's philosophical work which contends that the study of cultures is fundamentally an interpretive process that requires thick description of social behaviors, structures, and practices. Thick description unites details of social interaction with the broader cultural patterns that stimulate specific actions with meaning. Such thick narrative descriptions gave me opportunity to consider the views of the study participants and the subtleties of changing and multiple interpretations (Walsham, 1995).

Marton (1986) explains phenomenography as "a research method for mapping the qualitatively different ways in which people experience, conceptualize, perceive and understand various aspects of, and phenomena in, the world around them" (pg 31). As the human experience is an interaction between the one who experiences, and the phenomenon being experienced, logically the variations in ways of experiencing are related through the common phenomenon experienced (Akerlind, 2012). Earlier, I highlighted that outdoor education brings with it a variety of meanings and taken for granted assumptions about its purpose and efficacy due to its various foci. The phenomenographic approach enables exploration of the variety of meanings about the value of outdoor education as conceived through the personal meanings of school educators and outdoor practitioners as extrapolated. Through phenomenography, a set of qualitatively different but structurally related categories of description of ways of conceiving the phenomenon can be identified. This is referred to as the 'outcome space' (Åkerlind, Bowden & Green, 2005) in phenomenographic research. The 'outcome space' in the case of this study relates to how school-teachers and outdoor practitioners conceive their beliefs about the value outdoor education.

3.3.2 Constructionism

The corner stone of constructionism is that "reality is socially constructed" (Mertens, 1998, pg 11). The emphasis of the constructionist epistemology is aptly described by Crotty (1998) as

> Truth, or meaning, comes into existence in and out of [one's] engagement with the realities in [one's] world. There is no meaning without a mind. Meaning is not discovered but constructed. In this understanding of knowledge it is clear that different people may construct meaning in different ways, even in relation to the same phenomenon. In this view of things, subject and object emerge as partners in the generation of meaning (pg 8)

In the constructionist paradigm, the individual is not passively absorbing and receiving meaning, but a lively, inventive and reflective participant in the construction of meaning. One's concept of objects and events, therefore, can be attributed to the type of interaction that occurs with objects and events, and how one relates and directs attention to them (Denzin & Lincoln, 1994). For example, the concept of "character building" and "developing self-esteem" in outdoor education has prompted variation in the discourse (Brookes, 2003a; Leather, 2013). How and what contributes to such variations amongst Singapore educators and outdoor practitioners remains unknown, so the present study strives to offer some insights to this as it is specifically contextualised within outdoor education in Singapore.

In the wider international discourse of outdoor education, teachers and outdoor practitioners are important stakeholders as they play an important part in the overall social construction of outdoor education in their communities. Those involved in that shaping of understanding can be considered as a "community of practice" (Wenger, 1998). This term, introduced by Wenger (1998) suggests the relevance of changing social discourses and the renegotiation and reforming of ideas is indicative of the social construction of knowledge. The construction of meaning by the community of practice, is not a static reality, but an ongoing phenomenon. This social construction of meaning is manifested through symbols which are linked with a social origin and conventions, and within various cultures, these conventions provide the direction

and structure for human behaviour. In this sense "culture is best seen as the source rather than the result of human thought and behavior" (Crotty, 1998, pg 53). According to Berger and Luckmann (1966), there is a historical and biographical component to this encounter with the social and cultural world, and through this encounter, we develop a social construction of reality. The authors' (Berger & Luckmann, 1966) historical aspect relates to being born at a time in history into a physical social world, which already has developed a social cultural world of meaning and an inherent system of symbols and conventions. The biographical component relates to individuals' socio-cultural journeys within the subcultures as part of a segmented portion of the overall social world where they live their lives; which is also in a cycle of constant social rejuvenation and cultural development.

Crotty (1998) contends that social construction "is the view that all knowledge, and therefore all meaningful reality as such, is contingent upon human practice, being constructed in and out of interaction between human beings and their world and developed and transmitted within an essentially social context" (pg 42). This foregrounds the above point about how outdoor educators, being the practitioners, operating in a social context, contribute significantly to the 'how and what' of outdoor education in Singapore. The choice of situating this study within the constructionist epistemology deeply reflects the appropriateness of recognising the cultural and social conditions that influence the interpretation of outdoor education by the two key actors, embodying an active engagement of the human person in their social construction of reality.

3.3.3 Research design

In this section I have shown that a phenomenographic approach, focusing on understanding the different ways in which people experience, conceptualise, perceive and understand various aspects of, and phenomena in, the world around them is appropriate to the aims of this research. A phenomenographic approach is congruent with a constructivist ontology (which I discuss in more detail in section 3.4.2) and the constructivist epistemological position as observed by Crotty (1998),

whereby reality needs to be interpreted to discover the underlying meaning of events and activities. This informs methods of data generation and analysis. The phenomemographic approach responds to the need to hear the voice of participants' lived experiences that provides an interpretive account about a phenomenon and is a deeply reflective practice through which one enquires into human meaning (van Manen, 1990). This translates into the research design whereby questions in an open-ended survey and semi-structured interview are used to articulate the different ways in which the study respondents experience, conceptualise, perceive and understand their belief about the value of outdoor education. I discuss this further in sections 3.7 and 3.8.

3.4 Origins and development of phenomenography

The etymological roots of the word 'phenomenography' lie in the Greek words *phainomen* and *graphein*, meaning appearance and description. Intriguingly, the term was originally coined by Sonnemann (1954) who described phenomenography as "a descriptive recording of immediate subjective experience as reported, for example, by a person under psychiatric examination" (pg 344). It was initially used and conceptualised in the pioneering work of Marton, Säljö, Dahlgren and Svensson at Gotenburg University in Sweden during the early 1970s as a method to study educational questions (Bowden, 2000; Hasselgren & Beach, 1997; Marton, 1986, 1994; Svensson, 1997).

The goal of phenomenography adopted in this study is to bring across each study subject's figural conceptions of the phenomenon (being investigated) in a particular context and time. As such the study seeks to summarise and document the collective meanings expressed during the encounters between the researcher and study subjects. The descriptions from the current study subjects are relational, experiential, content-orientated, and qualitative. Marton (1981, 2000) explains that the descriptions are relational insofar as the focus of the research is on the relationship between the object and the subjective perception of the participants.

They are experiential, as researchers consider the understandings derived from participants' points of view, which are formed because of personal experience with the phenomena under inquiry. Marton and Booth (1997) also explain that the descriptions are content-focused in that it is the individual's concrete experience, as-described, that is examined and compared, instead of abstract ideas or peoples' mental structures, processes or behaviour. Finally, the descriptions produced are qualitative in that the intent of the researcher in establishing categories of description is to depict the nature of qualitatively different ways in which study subjects describe their experience of a phenomenon (Dall'Alba, 2000). Marton and Booth (1997) contend that the value of a set of categories of descriptions is judged based on the extent to which (a) they reveal something distinctive about a way of experiencing a phenomenon; (b) each category stands in a logical relationship with other categories providing a logical structure; and (c) the number of categories in a set is a direct result of the extent of variation in meanings. According to Marton (1981), the aim of phenomenography is to "find and systematise forms of thought in terms of which people interpret aspects of reality – aspects which are socially significant, and which are at least supposed to be shared by the members of a particular kind of society" (pg 180).

The results of phenomenography often comprise: (a) a detailed elaboration of the categories of description, (b) a detailed analysis of the relationships within and between categories, and (c) an outcome space (Åkerlind, Bowden & Green, 2005). The outcomes attempt to present the intimate subject-object relations that are understood as the different ways in which the specific content, event, moment is experienced (Yates, Partridge & Bruce, 2012). The end product of data analysis processes is the category of description. Categories of description are a way to express conceptions of the phenomena under investigation as they are expressed by study subjects who are recruited for the study, that may, or may not, describe the entire range of possible conceptions of a phenomenon (Barnard, McCosker & Gerber, 1999).

3.4.1 The outcome space

The ‘outcome space’, is a diagrammatic or structural representation of the similarities and differences between the categories of descriptions resulting from the analysis of the relationships between identified categories of descriptions, giving a whole picture of the experience of the phenomenon by the participant group. It integrates the researcher's understanding of the complexity of different ways a phenomenon is experienced by the group of research participants. Outcome spaces “represent the full range of possible ways of experiencing the phenomenon in question, at this particular point in time, for the population represented by the sample group collectively” (Åkerlind, 2005a, pg 323). How a phenomenon is viewed and experienced is a value-based judgement that draws on theory, values, and contextual factors that are not inputs into the phenomenographic approach. Marton (1981) referred to the outcome space as 'collective intellect', which essentially provides a system of conceptual order. The categories of description are then logically ordered in an outcome space (Marton & Booth, 1997), to produce a logical hierarchy (which may become a diagram) with categories depicting few features of the phenomenon to categories describing richer or deeper capacities of seeing/experiencing the phenomenon (Thune & Eckerdal, 2009). Thus, the ordering could be horizontal or vertical as a final outcome (Barnard et al., 1999; Entwistle, 1997a; Marton, 1981).

This approach sought to provide an alternative to the positivist behaviourist approach taken towards research in education at that time, to focus largely on internal mental processes (Ekeblad & Bond, 1994). The philosophical and methodological principles were not always clearly defined, hence phenomenographic researchers often borrowed from several related traditions in formulating their own work, or unreflexively took the ontological and epistemological basis of phenomenography for granted (Svensson, 1997; Yates et al., 2012). The call to refine and make explicit core principles of phenomenographic research was prompted due to criticism regarding the variation in practice and lack

of methodological reflexivity among phenomenographic researchers (Hasselgren & Beach, 1997; Marton, 1988, 1995, 2000; Säljö, 1997). Åkerlind (2005a) postulates that this could be one of the reasons for the apparent divergence in approaches to the practical implication of phenomenography that seems to be practiced by various researchers.

3.4.2 Data collection, analysis and presentation in phenomenography

Currently, there is no single phenomenographic method. Instead data collection, analysis and presentation methods differ substantially among different researchers who use phenomenography, and in some cases, even by the same researcher undertaking different studies (Bowden and Walsh, 2000). Marton, Fensham and Chaiklin (1994) noted that phenomenography has been used to study topics outside of educational settings. For example, it has been used in both psychiatric nursing and general health care (Le Lievre, Schweitzer & Barnard, 2011; Skärsätera, Dencker, Häggström, & Fridlund, 2003; Wirihana & Barnard, 2012). However, in the examples cited, it was not used to study the different ways in which a therapeutic programme is experienced and structured in participants' awareness. Due to this methodological incongruity, it has led to a different approach in using phenomenography in those examples cited. Similarly, for my study, phenomenography is used to study teachers' and outdoor practitioners' beliefs about the value of outdoor education based on their lived experience of outdoor education and how that impacts their belief. I am raising this to reinforce the point that there is no single phenomenographic method.

Phenomenography is a research approach that seeks to identify variation in experiences of a phenomenon amongst a sample of a given population. It does not seek to identify common themes but is concerned with differences in the way a phenomenon is experienced. It assumes that such experiences may be depicted by a limited number of qualitatively distinct categories of description (Marton, 1981). As well as identifying different categories or conceptions of a phenomenon, the researcher also seeks to develop an understanding of the meanings of those

conceptions and the relationships between them (Entwistle, 1997a). In the phenomenography category formulation, it is accepted that a category of description is not equivalent to the meaning expressed in any one transcript and similarly, the meaning expressed in a transcript is not equivalent to the meaning experienced by the interview participant, because of the contextual sensitive nature of experience (Åkerlind, Bowden, & Green, 2005). Åkerlind et al. (2005) draw our attention to the phenomenographic focus on participants as a collective group, rather than as a series of individuals. This is because in phenomenography, any one transcript is not likely to match exactly with any one category of description, because the categories have been established from an analysis of all of the transcripts, as a group. From this perspective, no one transcript can be understood in isolation and can only be interpreted in comparison with the rest of the group of transcripts. This important phenomenographic attribute, which focuses on the collective experience is aptly captured in a quote by Trigwell (2006):

> The essence of the approach is that it takes a relational qualitative perspective that aims to describe key aspects of variation in the collective experience of phenomena, rather than focusing on individual experience. (pg 367)

In phenomenography, as the focus of the description and analysis of experience is at a collective level, with the aim being to find all the qualitatively different ways of seeing the phenomenon as expressed by interviewees (Thune & Eckerdale, 2009), individual voices are not heard. This process of collection and analysis is described and further discussed in the next chapter.

As I describe the analysis and presentation in phenomenography, I will focus on two main differences between phenomenography and phenomenology. Like phenomenography, phenomenology is also a field of knowledge that is acquired by having experience as the subject of the study (Walker, 1998). The main purpose of phenomenography is to describe the variety of experiences regarding phenomena in the universe (Sjöström & Dahlgren, 2002). Phenomenography uses a second-order perspective, in which the world is described as it is understood. While the main

purpose in phenomenology is to reach the essence or meaning of the phenomenon (Barnard et al., 1999; Laverty, 2003) using a first-order perspective, in which the world is described as it is. Phenomenography, with the suffix -*graph*, represents a research approach aiming at describing the different ways a group of people understand a phenomenon (Marton, 1981), whereas phenomenology, with the suffix -*logos*, aims to illuminate the structure and meaning of a phenomenon (Giorgi, 1999). Marton referred to the first-order perspective as the question of "what a thing really is" and the second-order perspective as the question of "how a thing is perceived" (Sjöström & Dahlgren, 2002; Marton, 1981). In a phenomenological study the phenomenon *per se* is investigated, whereas in a phenomenographic study, the researcher investigates how (a group of) people view or understand the phenomenon. As an example, using political power as the phenomenon, a phenomenological approach would aim at learning about political power, while the phenomenographical approach would aim at learning about people's experience of political power.

The use of a framework that offers a second-order perspective is advantageous in addressing the main research question for this study, with the aim being to document conceptions as a way of investigating the collective meanings of teachers' and outdoor practitioners' experiences and their belief on the value of outdoor education (see Figure 3.2).

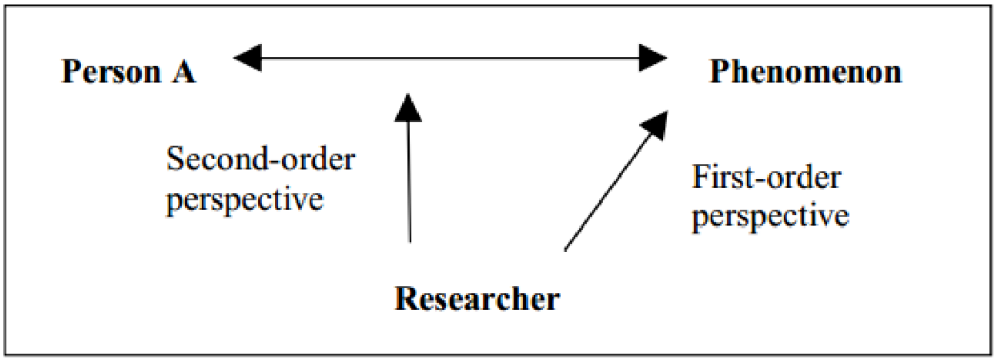

Figure 3.2: Comparing the first and second order perspectives (Uljens, 1991, pg 17)

Another important difference between phenomenology and phenomenography, is that phenomenology takes a dualistic ontology, in which the object and the subject are considered separately and independently, whereas phenomenography embraces a non-dualistic ontology implying that the subject and object are inseparable:

> From a non-dualistic ontological perspective there are not two worlds: a real, objective world, on the one hand, and a subjective world of mental representations, on the other. There is only one world, a really existing world, which is experienced and understood in different ways by human beings. It is simultaneously objective and subjective. An experience is a relationship between object and subject, encompassing both. The experience is as much an aspect of the object as it is of the subject. (Marton, 2000, pg 105)

The non-dualist standpoint in phenomenography asserts that our views of the world, which comprise the world we know and live in, are made up of an internal connection between the objective (outside physical reality) and subjective (meanings and internal mental acts), resulting in a single experienced reality (Marton & Booth, 1997).

Reflecting on the above considerations, firstly, the non-dualist approach where the individual and the phenomena are inseparable, for the experience to be studied, it means that the study should clearly focus on a specific task or phenomenon to prompt that experience. The setting explored in my study required me as the interviewer to focus on the subject's belief experiences on the value of outdoor education. The next point relates to the second-order nature of the research approach which required me to focus on talking to the interview subjects about how they experience their belief (that is, to describe the experiences my interviewees relate, rather than to describe their own experience, which is a first -order approach). Finally, the emphasis on variation, or on experiences which are different, required a discrete approach to the analysis of the interview transcripts to neglect those elements that were similar across that range, and to stress that there were internal relations. The creation of an outcome space which describes those internal relations in structural and referential terms also permitted the construction of the hierarchy

of the structural component of the study. These considerations will be visited in the next chapter as I present the analysis and findings.

3.4.3 Critiques and debates within phenomenography

Various perspectives ranging from positivist, hermeneutic, critical, to post-structural have contributed to the critique about phenomenography. While quantitative researchers criticise the subjectivity involved in establishing categories of description, qualitative researchers view phenomenography as a deviant branch of more well-known qualitative approaches. Phenomenography in its early stages was "bedevilled by a lack of specificity and explicitness concerning both the methods for the collection and analysis of data and the conceptual underpinning of those methods" (Richardson, 1999, pg 53). This cannot be said about contemporary, well-conducted phenomenographical research (Bowden & Green, 2005). Through my readings, the discussion of critiques and debates within phenomenography will be structured in four themes in the following paragraphs: (a) problems with the structuring and interpretation of categories of descriptions; (b) questions about the consideration given to demographic variables such as gender, and contextual influences on knowledge construction; (c) concerns raised about the results and approach of phenomenographic research raised from post-structural and critical perspectives; and (d) the partisan development and inaccessibility of phenomenography.

a) problems with the structuring and interpretation of categories of descriptions

Cousin (2009) argues that phenomenographic researchers struggle with a common dilemma shared by all interpretive approaches, which is, whether the results generated can be seen to represent authentic experiences of the participants, or whether they are merely the researcher's perceptions of the respondents' perceptions. In searching for empirical validity, researchers have encouraged the use of member checks, which refers to recycling of analysis back to subjects. Conclusions are given to the subjects and feedback is requested about the accuracy of the

content. This ensures that the researcher and the subjects are viewing the data consistently. But doing member checks is not feasible in the case of phenomenography as Collier-Reed, Ingerman and Berglund (2009) point out that in general, study subjects will “not be able to recognise ‘their’ contribution to the outcome space. The categories of description do not capture their ways of experiencing the phenomenon, but rather the experience of the phenomenon by all those in the study” (pg 47). In view of the above, Grossman (2002) remind us that rather than being grounded in the data and unfolding as a result of the research process, such approaches neglect the possibility that subject's statements obtain their meaning in relation to the researcher's preconceived ideas. Ashworth and Lucas (1998) recognise the researcher’s interpretive position but call for the necessity to 'bracket' the researcher's socially and historically tainted worldviews, and in the process, allow for the findings to stay as close to the text as possible. I reflected on this and I remembered ‘bracketing’ my own worldviews as I approached the analysis. I provide a more comprehensive account of how I address this in the later section 3.9.3 of this chapter under ‘Reflexivity’.

The effect of the research is most strongly felt during the analysis phase, when categories are created and structured. Trigwell (2000) acknowledges that it is not possible to empirically prove the categories of description, as there is no 'right' interpretation, but the description can be reasoned and inspired based on the data. Säljö (1997) suggested that the alternative often used for conception, “ways of experiencing”, is transient and challenging. He advocates that issues of communication, language, and meaning are key. He believes that what people say is not so much their way of experiencing, but their use of explicit kinds of communication, to respond to their conceptions in a peculiar context. He extends this view by suggesting that “we have access to nothing but what people communicate (or what they do), and one should be extremely cautious of considering this as indicating a way of experiencing rather than as, for instance, a way of talking” (pg 178). Åkerlind (2005a) suggests that such attempts to ground phenomenographic

results in discourse miss the goal of phenomenography, which seeks to uncover subjects' awareness or understanding of the phenomenon, not to provide a description of subjects' actual practice. I discuss my view on this in section 3.9.1 under 'Credibility'.

b) questions about the consideration given to demographic variables and contextual influences on knowledge construction

A second criticism by Säljö (1997), is that phenomenography has been unable to consider how context, demographics, and predominant discourses can contribute to the formation of conceptions, and ultimately categories of description. Webb (1997b) supports this by arguing that in phenomenographic research, participants are viewed as repositories for the storage of parts of collective conceptions, with a huge gap not covered as no consideration is given to the gender, social, historical, cultural or human understanding of the participants. He firmly believes that "any learning theory which regards the concepts simply as the concepts, quite apart from the cultural experience of the learner, is, to say the least, somewhat limited" (Webb, 1997b, pg 227). To illustrate the above with an example, from a feminist perspective, early phenomenographic research missed out on appreciating (a) women's participation as both researchers and participants in research; (b) consideration of the gendered construction of knowledge as a source of variation in phenomenographic research, and in the construction of dominant discourses within the fields in which phenomenography is applied; and (c) acknowledgement of the role of emotions in guiding, distorting, or manipulating the processes of reasoning (Hazel, Conrad & Martin, 1997).

Säljö (1997) strongly believes that conceptions cannot be seen as limited to the relation between the individual and a particular phenomenon and that conceptions are not formed solely from experience, as they are grounded in discursive practices and gain meaning from their positioning within systematic discourses. Säljö's (1997)

view which suggests a dualistic ontology is predicated on the assumption that the elements of language, or discursive and social practices, pre-suppose experience. The position which Marton (1995) takes is that of a non-dualistic ontology, where these elements are dialectically intertwined. If a non-dualistic ontology is recognised, one should accept that conceptions are constructed through the relationship between the individual, phenomenon, and context (Ekeblad & Bond, 1994). A framework was presented by both Marton and Pong (2005), in which the formation of conceptions can be explained based on particular types of experiences, within specific concepts. Marton (1995) and Säljö (1997) commonly agreed that an individual's way of experiencing reality, and consequently their behaviour is shaped by the way something is conceptualised or talked about by that individual: “Stories we hear and tell will become stories we live” (Säljö, 1997, pg 184). Marton and Pong (2005) suggests that what needs to be clarified and established is how conceptions that are not indicated but essential to the understanding of a specific context differs from generalised conceptions that students can logically separate from the specific context.

In this study, I have addressed this issue by recognising the context referred to by the interviewees as they share their stories. In doing this, I have not separated the context but instead gave recognition that the interview subjects’ context was relevant to make the connection to the conception.

c) concerns raised about the results and approach of phenomenographic research raised from post-structural and critical perspectives

The third area where criticisms come from are those that have been informed by post-structural and critical theories. Webb’s (1997a) critique about the assumption that discovery of categories, such as deep and surface learning, provides some insights about phenomena in the world. Webb (1997a) argues that phenomena have no meaning of themselves. Instead, their meaning is created through a process Derrida calls 'differance'. As such, the conceptions stated are the product of spatially and historically situated discourse. Webb (1997b) asserts that such endeavours to

empirically corroborate phenomenographic results amount to “a community of scholars, working within a common set of assumptions, which inform research questions … these are the (hermeneutical) 'prejudices' which guide expectations” (pg 227). The justification against a post-modernist deconstruction of phenomenographic results is that the findings, whether constituted from an absolute reality or discourse, are easily understood and have universal value (Entwistle, 1997b). The phenomenographic approach has produced powerful and simple descriptions to convey complex pedagogical principles that are readily accessible. Entwistle (1997b) asserts that the results produced through the phenomenographic approach meets one of the strongest tests of value in qualitative research, in which the findings describe a 'recognisable reality'. Critically, phenomenographers have been advised to take note of how their research 'discoveries' may simply continue the power relations in how truth claims are authenticated.

d) partisan development and inaccessibility of phenomenography

The final criticism that has been highlighted, relates to the notion of phenomenography being too exclusive. At universities in Australia, Sweden and China, there has been some criticism against some phenomenographic research and writing for its bias towards localised defenders of theory and methodology development (Garcez, 2005). This is often made with reference to less widely available books, dissertations, and conference presentations from these universities with scarce reference being given to major pertinent thinkers in a relevant field such as teaching and learning (Garcez, 2005). For instance, Åkerlind (2005b) asserts that phenomenographic analysis providing “explicit delineations of dimensions of variation is still largely confined to research theses and conference papers” (pg 127). This has limited the use of phenomenography to individuals who are able to plan for a type of apprenticeship with an experienced phenomenographic researcher in one of the phenomenographic activity centres (Bowden and Green, 2005). Having said that, this is also changing, due to how other fields are also adopting the phenomenographic method (e.g. Barnard et al., 1999), and achieving more

international representation among phenomenographic publications. To illustrate this spread and growth outside of phenomenography centres in Sweden, China, Australia and the United Kingdom, the EARLI SIG 9 Conference held in August 2012 in Jönköping, included presentations from Canada, the USA, Germany, South Africa, Estonia, and Finland.

My own view on this is somewhat different. As an upcoming researcher who is in the process of completing my doctoral studies, I strongly believe that the role of researchers is to explore ways to present the exclusive research methods in cross disciplinary publications, so as to promote to a wider academic audience on how the chosen research methods or research question being addressed is relatable to a wider research community. In my case, conducting a study adopting such an underused research method like phenomenography in outdoor education research in Singapore, I strongly believe that I am in a good position to spread the awareness of the approach through a practice community (Wenger, 1998) of outdoor education researchers.

3.5 Sampling procedure

Choosing an effective method for selecting the most appropriate participants is dependent on the purpose of the study, and this is particularly so in qualitative research (Krahn & Putnam, 2003). As the goals of quantitative and qualitative studies differ, their sampling methods would differ as well. Probabilistic random sampling methods are favoured in quantitative research, allowing researchers to approximate the proper sample size prior to initiating research in order to accomplish a desired level of statistical power during analysis (Suresh & Chandrashekara, 2012). Such probability sampling techniques are not suitable for qualitative research because as Marshall (1996) suggests: (a) the small sample generally used in qualitative research will generate an equivalent volume of data to a large quantitative sample, but deviates from normal distribution theory due its small size; (b) there is no evidence that beliefs, perspective, attitudes and the other phenomena studied in qualitative research are normally distributed in the population; (c) the characteristics under

investigation are not explicitly defined before completing a qualitative study; and (d) choosing respondents who will provide rich meaningful descriptions is accomplished more effectively purposefully than randomly.

Purposeful sampling is commonly used in phenomenography, like other qualitative research methods. This approach emphasises gaining in-depth understanding and provides for the selection of 'information-rich cases' with the potential of producing significant amounts of relevant data to the research investigation (Patton, 2002, pg 46). For this reason, the identification of respondents for the open-ended survey questions and interviewees in phenomenographic studies is deliberately non-random as this is influenced by the specific phenomenon that is being explored (Åkerlind, 2005; Booth, 1997; Francis, 1996; Marton, 1986). The idea is to select a sample that is made up of people with as many potential understandings or experiences of the phenomenon as feasible. For this reason, as much variation as possible in the demographic profile should be included in the sample, but the sample profile need not be demographically representative of the population, instead it is expected that the range of meanings within the sample will be representative of the range of meanings within the population (Åkerlind, 2005b). To reduce the effect of the researcher's preconceived notions, Ashworth and Lucas (2000) suggests that "the selection of participants should avoid presuppositions about the nature of the phenomenon or the nature of conceptions held by particular 'types' of individual while observing common-sense precautions about maintaining 'variety' of experience" (pg 301).

Besides sampling technique, the sample size is an important consideration. Baker and Edwards (2012) assert that determining in advance the appropriate number of participants to include depends on the epistemological, methodological, and pragmatic realities of each specific study. For instance, studies that aim for rich descriptions of uniqueness require fewer participants than those concentrating on analysing similarities and differences. Studies that follow an iterative sampling procedure till saturation can begin with smaller targets than those following a more direct collect-then-analyse approach. The amount of time and number of

commitments that afford the researcher would also limit the number of study subjects the researcher can practically include. Eventually, it is important to be aware of the expectations and criteria set within the epistemic community in which the research is positioned and aim for "what constitutes excellence rather than adequacy in your field" (Charmaz, cited in Baker & Edwards, 2012).

An absolute minimum of 10 study subjects has been suggested in phenomenography. Between 15 to 20 study subjects is deemed sufficient to reveal most of the possible variation in conceptions and allow for defensible analysis and interpretation. Still, more than 30 can make managing data during analysis difficult (Ashwin, 2006; Bowden, 2005; Larsson & Holström, 2007; Trigwell, 2000). Elliott (2012) suggests that as absolute sample size criteria have a limited heuristic value, thought should also be given to how much data is collected from each respondent, the research setting and quality of the data such as the depth, duration, and robustness of participant interaction. Engaging, earnest conversations exemplified by searching probes and intended cross-checks require fewer study subjects than on-line surveys utilising open-ended review requests. Correspondingly, a longitudinal design that incorporates prolonged engagement over developmentally varying exposure to a phenomenon will require many fewer subjects in comparison to a study measuring a snapshot of conceptions among a collectivistic, homogeneous sample with strong social norms and communal discourse. The researcher's ability to explore a variety of meaning, as well as contested or silent spaces of the subject's experience contributes to data saturation that can be achieved within a given sample size.

The purposive sampling for data collection for my study is targeted at Secondary Three teachers from 156 secondary schools (Ministry of Education, 2014) and outdoor practitioners from outdoor learning companies in Singapore. One of the considerations for the selection of sample profile in a phenomenographic study is based upon their appropriateness to the purpose of the research study, that is, they have experience of the phenomenon being explored. The rationale for selecting Secondary Three teachers is due to the observation that they are usually the teachers who send their secondary three level students for outdoor camp experience, hence

any attempt to engage with teachers on issues about outdoor education would be appropriate with this level of teachers who have direct experience of engaging with the phenomenon (outdoor education) being explored. For the outdoor education companies, as the nature of their work is bringing outdoor and adventure programmes to their clients, which includes students from the local national schools, as well as other diverse populations, investigating their perspective on the research questions was seen to be useful in contributing to the cultural constructions of outdoor education in Singapore. For this group, data collection was done online by posting on the social media site of the Outdoor Education Association (Singapore), and the online interest group 'We are Practitioners, Not Vendors' (Facebook, 2015). An online survey questionnaire was administered to obtain as many outdoor companies' and practitioners' response as possible.

3.6 Participant characteristics

The sample of this study came from different secondary schools and outdoor education companies across in Singapore. Comprehensive demographic details are not shared as they are not relevant and pose an ethical risk. The discussion on ethical consideration is discussed in section 3.10 in this chapter. In phenomenography, the categories of description formed are representative of collective meanings. As particular conceptions cannot be attributed to a particular study subject, such detailed descriptions of individuals are not of value. Bowden (2005) and Thompson and Chambers (2012) argue that since raw data extracts are used extensively throughout in the findings, by including more detailed demographic information, it invariably increases individual's susceptibility to being identified, violating their ethical right to privacy. Essential information provided for the above should be adequate to make judgements about transferability.

As Åkerlind (2005b) suggests "the quality of the final research outcomes starts with the quality of the data collected" (pg 109), the data generation phase of a phenomenographic study is critically important. The data collection method is

selected based on the phenomenon and setting of the study, but Ashworth and Lucas (2000) suggests that it should be "as open a technique for eliciting experience as possible" (pg 302). In phenomenographic research, there are several forms in which data can be represented, such as historical documents, open-ended items in self-report questionnaires, focus group discussions, semi-structured individual interviews, drawings, email or on-line communications, photographs, video recordings, and observation. Undoubtedly, the most common is semi-structured in-depth interviews (Bruce, 1998; Edwards, 2007, Marton, 1994). Individual, open-ended items in self-report questionnaires and semi-structured interviews were used to generate data in this study.

To target the specific demographic profile for this study, a survey of open-ended questions was administered to all secondary three teachers (both PE and non-PE teachers) and outdoor practitioners. In the survey, voluntary participation in an in-depth interview was provided as an option for follow up from the survey questions. The purpose for these two methods was to allow for deeper illustrative accounts of the variations that respondents express in relation to the phenomenon.

3.7 Administration of survey questionnaire

The survey was developed and administered online by myself using the Google form. As internet access is convenient and widespread in Singapore (internet penetration rate in Singapore at 82%, see Figure 3.3 by Hootsuite, 2017), this is the main reason why the online approach was taken. It was also to improve the response rate as many had convenient access to mobile internet.

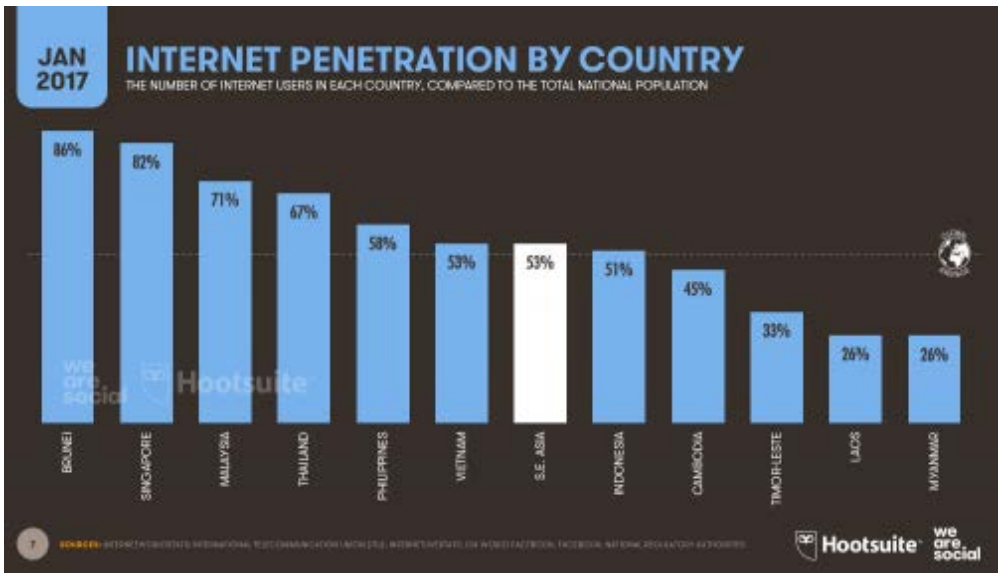

Figure 3.3: Internet penetration by country (Hootsuite, 2017)

The questionnaire provided an option for respondents to indicate if they would like to be contacted for face-to-face interviews. Before launching the formal online open-ended survey questions, I tried to conduct a pilot of the online questionnaire.

As all research study requiring participation of Singapore national school teachers must be formally approved by the Data Administration unit of the Ministry of Education (MOE), I was mindful that, following MOE approval, I had to write to the School Principal for their support to encourage their teachers to participate in the pilot. I realised that this pilot study would impact on my timeline. Instead of pursuing this, I conducted a pilot with three school teachers, whom I had worked with previously at Outward Bound Singapore. One is a physical education teacher at a secondary school, and the other 2 are teachers at the Republic Polytechnic who teach outdoor education. I did reflect on the point that the selection of profile of teachers for the pilot is bias and may have impacted the decision of questions used in the online questionnaire. However, on reflection, I recognised that the questions asked were general in nature that was aimed at enabling teachers and practitioners to respond without any jargon introduced. The purpose of the pilot is to enable feedback on the chosen open-ended questions in the survey (see Appendix 1 and Appendix 2). Minor amendments were made to the wording of some questions as a

result. The returns from this pilot resulted in minor amendments being made to the wording of some questions. Once this was in place, I prepared a proposal and sent it to the Data Administration unit in MOE for their consent to approach school Principals to support the voluntary participation of teachers in their schools (see Appendix 3). The invitation email was initially planned to be sent to 50% of the secondary schools first, and then to proceed to email to the next batch of schools only after establishing that the number of respondents from the first batch was insufficient to meet the required sample size (40) which this study was seeking to target. The following process was adopted when requesting participation from schools:

1. Email all 156 secondary school Principals after obtaining MOE's approval for data collection.

2. The email provided a brief overview of the study and sought the Principal's consent to allow their secondary three teachers to participate in an online questionnaire.

3. This email to the Principal will further contain an appended note/email message to the secondary three teachers, reminding them that their participation is voluntary, and containing the link to the online survey.

4. The Principal will disseminate this note/appended email to the secondary three teachers should he or she be agreeable to have his/her school participate in the study.

Several school Principals replied that they were unable to support this request for their teachers to participate because their teachers are involved in other research projects. Despite reaching out to the Principals of all 156 secondary school in Singapore and posting to Facebook to invite outdoor practitioners, only 12 schools with 19 teachers and 14 outdoor practitioners responded to the online questionnaire. This made up a total of 33 respondents. From that pool of respondents, 11 agreed to be interviewed. Therefore, for the analysis, data is drawn from the 11 study subjects who contributed to both the online survey questionnaire

and the rich interview data. The 11 study subjects in this study consisted of six Secondary Three school teachers and five outdoor practitioners. Of these 11, eight were male (four male school teachers and four male outdoor practitioners), and three were female (two female school teachers and one female outdoor practitioner). Upon reflection on this, I strongly believe that this may influence my study as only the keen and willing ones have come forward to have their views heard.

In the following sections, the important features of phenomenographic interviews that were used to guide the data generation procedures in this study are described, followed by an explanation of the process of recording and storing of interviews.

3.8 Important qualities for semi-structured interviews used for data generation

The design of the phenomenographic interview questions (see Appendix 6 for school teachers' and Appendix 7 for outdoor practitioners' interview schedule) were formulated after the online survey responses were gathered. The interview questions were developed to cover personal experiences and professional context based on the literature review on beliefs of school teachers and outdoor practitioners from sections in 2.6.2 and 2.7 respectively. The interview questions were designed to provide further elaboration of the participants' responses to three online survey questions (Question 7. What are your beliefs about the value of outdoor education for students? Why do you say so? Question 8. What are your beliefs about the value of outdoor education to the school curriculum? Why do you say so? and Question 9. Describe what influences your beliefs about outdoor education? See Appendix 1 and 2 for school teachers' survey and outdoor practitioners' survey respectively).

I took guidance from Åkerlind (2005b) and Bowden (2000) in deriving the primary interview questions which should follow any of these three forms: (a) situated examples, which are questions that elicit descriptions of concrete examples of the participant's experience with the phenomenon, (b) problem questions, which

present problems in the field under study designed to be diagnostic and reveal different ways of understanding and relating to the phenomenon and (c) questions can take the form of a general, open-ended question structured in the form “what is X?”, followed by clarifying and probing questions based on initial responses. I was also guided by the literature review on teachers’ beliefs to structure opening contextual interview questions as suggested by Åkerlind (2005b), to create a relaxed and comfortable atmosphere in which participants can reflect on their experience or understanding of a phenomenon and provide a natural transition to primary questions (see Appendix 6 and 7, Question 1. What are your early encounters of outdoor education and when did this occur?). This was followed later by a question about any social-historical event that may have had an influence on their beliefs (taken from literature on teacher beliefs) and proceed to the range of questions about the professional context and its influence on their beliefs about the value of outdoor education.

As stated in earlier sections, of the 33 respondents to the open-ended online survey questionnaire (19 school teachers and 14 outdoor practitioners), 11 agreed to be interviewed. An interview roster was drawn up to decide with them on location and time where the interview will be conducted. I gave three options for the school teachers and outdoor practitioners to decide on the location of the interview – first, the choice of having the interview at their workplace, to minimise the inconvenience of travelling out of their workplace; second, the choice to travel to my educational institution, away from their workplace if they felt they wanted to be away from the workplace for such an interview, if that meant to be an important consideration; and third, an outside location, such as a café (Starbucks) which were found easily in many parts of the tiny Singapore island, if that was a more neutral location for the study subjects. For the interviews that took place in the subject’s workplace, or at my educational institution, they were conducted in an isolated room, doors closed. As it is well understood that phenomenographic interviews are often experienced as challenging and uncomfortable by study subjects (Åkerlind, 2005; Bowden, 2005;

Marton & Booth, 1997; Trigwell, 2000), several steps were taken where I sought to develop rapport and ensure the study subjects were comfortable and trusted me and the process enough to provide frank responses. In terms of the setting I provided each subject water and encouraged them to hydrate while we chatted and positioned the seats in a 'non-threatening' alignment allowing participants to choose whether they wanted to sit alongside me or at a perpendicular angle along the table. In the case of the interview at the external café location of Starbucks, the seat position available was for the two of us to be seated opposite to each other. At some workplace like the teacher's school, I made do with wherever the school teacher was able to locate an empty quiet room, so some of the above configurations of seating were not adopted. As much as possible, I tried to provide a seating arrangement that the teacher was comfortable and agreeable to. Once we had taken our seats, I usually started the interview by thanking them for agreeing to be interviewed, and then continued with a casual chat explaining the purpose of the interview, their participation in it, and distanced myself from their institution/company in the sense that it was not one of their supervisors or the institution/company trying to find out how they felt.

3.8.1 The interview

During this initial encounter, I contextualised the interview as a conversation initiated out of my interest about their belief in the value of outdoor education, given they are in a position where they had experienced organising, conducting and overseeing such experiences during their work. As such, I assured them that I was genuinely interested to hear what their experiences were and that there were no right, wrong or preferred responses to be expected in this interview. I also mentioned that all names of individuals and institutions they belonged to would be de-identified in the final thesis report of this study, and to obtain accuracy of the interview data, the interview would be audio recorded and if they were agreeable. I informed them that I would be using two sets of digital voice recorder to position at two different locations at the mid-point between them and myself to ensure that the full recording

of the interview is captured by the two devices, so I could refer to both during transcription. Two recordings provided security as it gave a full back up recording and ensured that if any part of the recording was poor, I could refer to the other device to check for clarity. Once these had been covered and established with the study subjects, I commenced the interview proper. The focused discussion began with a general question asking what their early encounters of an outdoor experience were and when this happened. Their initial responses were then expanded upon and probed. As the interview progressed, with the list of questions prepared (see Appendix 6 and Appendix 7), I was flexible in my approach and adapted the schedule to suit the nature of the discussion. This approach allowed all areas to be covered but in a more relaxed manner, which put the interviewee at ease. This is congruent with the suggestion by Miller and Glassner (2004) that the strength of the interview is that it is flexible, dynamic, uses the prime modality people use in their everyday lives to communicate their knowledge and experience, and provides a space in which participants can self-reflexively navigate within and against established or collective narratives.

During the interview, I also asked situated questions in which the subjects were asked to describe events, experiences, activities and components of these that were seen to be valuable, arising from outdoor experiences they found significant for themselves and the participants who underwent the outdoor experience. I felt that the positioning of the digital recording device in the mid-point location was a source of distraction for some subjects, as they were looking at it and wondering if it was recording. Sometimes I sensed that the subjects were not very smooth in their elaboration, for fear that the recording was not capturing their voice, at other times the subjects were oblivious to the recording device. The questions were not always asked using the same words as found in the schedule, as long as the meaning of the question was communicated (Stake, 1995), but all the interviews followed the same basic sequence of primary questions, with follow up questions emerging in reaction to their responses.

The interviews were emotionally and intellectually demanding. It was thought-provoking to attend carefully to the meanings evolving during the discussions, keeping track of ideas and themes articulated while listening to new information, and planning deliberate probes and clarifying the interview questions. I took care not to impose my own ideas or views, which may be to the disadvantage of deep discussions, however I was cautious of spending too much time on a response if I knew this was something I personally valued as I was anxious about how much of the attention to the response correlated with my interest and how much came from the subject. Striking a balance of not favouring personally interesting themes, and not being discerning against them was a constant task. I continually had to ask myself, and sometimes the subject, how their responses influenced their belief and how important an aspect of their description really was to them. I felt drained by the end of three or four interviews, with each interview lasting anything from 30 minutes to sometimes 90 minutes. It was not the duration as I reflected that caused me such a feeling of being drained, but the sheer engagement in a mental conversation exercise that led to such fatigue.

At the end of each interview I would ask whether there was something else the subject wished to share further in any areas or questions before I closed the interview. Occasionally, this resulted in further discussion. When I felt that the topic had been exhausted I would thank the participant for their responses, remind them once again of their ethical rights, and where necessary would spend some time with respondents to discuss their feelings and debrief. In section 3.10 of this chapter, I discuss more about the ethical considerations taken for this study and the approval process obtained for ethics statement. All the subjects were comfortable with what would be shared and were not disturbed that their frank views of authorities were recorded. Some continued to discuss this even after the main interview was completed and I had to assure them that those views would not be recorded in the transcripts. All of the subjects enjoyed discussing their experience, even when it had evoked emotional content, and none expressed any regret or duress for having

participated. All of the subjects were happy that such a study was being conducted as they believed that there were very few people engaged in outdoor education research in Singapore.

Many of them felt that more research should be embarked on to illuminate a cultural understanding of its practices locally and wished me well for my studies. I did not immediately start the process of transcribing the recorded interviews verbatim into a word processing package until I completed all 11 interviews. I conducted all interviews, transcriptions, and data analysis. It was a lot of work, and very time consuming. But this did allow a much deeper and more intimate understanding of the nuanced meanings and contextual triggers not captured in spoken language.

3.8.2 Phenomenography and the analysis

Phenomenography is a research approach that seeks to identify variation in experiences of a phenomenon amongst a sample of a given population. It does not seek to identify common themes but is concerned with differences in the way a phenomenon is experienced. It assumes that such experiences may be depicted by a limited number of qualitatively distinct categories of description (Marton, 1981). As well as identifying different categories or conceptions of a phenomenon, the researcher also seeks to develop an understanding of the meanings of those conceptions and the relationships between them (Entwistle, 1997a). In the phenomenography category formulation, it is accepted that a category of description is not equivalent to the meaning expressed in any one transcript and similarly, the meaning expressed in a transcript is not equivalent to the meaning experienced by the interview participant, because of the context sensitive nature of experience (Åkerlind, Bowden, & Green, 2005). Åkerlind et al (2005) draw our attention to the phenomenographic focus on participants as a collective group, rather than as a series of individuals. This is because in phenomenography, any one transcript is not likely to match exactly with any one category of description, because the categories have been established from an analysis of all of the transcripts, as a group. From this

perspective, no one transcript can be understood in isolation and can only be interpreted in comparison with the rest of the group of transcripts. This important phenomenographic attribute on the focus with the collective experience is aptly captured in a quote by Trigwell (2006):

> The essence of the approach is that it takes a relational qualitative perspective that aims to describe key aspects of variation in the collective experience of phenomena, rather than focusing on individual experience. (pg 367)

Phenomenography is underpinned by the constructivist principle that people create meanings of phenomena. Marton and Booth (1997) wrote about phenomenography to suggest that learning outcomes depend heavily upon aspects of experience that are discerned by the learner and brought into focused attention. It takes a non-dualistic ontology (Åkerlind, 2005a) and so does not seek to compare a 'real world' to a 'subjective world'. The world and the person are understood in terms of "… an internal relation between them" (Marton & Booth, 1997, pg 13). What matters are peoples' perceptions of the truth for them as this guide their practice (Cousin, 2009).

Analysis of results was guided by the phenomenographic approach (Marton & Booth, 1997) and advice for the new phenomenographic researcher (Åkerlind, 2005a, Åkerlind et al., 2005; Cousin, 2009). As observed by Åkerlind et al. (2005), there were generally no *a priori* categories or structural relationships defined in advance at the start of phenomenographical analysis. This involved the development of a set of related categories from the data obtained through the collective response of the participants, or the "pool of meaning" (Marton & Booth, 1997, pg 133). This necessitated selecting component of the transcripts relevant to the phenomenon, identifying qualitative aspects of variation, locating logical and hierarchical relations between the categories, drawing on empirical evidence to support this, and formulating an outcome space. I found myself having to confront the decision on how to make the data manageable. I approached this in a number of ways: (a) examining the data from different perspectives at different times following an iterative process (Bowden & Walsh, 2000); (b) starting the analysis with a smaller subset of the data,

and elaborate and test the initial categories using the remainder of the data (Prosser, 2000); (c) extracting excerpts from the interviews that exemplify meanings and approaches to the phenomenon, and combining this into a pool of meanings that excludes irrelevant details contained in the original dataset (Svennson & Theman, 1983); (d) using just enough participants to ensure sufficient variation, but not too much to be unmanageable (Trigwell, 2000); and (e) making notes summarising the main understandings contained within interviews that can be used initially, then later switch to using the transcripts to confirm categories, moving backwards and forwards between the two (Åkerlind, 2005a).

An attempt was made to be parsimonious, yielding as limited a number of categories of description as was feasible, whilst capturing the important conceptions that were expressed. To achieve this, a combined iterative and spatial approach was used. Following an initial reading of transcripts, the iterative technique necessitated re-reads, scrutinising and categorising of the data. After annotating the transcripts, they were organised to enable the development of several data categories, each of these appearing to show qualitatively different experiences. As data analysis reached a more advanced level, it transpired that not all of these sections actually were qualitatively different, so sections were combined, and some data disposed of, until a set of qualitatively distinct categories remained, and a state of 'analytic closure' (Åkerlind, 2005b) was reached. Åkerlind (2005a) advocates for iterating between attending to structure and meaning concurrently during the analysis. She feels this is more in line with the epistemological underpinning of looking at the collective understanding of phenomena holistically as it increases the potential for practical applications from the results and provides a simultaneous focus on both variation and commonality in the data. Ultimately one's choice between these alternatives is likely to be influenced by whether researchers are oriented towards an empirical approach or maximising the logic and 'neatness' of results. These conceptions are presented and explored in Chapter 4.

3.9 Quality and rigour in phenomenographic research

Collier-Reed et al (2009) refer to Lincoln and Guba's (1985) concepts of credibility, dependability, confirmability, and transferability as a suitable framework relevant to phenomenographic research and elaborated on these concepts within a phenomenographic context. Grossman (2002) preferred Smith's (1998) concepts of reflexivity, transparency, moral reasoning, and persuasiveness over other frameworks. As I see that there is a fair amount of overlap in these frameworks, I have chosen to discuss the quality and rigour of this research using the concepts of credibility, dependability, transferability and reflexivity.

3.9.1 Credibility

Lincoln and Guba (1988, pg 296) state that the credibility of qualitative research first depends on demonstrating that the research was carried out in an appropriate manner. The heterogenous nature of qualitative research requires that the researcher be rigorous in preparation, execution, and presentation of the methods and methodology employed (Polkinghorne, 1989; Stake, 1995). Presenting an account of the philosophical basis and research methods employed provides the information required for the reader to judge the appropriateness of the interpretations and recommendations made (Patterson et al., 1998). I have addressed this by detailing each aspect of the research design and process in previous sections of this chapter.

Credibility is also concerned with the defensibility of analyses made from the data, and the rigour of the process by which findings have been reached. In the analysis, I used significant extracts of primary interview data extracts to establish credibility for defending claims presented in Chapter 4 ‘Research Analysis and Finding’ to demonstrate the source and development of my interpretations. The use of direct quotations from the data allows the reader to develop a feel for context and overall meaning as well as to understand the relevance of a specific point.

3.9.2 Dependability

Dependability refers to the consistency of research findings and reflects on the quality and appropriateness of the research process. Consistency is an idea that needs to be approached thoughtfully within phenomenographic research because phenomenography is grounded on the basis that people's conceptions are influenced by their experience with a phenomenon in a particular context. Due to this, one cannot expect categories of description to remain unchanging over time, readily available for replication studies to re-discover them again and again. However, Entwistle (1997a) claims that they may reflect approaches to a phenomenon that are persistent to changes in context and history. As phenomenography assumes that people, including researchers, experience phenomena in a limited number of qualitatively different ways, it cannot be expected that different researchers studying the same phenomenon come up with the same conceptions (Cope, 2002). Marton (1986) draws a parallel between the phenomenographic research process and the process of exploration or discovery, where by their nature, discoveries cannot be replicated. Placed in a field of data, two researchers would focus on different aspects in the process of discovery and notwithstanding the divergence, both discoveries could be valuable, and both could be seen to do justice to the phenomenon. Variation in exploratory findings is not rare in constructionist approaches to research. Marton (1986) similarly echoes that expecting replication is inappropriate, but it should be possible to confirm original findings. The approach that has been widely practised by various phenomenographers is by following a confirmatory process of evaluating the suitability of new data in different contexts to previously discovered categories of description (Collier-Reed et al., 2009).

Several authors have suggested having co-judges do a holistic analysis and performing coder reliability checks, dialogic reliability checks, and interpretive awareness (Åkerlind, 2012; Marton, 1995; Ryan, 2000; Saljo, 1988; Sandberg, 1997) for gauging the dependability of phenomenographic research. In the present study coder-reliability and dialogic approaches were not feasible because given that this is

a thesis in submission for my Doctor in Education, it was inappropriate to have co-researchers. Hence, the approach of interpretive awareness was adopted, and care was taken to reflect on practice right from the initial phases when this study was conceptualised, through to analysis and presentation of the results. Some of the reflexive practice considerations are presented next.

3.9.3 Reflexivity

It is argued that the principal researcher's background, scholarly knowledge, and personal experience of the phenomenon under investigation should be disclosed and forms an important component of the evaluation of the quality of the research (Cope, 2002). As this section is about my qualities, as well as how I had made decisions on interpretation, I will take a personal style to convey this, hopefully heightening the reader's ability to understand and appraise my own reflexivity. It feels odd to write this, but it is intended to allow readers to get to know something about me and my worldviews, and how this relates to my study.

I am everything to my dear wife and father to three boys who are maturing at their own life crossroads of 20 years, 19 years, and 13 years; son in law to my mother in law, who is coping with the demise of her husband a year now (which is one of the reasons for extending the submission date for my thesis), and a brother to my two brothers and a sister who is also just recovering from a recent early stage breast cancer. In addition, I am ever a grateful son to my father and mother who occupy a special place in my life, even though they are no longer around, as well as my brother in law who is also a special person for the person I am now, due to the event in my life to accept me to be the husband to my wife. I feel it is relevant to mention this, as these are significant to shape me to be who I am. I am also a management staff in the staff development unit in a government Polytechnic, an institution of higher learning. People know me as a passionate person about the things that I get myself into, and someone who is patient, and interested to understand rather than to be understood and I am devoted to being nurturing, to see the better side of people. I

have taught and have a fair depth of knowledge in a wide range of subjects including cognitive processes and problem solving, environmental education, adventure education, learner centred teaching and peer coaching. This diversity extends to my personal life as well. I love physical recreation like walking, swimming, biking, - and though I am preoccupied with family and work, I have deliberately made time for them. I consider myself a practising Muslim, seeking to strengthen this aspect of my life and enduring connection to God. I have grown up admiring the beauty and majesty of nature and always felt a strong affinity for nature and its connection to a higher being which is responsible for all the things that happen in our lives. A very big part of this spirituality is formed from my time in the mountains in Malaysia when I was a Boy Scout, embraced by nature, in the solitude of relating to the source that connects everything. It was these experiences and passion that led me to take the opportunity and devote my entire adult life to being involved in outdoor education since 1990. It was not until in 1990, when I joined the Outward Bound movement in Singapore that it dawned on me that a term such as outdoor education existed. Suddenly all the jigsaw pieces fell in place and made sense for me. I delved deeply to read furiously about the recipe in the outdoors that was offered as one way of understanding what was happening in the outdoor experiences, and also the role of the outdoor instructor in the Outward Bound process (Walsh & Golins, 1976). So, it was not difficult that when the time came to pursue doctoral studies I naturally chose to research in the field of outdoor education.

My personal, theoretical and practical background seemed to relate most strongly with two segments of my research: data generation and data analysis. When data was being generated, I was deeply aware of my inexperience in phenomenographic interviewing. While I had previous experience in research projects as a co-principal investigator or as a member conducted interviews in large qualitative studies before, I knew that my approach had to be somewhat different as I was now seeking to discern different ways of the subjects' experiences. To the best of my ability, I applied what I had read to get the study subjects to recollect their own experience, rather

than painting the picture suggestive of a strongly coached school discourse or allowing my own views of outdoor education to over-ride their freedom of expression. My own assessment was that I did my best to carry out what was needed, the quality of data is acceptable, but I am sure I could have done even better in carrying out this phenomenographic research. I discuss this in Chapter 5 to present some of the limitations which I have observed as a reflection on this study. As I have written before, conducting the interviews was a draining affair, in comparison with any previous qualitative research interviews I had conducted, and after about three to four interviews, I really had to be self-disciplined to remain focused, think on my feet, come up with empathetic and yet challenging responses, and get as close to the subjects' understanding and conception of their narrative as is possible through the interview dialogue. I discovered that it was more during analysis that I experienced struggles relating to managing the influence my own knowledge, theoretical orientation, and expectations and desires for the study, would have on my findings.

During the first stages of analysis, while I was immersing myself in the recordings and transcripts, and trying to identify utterances that would capture the meaning respondents' experiences held for them, as I had explained in section 3.8.2, I sensed my knowledge of literature and my own personal experience regarding outdoor education unavoidably informed and intruded my engagement with the data, even though I conducted the literature review after the analysis was completed as suggested by Ashworth and Lucas (1998). I am truly aware that my "own lenses and conceptual networks" (Kelle, 1997) were, of course, unavoidably brought to the work, so the above was my struggle.

I would associate the descriptions given by the subjects with particular representations, models, or similar experiences from outdoor education literature that I was familiar, or my own experience. Though I felt that this was not disturbing the process of identifying meaningful utterances, however, when it came to organising and differentiating utterances, and form tentative categories, I constantly

realised categories that fit well with the literature. This was a frustration for me, as I wanted my study process to be free of such connections, to extend the breadth and depth of knowledge in the field, not reproduce it. In addition, I was very aware of the enticement and prospect to direct the data, rather than let patterns naturally emerge from the data. I struggled with this process, aware that whenever reading the text meanings would be construed and meaning given based on existing semantic configurations, that the synthesis processes that sort, structure and give meaning to our sensations are beyond our control or power to make our own choices or decisions.

At the same time, I was cautious of associating data to previously learned typologies or models. I was particularly wary not to simply reproduce my initial analysis, but to implement all I had tried to make sense of the key ideas of phenomenography. I found myself espousing a sceptical approach to categories that instinctively and hypothetically made sense to me the moment the connections in my semantic configurations ignited. I kept searching for something different, something that would push the borders. Being aware of this sentiments within me, I would temporarily stay away from further analysis, and explore some unrelated work for a time, with the intention to break the mental flow. Though when I came back to the data after the forced break, an emotional and intellectual see-saw would resume. However, this time, I was mindful of not looking for data to fit prevailing knowledge. Simultaneously, I remained thoughtful of denying structure that made empirical and theoretical sense simply because I didn't want it to make sense out of convenience, and because I was looking for that anomaly, the insightful pattern that would extend knowledge and help theorists and educators advance their own knowledge and practice.

In addition to struggling with the intellectual and emotional demands of the work itself, my motivation and attention during this process was diverted by numerous life experiences that impacted me during the study. My father-in-law became a victim of

advanced stages of dementia which sapped the energy of my household, and eventually he passed on due to other complications, all of this happened over an 18-month period. My sister was diagnosed with stage-2 breast cancer recently this year, and as a brother I cannot remove the niggling worry at the back of my mind, having lost my brother-in-law to cancer four years ago. Much as I denied that these had an impact on my emotional state, on reflection, I experienced great emotional turmoil, together with the relapse of my slipped disc surgery, my health was impacted. However, these events were counter-balanced by my strong religious belief, the support of my beloved wife, mother-in-law, my children, especially my youngest son, to whom this endeavour that I began pursuing the Doctor in Education was known as the 'Scotland homework', occasionally asking me how I have progressed on my word-count of "75,000 words" (the maximum wordcount for the thesis which I mentioned to my son), all of whom made it possible for me to complete this work.

3.9.4 Transferability

Phenomenographic results cannot be seen as generalizable across time and context. To this end, Bowden (2005) strongly asserts that "no outcomes from phenomenographic research can be regarded as generalisations or universal statements" (pg 17).

Merriam (1998) contends that external validity "is concerned with the extent to which the findings of one study can be applied to other situations" (pg 85). Since the findings of a qualitative project are specific to a small number of environments and individuals, it is impossible to demonstrate that the findings and conclusions are applicable to other situations and populations. Erlandson et al. (1993) note that many naturalistic inquirers believe that, in practice, even conventional generalisability is never possible as all observations are defined by the specific contexts in which they occur. A contrasting view is offered by Stake (1995) and Denscombe (1998), who suggest that, although each case may be unique, it is also an example within a broader group and, as a result, the prospect of transferability should not be

immediately rejected. There are ways of experiencing a phenomenon in an explicit context, by a particular group of people. Entwistle (1997a) maintains that ways of perceiving a phenomenon could also reflect the reflex discourses of a group of people to exclusive events and social forces operating within their situation at the time of the research.

Effort has been made to make certain that abstract patterns described in this study's theoretical constructs are applicable in other settings, even though their precise content may differ (Auerbach & Silverstein, 2003). As such, the evidence in this research is seen to be of value beyond the context of the study itself and enhances understanding within the field of outdoor education. The goal of this study is not merely to form descriptions of experience relevant solely to this particular group. The categories of description are used to generate principles to inform policy, practice and research that should integrate the efforts towards a larger purpose – in this case, the position of outdoor education as viewed by key actors involved in diverse contexts in the development of citizenry.

As suggested by Tesch (1990, pg 2), research is ultimately a process of persuasion that aims to convince the reader of the robustness of interpretations and claims made. Often, the very specific nature of qualitative research requires careful description of the research design and execution so that the reader is able to make reasonable judgements regarding the researcher's claims and conclusions. The significance of trustworthiness goes beyond the individual study at hand. Other researchers should be able to, as Mishler (1990) suggests, "rely on the concepts, methods and inferences of a study, or tradition of inquiry, as the basis for [their] own theorizing and empirical research" (pg 419). In this section, I have demonstrated that throughout the stages of my research inquiry, I have taken steps to ensure trustworthiness both for the purpose of this study, and as a potential contribution to outdoor education research.

3.10 Ethical considerations

In this section, I discuss the ethical considerations taken which I have mentioned at several parts in earlier sections of this chapter. Ethics in the research process is referred to moral principles, resulting from philosophical theories that are used to make decisions concerning which actions are considered appropriate or inappropriate within the research activity context. According to Thompson and Chambers (2012), there are two main approaches to ethics: (a) consequentialist ethics, which emphasise the importance of achieving good consequences; and (b) deontological ethics, which emphasise the implementation of good actions in accordance with moral rules or duties. These two approaches are not mutually exclusive, as the formation of ethical duties is often based on their consequences - chiefly their effect on the realisation of human potentialities – after which observance to moral rules may be viewed as important to maintain the integrity of the rules themselves (Kelman, 1982). As the researcher in this study, I follow a deontological ethical approach, based on a religious ethic that places moral worth on actions myself, and not merely based on their consequences. For example, while deception may be viewed as ethical from a consequentialist approach, it is not acceptable practice within any religious deontological approach including myself.

Researchers face ethical dilemmas that are often required to entertain contrary sets of actions required by different ethical guidelines. Researchers resolve this by placing priority on specific values over others (Garcia-Serrano, 1994). I have found a set of ethical guidelines offered by Beauchamp and Childress (1989) which are founded on four key principles, to be useful. The principles center on beneficence (the principle of seeking to offer benefits and balance these against risks); non-maleficence (the principle of avoiding harm in any of its forms); respect for autonomy (the principle of advocating individuals' rights to make an autonomous, balanced and informed decision); and justice (the principle of being fair in the allocation of benefits and risks). Kelman (1982) also suggests that matters of governmental or institutional control of ethical issues, should be added to these as an important consideration. My

own reflections considering that the outcome of research is for a greater good of enriching human understanding and improving lives, ethical practice cannot be reduced to just the implementation of professional ethical guidelines, but it is a multifaceted decision-making process that involves consideration of relationships and emotions, reasoned decision, and is informed by ethical guidelines and statutory laws.

Hennick, Hutter and Bailey (2011) remind us that qualitative research methods often require the building of rapport between the participant and researcher to elicit the sharing of participants' experiences and their meanings. The sharing of personal experiences and the reliving of difficult or frustrating memories or events can be problematic - both for the participant and the researcher. So, before any research study begins, evaluation must be made of any risk projected, and the scale of any benefits to participants, and society at large that are expected to accrue because of the study. When assessing risks, the level of potential harm needs to be evaluated, as there are certain degrees of harm that are unacceptable regardless of the benefits of the study. The most commonly considered harm in qualitative research is emotional injury. Study subjects should be empowered to stop the interview should they want to, a procedure which I had included at the start of all my interviews. Thompson and Chambers (2012) recommend that sufficient space should be provided for participants to reduce levels of distress following an interview, obtain additional emotional support if required, and reflect on the process. During the interviews, some subjects often expressed frustration relating to the current mode of outdoor education implementation in school, and the inflexibility of policy guidelines of outdoor education implementation in school or the support that is needed, but not immediately forthcoming. I tried to remain empathic, and helped participants manage any residual emotions at the end of the interview.

Most qualitative research does not expose participants to any direct physical or psychological harm. In the case of phenomenographic interviews, subjects are

required to think about, and articulate their thoughts about a phenomenon in more depth and detail than they may have done before. As a result, the interview could become an uncomfortable experience (Åkerlind, 2005b; Bowden, 2005; Marton & Booth, 1997; Trigwell, 2000). Due to this, it is ethically necessary to provide a pleasant experience as possible for the subjects. In this study, this meant making the atmosphere and environment comfortable and safe (through light refreshments and familiarity of context) as well as through the researcher-participant interaction (remaining friendly and supportive, and spending time with participants after the interview to review their experience and deal with any hidden emotions). An important component of ensuring beneficence and non-maleficence is by respecting the independence of the subjects. This involves empowering study subjects to make a choice whether they would or would not like to participate in research, based on a firm understanding of the nature, objective and consequences of the research and participation therein.

With the consent from the Data Administration unit of the MOE obtained on 22 January 2016 (see Appendix 4), I sent the email to all secondary school Principals (see Appendix 5) which contains the link to the online questionnaire. I also posted an announcement on Facebook to the Singapore outdoor education open group. In those online links, a statement of informed consent was required by willing study subjects to check they have read the terms and nature of this study and understand what is required of them in agreeing to continue with the participation in the online questionnaire response. At the beginning of the interview for the subjects who volunteered to be involved in the interview, I reiterated the aspect of consent and that if they wished to stop, they were free to do so, to reassure the subjects about the strict standards to their consent to the nature of their participation in this study. Of concern in phenomenographic research is in maintaining privacy and confidentiality, given that participants are revealing large amounts of information that relate directly to their identity – their experiences and conceptions. For this reason, Bowden (2005) states that it is common practice that “no published material

ever provides quotes from interviews that could identify the interviewee" (pg 31). In addition to following these controls, I assigned pseudonyms to all participants, which is described in section 4.2 of Chapter 4, and limited the amount of demographic information provided so that anybody who accessed this in the future either available as a journal article or a full thesis, are not aware who did and did not participate in the research.

To end, the final important principle that needs to be recognised is social control. Whenever researchers and study subjects come together to interact, there is a possibility for abuse of power. Due to this, it is imperative that some authoritative body exercises control over ethical concerns. Researchers have an obligation for being reflexive about the role their own ambitions and agendas, as well as political and social discourses they are embedded in, play in influencing the research in any ways. They must also be sensitive to power play between themselves and participants and address likely power imbalances with the study subject community early in the research process. Whenever researchers hold more than the researcher role, there is likelihood for conflicts of interest. It is crucial that researchers are aware of the roles they play, and vitally consider how these effect participants and the research process (Thompson & Chambers, 2012). The most suitable form of control is government regulations. One way in which such control has been established is the requirement for ethical review boards, or institutional review boards (IRB) to convene and take accountability for monitoring the ethical quality of research conducted. This study followed the University of Edinburgh Ethics Committee guidelines.

Chapter 4

Research Analysis and Findings

4.1 Introduction

Earlier chapters have addressed the background for this study, considered literature on outdoor education, phenomenography, teachers' and outdoor practitioners' beliefs concerning the value of outdoor education, and outlined how the research design was implemented to investigate these. This chapter examines the different ways in which the belief on the value of outdoor education are conceived, it explains the categories of description and it discusses the critical aspects that contribute to the variations in belief of the value of outdoor education and the dimensions of variation. This chapter will also answer the second research question related to factors that influence the beliefs of the two actors that are focused in this research – teachers and outdoor practitioners.

On the whole, the interviews were mixed, some subjects were articulate and had reflected deeply on their experiences, while others struggled to relate their feelings and thoughts. For those who struggled to provide depth, I needed to exercise a certain degree of tact, flexibility and patience on my approach, and I strived to maintain a relaxed atmosphere while encouraging the subjects to go deeper into the meaning of those points that they were talking. As the interview progressed onto asking about the initiatives by the Ministry of Education (MOE) in promoting and embracing outdoor education as part of the physical education curriculum, it was apparent that some interview subjects' approach to the topic was framed in opposition to a 'authoritative discourse' of infusing outdoor education as part of physical education, or the form that it is being designed in school, even though I had not expressed for them to view it from that angle during the interviews. This made me reflect about the nature of the questions that I had formed and reinforced to me the various interpretations that respondents could form about the interview questions.

4.2 The analysis procedure adopted in this study

Ashworth and Lucas (2000) called for phenomenographic researchers to clarify important aspects of their methodology so that other researchers can use this approach with increasing effectiveness. Audio recorded interviews and data from the online survey questionnaire provided the data for analysis. In this section, I refer to Table 4.1 to provide the overview phenomenographic investigation of the interview data.

Step 1 **Data Collection**	**Step 2** **Immersion in data**	**Step 3** **Development of categories & dimensions**	**Step 4** **Finalising of outcome space**
a. Devise, trial & revise Interview protocol	*a. Listen to audio interviews & read transcriptions*	*a. Draw up set of meaning statements*	*a. Describe categories in more detail*
b. Select participants, arrange & conduct interviews	*b. Interrogate audio data for gist of responses*	*b. Group meaning statements into themes (categories)*	*b. Delineate categories according to dimensions*
c. Transcribe interviews	*c. Interpret responses for meaning in relation to research question*	*c. Describe categories & propose possible dimensions*	*c. Generate outcome space*
		d. Revisit data to refine categories & dimensions	

Table 4.1: Overview of data collection and analysis for this study

Ashworth and Lucas (1998) suggested that researchers refrain from conducting an extensive literature review until the analysis are completed in order to prevent theoretical notions from influencing the interview procedure and analysis focus. Additionally, researchers are advised strongly to refrain from querying the validity, correctness or inaccuracy of the participant's description of their lifeworld.

Before commencing the analysis, I transcribed verbatim the recorded interviews, capturing the text of the conversation as accurately as possible for analysis. Kvale (2007) contends that the quality of the transcription is an important but often unaddressed element in interview despite being a significant part of the process of interpretation. The challenges to the quality of transcriptions are summarised by Poland (1995) under the following three headings: accidental alterations through mishearing and typographical errors, unavoidable alterations made when transferring from oral to written structure, and deliberate but well-meaning alterations.

I employed several tactics to address these challenges. I listened to the interview recordings several times before transcribing to become familiar with the content. I carried out all the interviews and transcribed all the interviews myself to avoid communication issues arising with the involvement of a third party in interviewing or transcribing. I also felt that since this is my doctoral thesis, I needed to carry out the work on my own even though it was time consuming. Close familiarity with the interviews helped to maintain the context and meanings of the original interaction during transcription (Gibbs, 2007, pg 15).

Once all the interviews had been transcribed, I then went through them again and removed any identifying information from the transcriptions, provided pseudonyms for the participants, and saved these cleaned and anonymous transcripts for use in analysis. The coding system for the pseudonyms that I assigned had these characteristics - OP refers to outdoor practitioner; ST refers to school teacher; M is for male; F is for Female; and the number denotes the order in the list, so 1 is the first in the list. As an example, STF1 refers to school teacher female first in the list.

I only began analysis after all the interviews had been completed and transcribed fully (see Table 4.1, step 1c), in observing the general rule that Bowden (2005) suggest that ‘no analysis should begin before all interviews have been conducted’ (pg

19). I read and re-read the transcripts several times to ensure familiarity with the texts and re-listened to the audio recordings to get a strong sense of the conversation which included nuances, emotional tones, and rhythms of each interview (see Table 4.1 step 2a). While at this stage, I kept in mind what I read of Åkerlind's (2005b) reminder that noteworthy shifts or expressions of emotion or non-verbal communication that can highlight access to the intended meanings of subjects should also be noted. I was mindful of the assertion by Åkerlind et al. (2005) that the analysis starts with a clean slate, and that there are generally no *a priori* categories or structural relationships defined in advance. My point in stating this is to explain that as an inexperienced researcher adopting phenomenographic approach as a novice, I literally followed what the researchers wrote about the steps and guidelines to adopt when using phenomenographic approach. I reflect about this as a limitation in Chapter 5.

One of the first things that I had to decide was how to make the data manageable. I chose to extract excerpts from the interviews that exemplify meanings and approaches to the phenomenon and combined these into a pool of meanings that excludes irrelevant details contained in the original dataset (Svensson & Theman, 1983). I chose to do this as I wanted to try to capture the descriptions of the study subject and understand the meanings they are trying to bring across. I was conscious that this process should not be rushed to allow myself to be able "to slow down and dwell on what is being said and the manner in which it is being said" (Ashworth & Lucas, 2000, pg 304). During this early stage of analysis, I avoided assigning labels or themes as labelling the ideas too early can hamper refinement and further development of categories by restricting meanings to descriptions synonymous with the label initially given (Bowden, 2005). I spent time listening to the interview recordings during these initial stages of analysis, instead of just relying exclusively on the transcript, to immerse myself in the meanings and intentions of the respondents (Ashworth & Lucas, 2000).

Next, I highlighted utterances in the transcripts that seemed to express a particular experience or understanding towards the research questions (see Table 4.1, step 2b, 2c). These utterances were then transferred to a word document where I created a table with three columns, a theme name, description and the quote used to derive the theme (see Table 4.1, step 3a, 3b). Having observed that I had not conducted an extensive literature review before those two stages (interview procedure and analysis focus), I wish to state that my familiarity with the literature and my own personal experience regarding outdoor education inevitably informed what I recognised and the subsequent creation of a theme. Therefore, although the research was carried out principally in an inductive manner whereby themes were developed from the data rather than being established beforehand, my "own lenses and conceptual networks" (Kelle, 1997) were, of course, inevitably brought to the work. The above process certainly is in support of Prosser (2000), who argued that in general, novices to phenomenographic analysis struggle with bracketing their prior knowledge, to produce a coherent set of categories that goes deeper than a 'shopping basket' of categories based on a content analysis. Walsh (2000) indeed suggests that the researcher's ability to bracket his/her own perceptions to get beneath what subjects were talking about, and the numerous ways they were experiencing the phenomenon, not just the diverse ways they talked about it, is the most important skill needed during data analysis. I was very conscious of this and I reminded myself of those considerations at this stage. Iterating through the text numerous times in the process of reconstructing and adjusting the categories is a very significant exercise. I remember reading all the transcripts no less than 10 times. Each time I read to critically search for evidence that challenges the consistency of category descriptions or the differences between two draft categories (Bowden, 2005). I focused these readings on differences that represent variation in underlying meanings and the underlying intentional attitude of the respondent to the phenomenon under investigation (Åkerlind et al., 2005; Prosser, 2000; Trigwell, 2000), instead of being caught up with linguistic variation in the words used.

I went through the transcriptions several times assigning themes, and comparing themes across interviews (see Table 4.1, step 3d). During this stage, and later when structure is being defined, my attention shifted between trying to understand the phenomenon from the subjects' perspective and the meaning of experience by comparing the quotations from the collective experience (Ashworth & Lucas, 2000). From here, I started refining themes by looking at the list in the spreadsheet and trying to find similarities and differences between the themes that had surfaced (see Table 4.1, step 3d). Themes that seemed to overlap in meaning were clustered into categories, and themes that demonstrated qualitatively different ways of expressing the belief of the value of outdoor education were used to distinguish the categories (see Table 4.1, step 4b). This was not a smooth process and I did not anticipate it to be one either.

The categories were then linked with the descriptions discussed by subjects to distinguish more clearly their connection to one another (see Table 4.1, step 4a). Descriptions served as a valuable reference, as they provide an 'objective' reference structure for understanding relationships (see Table 4.1, step 4a, 4c). I transferred the outputs at this stage onto a large sized 'Post It' canvas (see Figure 4.1).

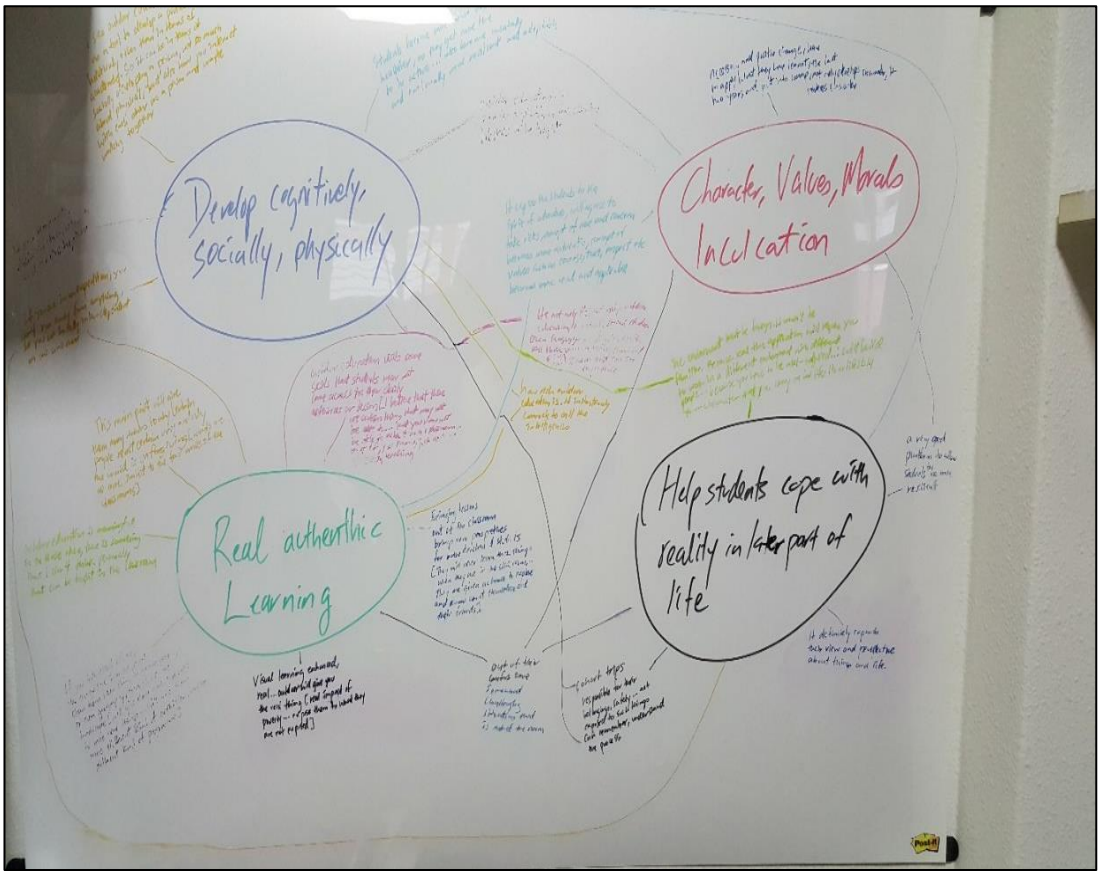

Figure 4.1: Initial phenomenographical analysis

This was very useful as it allowed me to start to reconsider the transcript and review those raw data that I had posted to the categories of description. As it was pinned to the wall in my study room, I could look at it every day each time I came into the room. This served as a point of reflexivity and gave me opportunities to ponder on the entire mapped categories of descriptions. It took me several weeks since I had worked on the data when I had mapped the data onto the canvas. So, I decided to read through all the transcripts once again, making every attempt to look at it with 'fresh' eyes. I transferred this mapping into a Microsoft powerpoint and started working from the original mapping (see first initial phenomenographical analysis using Microsoft powerpoint at Figures 4.2, 4.3, 4.4).

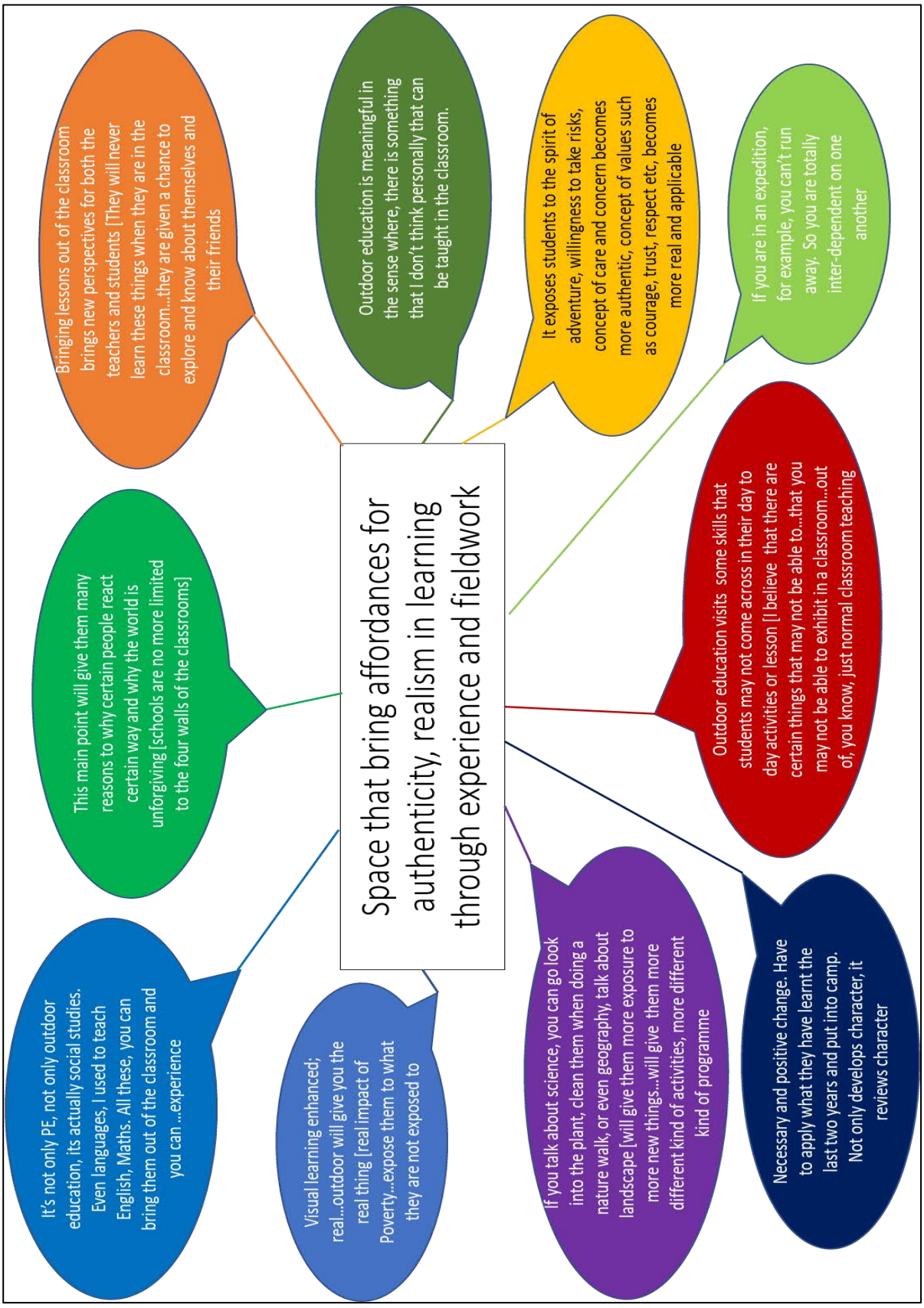

Figure 4.2: Initial phenomenographical analysis using powerpoint

Figure 4.3: Initial phenomenographical analysis using powerpoint

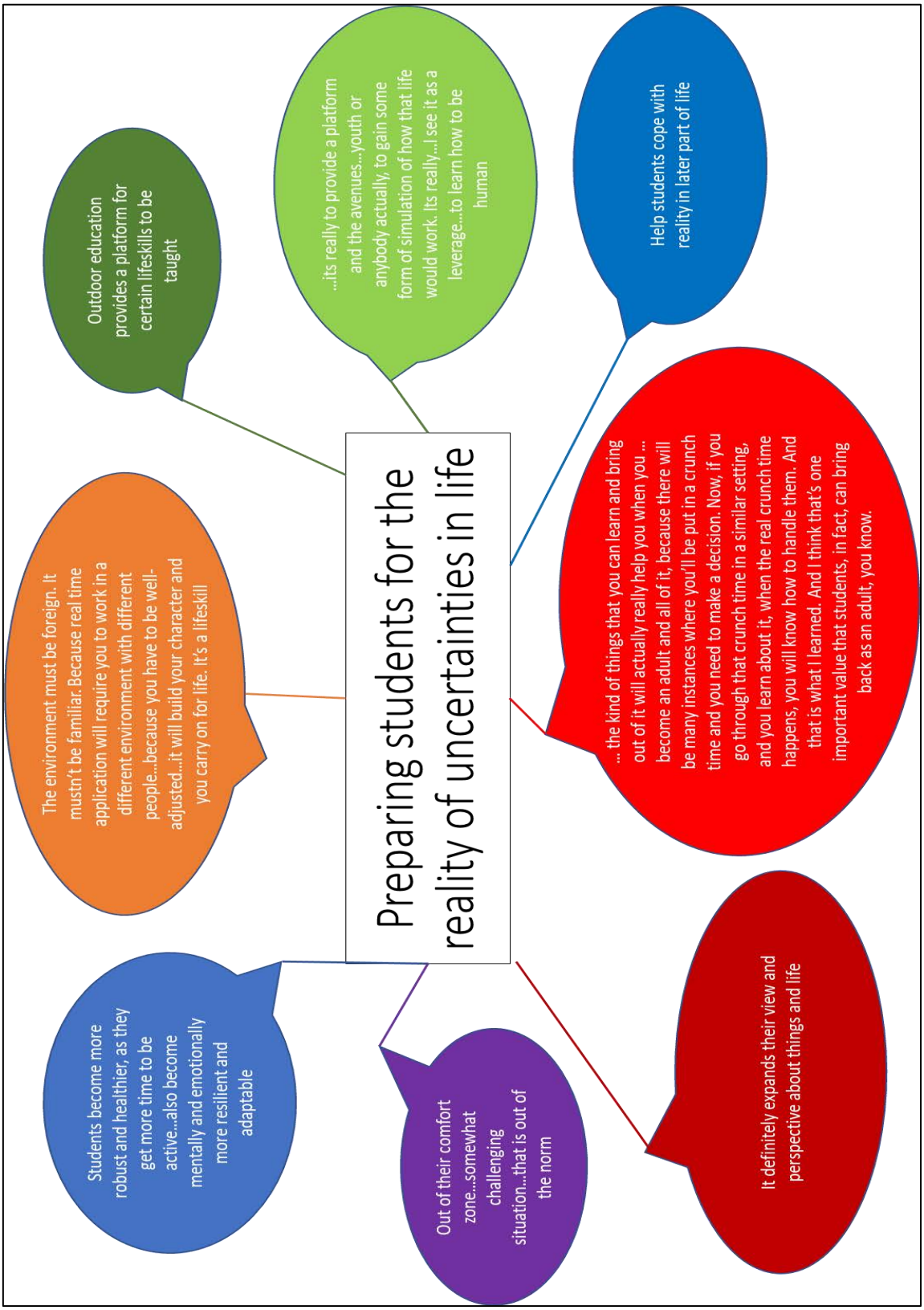

Figure 4.4: Initial phenomenographical analysis using powerpoint

I used this approach extensively so that I could quickly view the evolution of the mapping by referring to the key transcript that was organised in the table in the word document, and insights gained in previous readings and analysis. As I read the transcripts I constantly asked myself, what does this say about how this subject is expressing his/her belief on the value of outdoor education and the examples that they used to illustrate.

Once I had exhausted pooling the data into the distinct groups, I started to look at how the descriptions of experiences gave evidence of different categories of description. I used three different colour highlighters to mark out the pool of data that were grouped in their distinct groupings, as I noted similarities and differences and tried to organise these into tentative categories of description. Throughout this stage in analysing the data, I continued to look for novel interpretations of the data until the basic meaning structure of the subjects' sense making of their reality has been stabilised (Bowden & Walsh, 2000; Sandberg, 1997).

After going through the colour highlights, and actual utterances making up each grouping of a category, I assigned them to a specific theme. I then looked through each of the colour highlights to further understand what attribute emerged from those texts. Associating these with existing categories, and comparing their content served as a process of validation, allowing me to confirm and test the congruence of categories, and refine their meaning. Next, I worked through all the data captured in the table created earlier and tried to identify the relationships between the categories by looking at the dominant attribute that emerged from those texts and assigned them to dimensions of variation that helped to surface the logical relationships between the categories, allowing for me to plot the outcome space. What I was trying to achieve was to clarify both the meanings contained in categories of description [the referential aspect of meaning] and discerning a set of logical relationships between these categories [the structural aspect of meaning] (Åkerlind, 2005a). The structural aspect of meaning is analysed by assessing the dimensions of

variation (I used the term 'dominant attribute' in this case), and themes of expanding awareness in the data. These are recognised by looking for those features of the phenomenon that are mentioned in some descriptions, but not in others, and are significant in distinguishing between nascent categories of description.

Although the process is presented as a sequential series of steps on paper, in practice it is more iterative, with insights and conundrums at each stage leading to revision of earlier stages in a continuous cyclical progress that slowly moves towards stabilisation. I will use an example of initial readings of data to illustrate how the process in Table 4.1 was carried out.

I began by grouping data that had similar ideas together to proceed with step 2c. As illustrated in Figure 4.5, I have grouped a set of data that appeared to me to have similarities in outcome.

Its actually social studies. Even languages, I used to teach English, Maths. All these, you can bring them out of the classroom and you can …experience

It exposes students to the spirit of adventure, willingness to take risks, concept of care and concern becomes more authentic, concept of values such as courage, trust, respect etc becomes more real and applicable

The environment must be foreign. It mustn't be familiar. Because real time application will require you to work in a different environment with different people. It will build your character and you carry on for life. It's a lifeskill

I believe that there are certain things that may not be able to …that you may not be able to exhibit in a classroom, out of, you know just normal classroom teaching

Bringing lessons out of the classroom brings new perspectives for both teachers and students. They will never learn these things when they are in the classroom

Visual learning enhanced; real…outdoor will give you the real thing

Schools are no more limited to the four walls of the classrooms

Figure 4.5: Step 2c. Interpret responses for meaning in relation to research question

Next, I grouped them together in a circular manner side by side to see commonalities for initial theme assigning (see Fig 4.6).

Figure 4.6: Step 3b. Group meaning statements into themes (categories)

The next iterative step in the analysis process resulted in revisiting data and the texts to understand the dominant attribute, to contribute to the dimensions of variation.

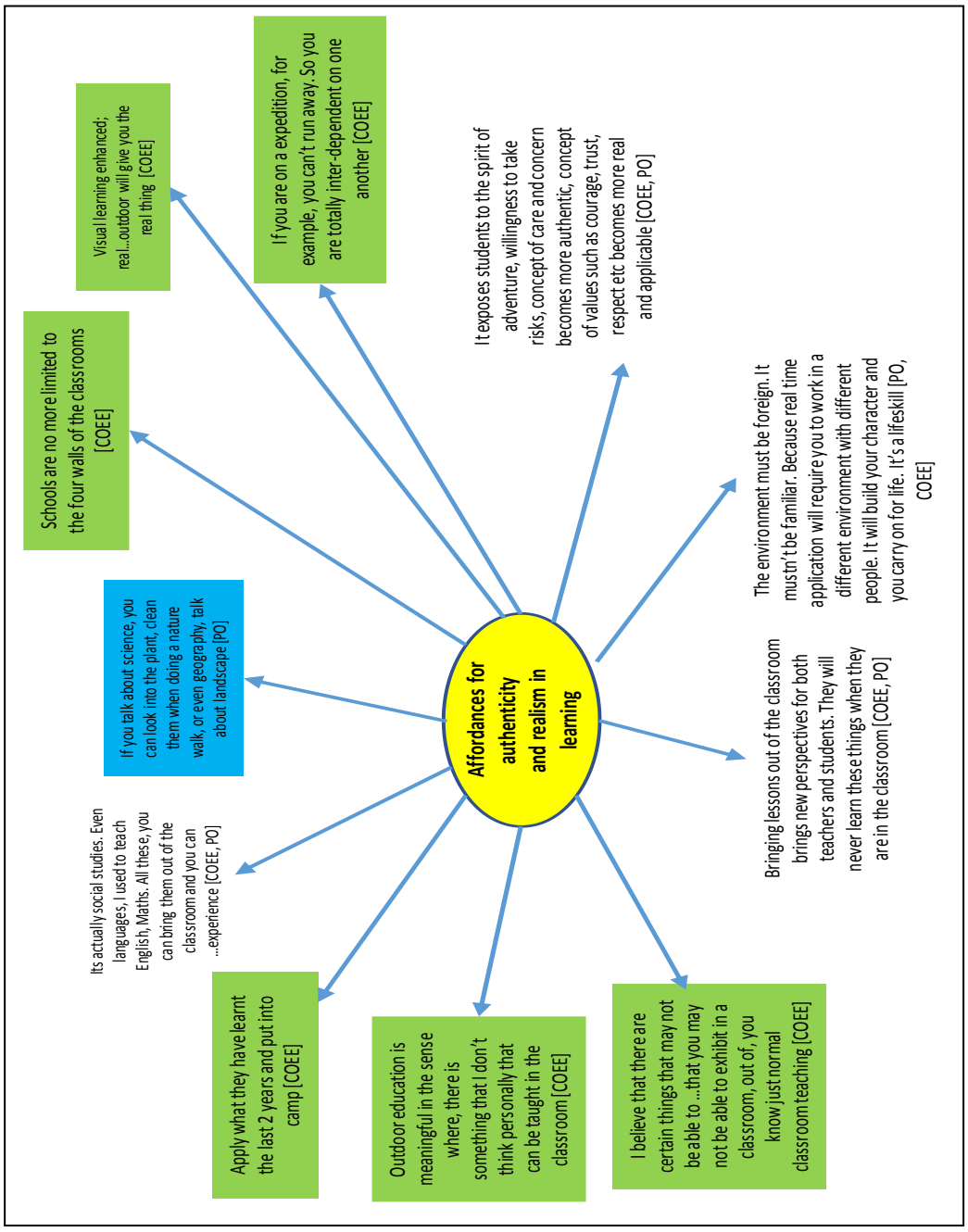

Figure 4.7: Step 3d. Revisit data to refine categories & dimensions

Seeing as some of the colour highlights contained various beliefs about the value of outdoor education, they were associated with two or more categories of descriptions, whereas others were associated with simply one category of description (see below, those quotations that are not highlighted are either associated with two or three categories of descriptions).

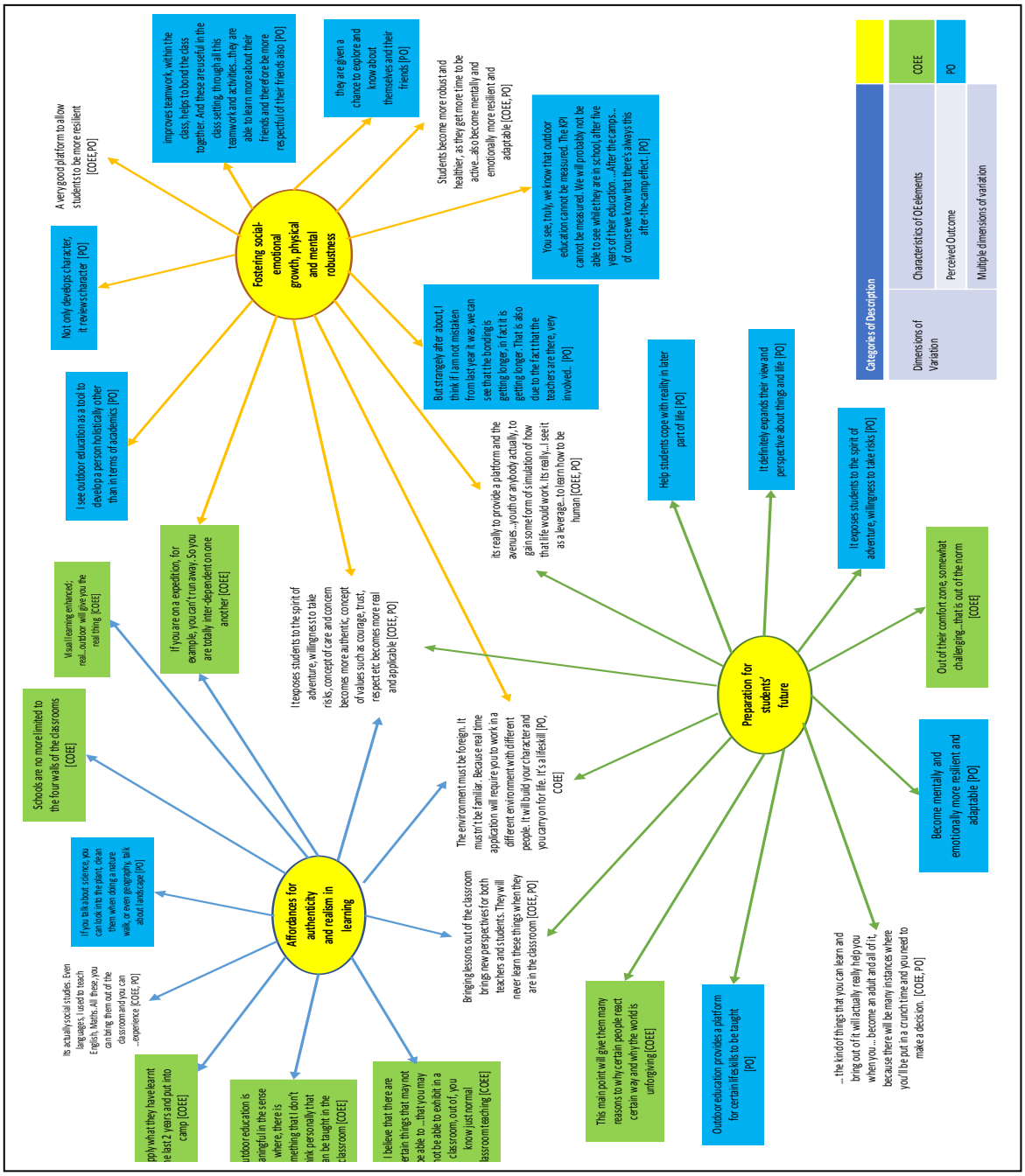

Figure 4.8: Overall categories of descriptions and dimensions of variation

The data analysis yielded three qualitatively different conceptions of teachers' and outdoor practitioners' belief on the value of outdoor education. The three conceptions are: (a) affordances for authenticity, realism in learning, (b) fostering social emotional growth, physical and mental robustness, and (c) preparation for students' future. The conceptions are organised in the form of a nested hierarchy, so later ones imply an understanding of earlier ones, but earlier conceptions do not take in later ones. As explained by Ashwin (2005), since each conception is derived from an analysis of all the transcripts, it cannot be claimed that individual quotations perfectly align to particular conceptions, but instead provide a sense of that conception. These findings represent conceptions of the belief about the value of outdoor education by focusing on the "pool of meaning" (Marton & Booth, 1997, pg 133) given by teachers and outdoor practitioners interviewed about their belief. They are not meant to represent separate individual's experiences (Marton, 1981). Within the conceptions are the following dimensions of variation: (i) characterisation of the outdoor education elements; and (ii) perceived outcome. Some of the dimensions of variation occur in more than one conception, and in two instances they occur in all three conceptions. These two dimensions of variation provide the basis for the differences when school teachers and outdoor practitioners describe the variation of their beliefs about the value of outdoor education.

Following guidelines suggested by Åkerlind (2005b), an effort is made here to present these findings in a manner that remains as faithful as possible to the descriptions of the participants, as understandable to the reader as possible, and provides persuasive support for the interpretations that have been made. The results are broken down into sections, focusing on different conceptions within the outcome space, and different dimensions of variation in isolation in order to assist the reader to come to terms with the complexity of the data. Extracts from the interview transcripts are referenced to link to the dimensions of variations. The extracts were selected based on the principle that they should provide illustrations that are representative, convincing and yet parsimonious (Åkerlind, 2005b). A graphical

representation of the research findings is presented in Figure 4.9, which shows the range of dimensions of variation in relation to the categories of description, while capturing their association to the dimensions of variation. The representations shown are derived from the primary data that was gathered. Relying more heavily on empirical support limits the relational aspect of myself and the phenomenon in the analysis, accentuating the goal of presenting the relation of phenomenon and participants in the analysis (Åkerlind, 2005b).

Following this are sections which first describe the various conceptions of the categories of description that make up the outcome space. Within the categories of description, the dimensions of variation will be presented, elaborated and analysed. Subsequently the findings and analysis of the second research question are presented.

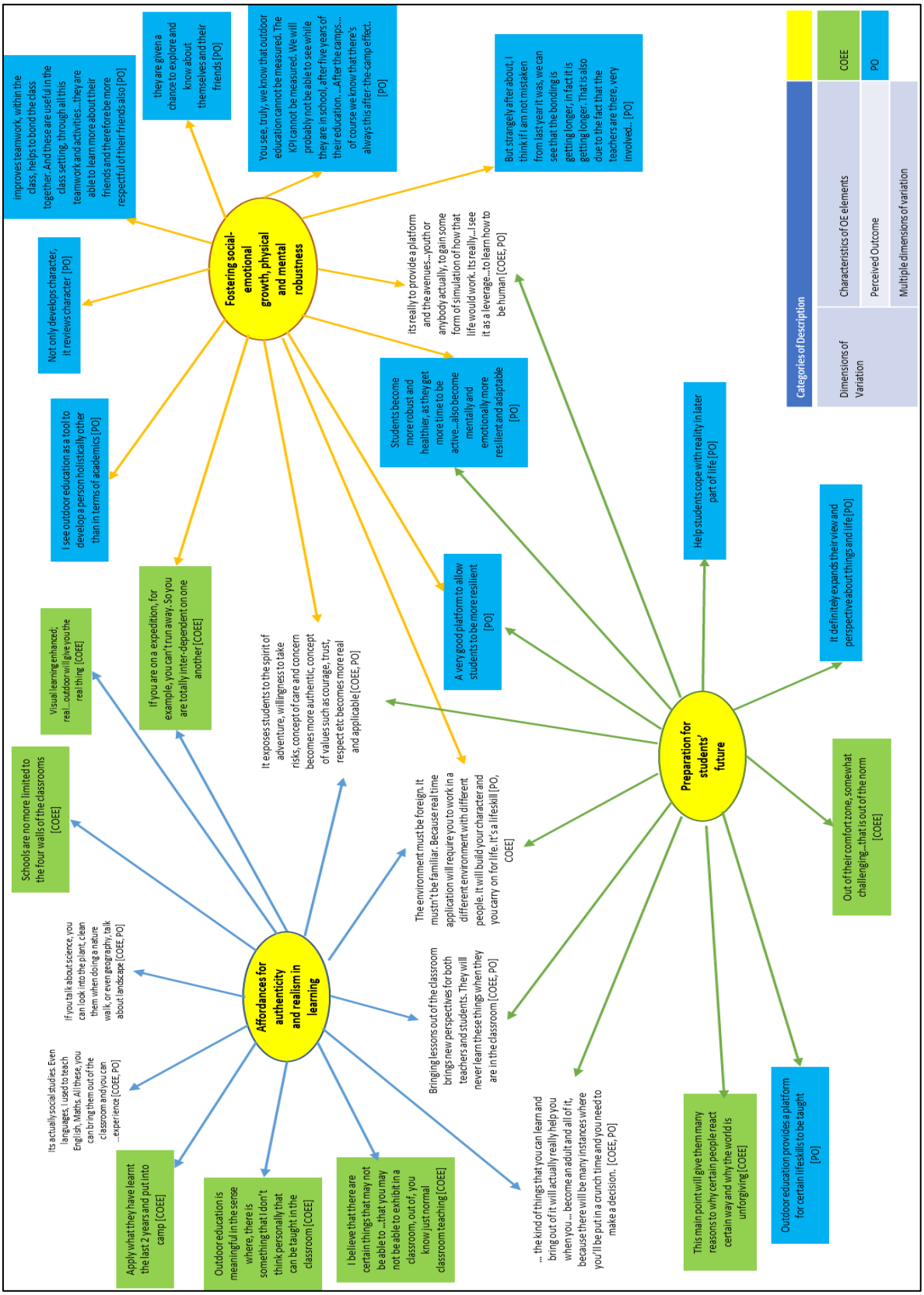

Figure 4.9: Categories of description, and dimensions of variation

4.2.1 Variation in beliefs of the value of outdoor education

From the analysis of the 11 interviews conducted with the six teachers and five outdoor practitioners, I categorised the meanings presented in the transcripts into three separate, hierarchically structured conceptions of the beliefs about the value of outdoor education and presented graphically through the outcome space in a nested hierarchy, as shown in Figure 4.10. These conceptions have been labelled to provide a quick reference to the composite meanings attributed to each as follows: (a) affordances for authenticity, realism in learning; (b) fostering social emotional growth, physical and mental robustness; and (c) preparation for students' future. These categories are discussed individually in the sections that follow.

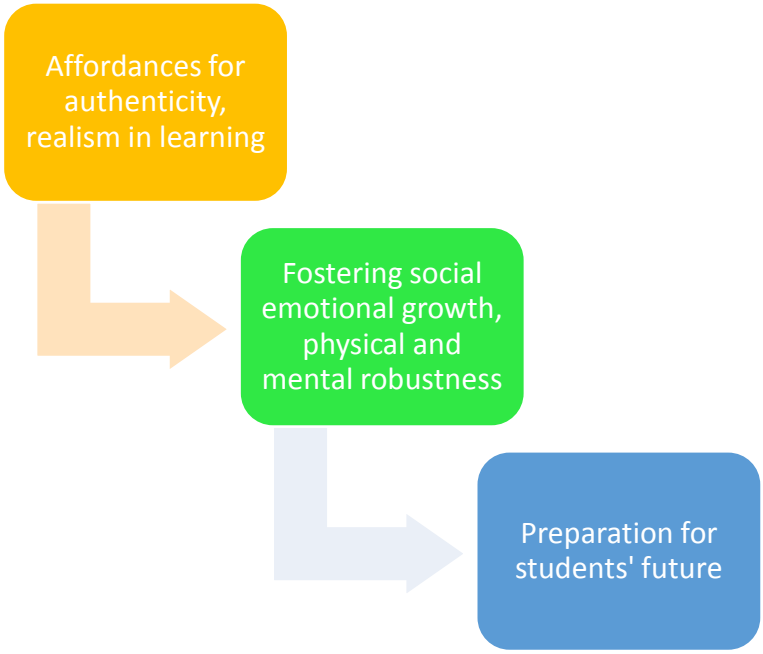

Figure 4.10: Graphical representation of the outcome space

4.2.2 Affordances for authenticity, realism in learning

Within this conception on the belief of value of outdoor education, the focus of attention is on the idea that students can appreciate the reality of the object of learning because of undergoing the concrete and personal first-hand experience of encountering the object of learning at the environment (outdoors). Interviewees also relate the affordances for authenticity and realism in learning due to the

characteristics of the outdoor education experience, as well as the perceived outcome. The following extracts under the respective dimensions of variation will seek to draw the connections.

4.2.2.1 Characteristics of outdoor education elements

A teacher recounted the point that being out 'there' at the location in the moment to experience for herself had a significant impact on bonding with her classmates, and this was a valuable aspect that the environment afforded. The teacher's account goes like this over several instances

> I think those experiences taught me one thing. That **it's better to be there and appreciate it rather than to just see it in a projector, or a computer**. And **it's also more impactful**. Like **I still remember the outdoor outing that we went to the park when I was in Primary 6**. **That was the day that I really bonded with my other classmates, compared to all those years in the same classroom**. [STF1]

From the above extract, particularly the utterance, "That it's better to be there and appreciate it rather than to just see it in a projector, or a computer. And it's also more impactful.", it appears in her view that when one is immersed personally first-hand to encounter the experience and object of learning, individuals are able to make a strong connection. This school teacher's belief seems to be in line with an Ofsted report (2008), which reports in its findings

> The first-hand experiences of learning outside the classroom can help to make subjects more vivid and interesting for pupils and enhance their understanding (pg 7)

The teacher goes on to reinforce the value of the environment being able to bring across the realism in learning and bring about the meaning of the object of learning, in the process, allowing the students to get as close and real to the subject and impacting their knowledge. This view by the school teacher resonates with the Learning Away report (Kendall, Rodger, 2015) under subsection "Impact on

Knowledge, Understanding and Skills", which stated that students were "developing a deeper and better understanding of the subject" (Kendall, Rodger, 2015, pg 38). In the below example, the teacher talks about how the students discovered the process of recycling water at the water treatment plant which took place out of classroom in the outdoor environment

> Because we're not exposed to any of this where we are, currently. …Like if now they have the water treatment plant… Because I always see my students going for the water recycling plant – the Learning Journey – so when they come back and then ask them how was it? **They can remember**. Then they say teacher, last time they said they mix the water, we really think it's urine water. Very dirty, you know. **But when we go there, we understand the process, the filtering, how much of filtering goes into it**. And how it is really like natural water. We don't feel so geli [Singapore local jargon that means feeling of creepiness or hair-raising] like that, not affected by it psychologically. That is that one Learning Journey to the water treatment plant. [STF1]

The same teacher recounted another example of environment being able to bring across the object of learning, in this case an animal in a local wetland reserve that the teacher thought the students did not know existed in urban Singapore, as she explained that all along, the students had only seen them in books and not encountered it in a local outdoor environment. At least for the teacher, it seemed to make an impact to bring the learning alive for the students from looking at it in the books to the real outdoor environment where it existed in Singapore

> **Then the next one, when they go to the nature reserve, like Sungei Buloh** [this is a wetland reserve located at North-West of Singapore] and all that. **They say teacher, got the, what, komodo dragon**. I say in Singapore we have? **So I think all along, they see in the books. And then they really see there, with the tongues, they come out and all that. So, they realise, oh really, this is a real animal**, and even Singapore has all these. [STF1]

The teacher continues with the account that being at the environment to 'see' visually with first-hand experience, combined with the emotional response it exudes makes it a multi-sensory experience that enhances the sense making for the students. In the below case, she talks about the geographical view of one of Singapore's famous location from another view and angle, which for the young students who have not stepped out of their own town ("Woodlands area"), the opportunity to do so became an eye-opening experience, that brought along a whole new meaning and perspective. She experienced it herself and she imagined the same could have been the students' experience of the environment

> And then the other one that **they go, like outdoor, they go for kayaking at the Singapore… Dragon-boating, at the Singapore River**. So that one also they realise how it's so nice. Because at one point when you stop, you can see the whole of the Shenton Way and the CBD area. Then they… You know all these kids are still young, and they're always at the… our area, Woodlands area. So **when they go there, then they realize, wow. So it's visually impactful. They see the Singapore Flyer, then only they realize, you know, how many,** what is that… Each cubicle are there in the Singapore Flyer. So **I think when we go by the highway, in the car, when we see it, it's not as impactful when they see it from the dragon-boating.** Because I also tried. **From the view of the sea, from sitting in the… The Singapore River, and then seeing the Singapore Flyer, is more impactful. Yes**. [STF1]

In the next two extracts, the teacher provides further examples where the environment was able to bring across the meaning of the object of learning. The first about poverty as encountered in a foreign country, Cambodia, because such an abstract idea is hard to bring across to Singaporean students whose comfortable lives have not provided them with any understanding of what it is like to be poor. She also highlights a common worrying trend about youths nowadays, who are pre-occupied with technology that they do not take the time to appreciate the natural environment that is around them, and just how much there is to life when they come out of their pre-occupation with their mobile phones and ipads.

> And then we also have these yearly trips to Cambodia. And **that's when we get the real impact of poverty**, about how it is to be poor, but at the same time how to be happy with the little you have. **Because we're not exposed to any of this where we are, currently. Because I think we have almost everything. There's a lot of luxury. Even at home we don't do any housework. There are domestic helpers.** And also, **we think our life revolves around the computer or a hand phone - the technology. But only when you come out, you realise there's so much to life**. If you go into a train nowadays right, I don't see anybody looking at anybody. I can just see, if there is about 30 people in that particular cubicle, all 30 got iPad, got one phone. And they're smiling and looking at it. So, there's no human contact, there's no visual… They don't appreciate… Even the nature, they don't look out and see that, trees or anything. [STF1]

The teacher concludes with a reinforcement of her earlier point that being able to be present at the environment allows an authentic appreciation of the object of learning compared to receiving the information second hand or through other means and platforms. The actual environment and circumstances where the object of learning was experienced directly and personally by the learner provides an authentic value which enhances the meaning for the student. This echoes with the reference made earlier to the Learning Away 2015 report, under the sub-section "Impact on Knowledge, Understanding and Skills", with the point made that, students were 'developing a deeper and better understanding of the subject' (Kendall & Rodger, 2015, pg 38)

> The purpose of outdoor education right… I can describe something to you, or to anybody, then you have an image of it. **But only when you see it, then you feel… Either you can feel it or can really see, or whether you can even see whether your image is right or not. Like people always tell me, for example in the Rafflesia right, it's a huge plant, very smelly, so huge. But then I couldn't imagine it, you know. But when I actually saw the plant, I was like,**

> **yes, it looks like a curry pot, you know.** So, I was like… **I realise that what I hear, and what I imagine, cannot correlate.** There's bits of it, like a huge plant. But when I see it, the colour, like the speckles on it. So, it's very different. **So I think the outdoor will give you the real thing**. Like even like if you go to a bakery, like Gardenia, they entertain you if you go there. You always eat the bread. But you don't… And then you know, you Google, you can see – you put some yeast, you put some flour, you get the bread. **Only when you go there, you see how they raise the flour, how much it goes up when it rises. So, you learn more. You learn more intricacies of the thing…**So that is the impact of outdoor. [STF1]

Another teacher notes how the outdoor environment allow clarity in elucidating difficult topics such as personal qualities, like values to students because the situational environment that is created from outdoor education experiences allows learners to meet with those personal qualities and values in action which are enacted by the members involved in the moment in response to the challenge or the task

> And **definitely outdoor education is an excellent way to teach the values. And it is because, it is something that you can see very, very clearly. And they can experience very, very easily, the different values.** Whether it be discipline. Whether it be commitment. Whether it be empathy. It is very, very clear. [STM1]

There are several research findings and literature that provide evidence that outdoor experiences foster personal qualities and inculcates values in individuals (Ofsted Report, 2008, pg 5; Fiennes, Oliver, Dickson, Escobar, Romans, Oliver, 2015; Learning Away Report, 2015, pg 38). This is no different from what is written in the literature about the characteristics of outdoor education which follow a positive orientation that aims to provide participants with practical, real-life learning experiences that equip them to lead good, fulfilling lives (Neill, 2001) and authenticity as it relates to learners' engagement with the 'object' of study (Bonnett & Cuypers, 2002, pg 339). Learning in the outdoors is only one "pedagogical site"—that is, a "site(s) that have

(has) the power to teach, to engage 'learners' in meaning making practices that they use to make sense of their worlds and their selves and thereby influence how they act on themselves and others" (Wright, 2009, pg 7).

An outdoor practitioner expresses a similar view about the environment where the outdoor experience and tasks are carried out, being able to make the learning of values authentic, real and applicable. As such, it appears that the concepts uttered by the practitioner in the extract below, becomes more authentic through outdoor education experiences because the values and abstract ideas become lived-experiences for the participants.

> I firmly believe that outdoor education needs to be a part of the school curriculum as it exposes the students to the spirit of adventure, willingness to take risks, **concept of care and concern becomes more authentic, concept of values such as courage, trust, respect etc... becomes more real and applicable** [OPF1]

Another outdoor practitioner reinforces the real-ness of encountering the task, which enhances the involvement, engagement of those involved

> let's say for example when **you are out there in the outdoors as a group and you are supposed to accomplish a certain task, that experience is very real**. **The situation you are in is very real, you feel it you see it**. And I think I feel that in this point of time where you say that I don't think I can do this alone. ... If we come together, we group together as one; we are able to finish this. **So I think the outdoors presents this real and concrete experience that you don't just see with your eyes but you are in it and you feel it**. [OPM4]

Several of the interviewees remarked that the outdoors offers an environment which is out of the traditional four-walled classrooms, and this meaningfully contributes to bring about learning and awareness to the students that the traditional four walls classroom is unable to do so. For instance, the example below, the outdoor practitioner provides some background description on how the traditional classroom

atmosphere and tasks demands was not able to summon the kind of team emphasis because it was very individualistic. However, he felt that the demands of the outdoor experiences and tasks makes them reflect that "*we are in this together"* and the responses expected of them could not be raised and impressed upon them in a class setting where the class population is large (up to 30 students as mentioned by the outdoor practitioner)

> Well I think, at least for my time in school…there isn't much emphasis or purposefully done to enable people to come together and to work together to get things done, which I think that is one purpose **I see that outdoor education can bring about, you know that yes we are in this together, we are trying to achieve something but two is better than one** in that sense…I think the one thing that I could see was even **though through a short 5 day period of outdoor experience for beginners or for novice, you could see the change in them, you know from someone who may start off being selfish, at the onset but then at the end of the 5 day, you could see that hey you know, you can see the difference in the person where he willingly or she willingly steps up to help the others in the group.** So, I see that **outdoor education is meaningful in the sense where, there is something that I don't think personally that can be taught that in the classroom through a 1 to 30 pupils in the classroom**, academic style this kind so that's what I feel. **Outdoor education can have the impact in the lives of people**. [OPM4]

A school teacher echoes a similar healthy respect about the role of the environment (*Bringing 'lessons' out of the classroom brings new perspectives for both teachers and students)* as a strong belief. He completes his sentence with another strong statement that those valuable learning that takes place outdoors will not be acquired by students when

> **they are in the traditional four-walled classroom** [STM2]
>
> **Bringing 'lessons' out of the classroom brings new perspectives for both teachers and students…They will never learn these things when they are in the classroom**. [STM2]

Another school teacher and an outdoor practitioner express similar views with the following comments

> **Outdoor Education visits some skills that students may not come across in their day to day activities or lesson**…**because I believe that there are certain things that may not be able to... that you may not be able to exhibit in a classroom or actually derive out of, you know, just normal classroom teaching, and hence the circumstance really has to be something that has to be brand new, has to be something that is not common**, so as to create, like, the opportunity for my students or for myself to really learn something new. [STM4]
>
> **I felt that these life skills and certain skills such as, like I said previously**, on high elements as a child, it **is not one that you could put students through in the classroom. You could show them videos and maybe you can talk to them about some examples, but I think it would be never the same unless you are experiencing it yourself, and when you are the one overcoming that process, then you are able to, so-called, live on and tell the tale and then inspire the rest**, so... but if **putting you through that in class, I would say that most of us would agree that, you know, that it may not be as impactful**, therefore that is also why **I mentioned that I felt that OE is definitely a platform for us who teach skills in a more impactful manner**, in a manner that students will be more likely to believe because they can accept it once they have cleared that obstacle or challenge… [STM4]
>
> **schools are no more limited to the four walls of the classrooms** [OPM3]

The above utterances by the teachers and outdoor practitioner resonate with the account by Dillon et al. (2005), where the authors reported the following under the sub-heading “Knowledge and understanding”

> The children had visited the farm several months previously and had each held a hen and seen inside a hut holding around 8,000 birds. They could remember these experiences, and the information about chickens, even though they had quite recently revisited the farm for a visit with a completely different focus. Interviewees, across all three outdoor contexts, reflected on similar findings, saying that outdoor learning gave students direct experience of the subjects they were studying. As one teacher visiting a residential field centre commented, 'It's putting learning into context rather than just seeing things in an academic sense in the classroom'. One of the farm educators offered another perspective on this when he stated that outdoor learning 'makes the curriculum come alive…it's a different experience to the classroom so it's a more powerful teaching resource because I think it will be more memorable as a learning experience for them' (pg 26)

The same teacher further reinforced that when in the outdoors undergoing an expedition, one cannot abandon the problem or issues encountered, but must work with others to overcome them. The teacher goes on to narrate how in real life when one is saddled with an issue that one must seek resolution and not just walk away, the outdoor environment and the consequential learning that affords for the participants makes it unforgettable and unavoidable to just not attend to it but to resolve in a timely manner. This is because the implications of not resolving it will bear upon the participants in a matter of time. In most cases, failure to resolve would result in consequences that are immediately felt, for example, a poorly set up tent or no shelter to take a rest for the night or poorly cooked meal

> … It's totally different when you are in an urban setting because you can just walk off, right. You can go anywhere you want. But **if you are in an expedition, for example. You can't run away from anything. So, you are totally inter-dependent on one another**. [STM1]
>
> **The environment must be foreign. It mustn't be familiar. Because real time application will require you to work in a different environment with different people.** [STM1]

The above comment by the teacher is similarly echoed by Kendall and Rodger (2015) in the Learning Away 2015 Report as follows

> The residential environment engenders a sense of maturity in students, they have to resolve issues and disputes and get along with one another in order for the residential to be successful. The realisation that they could not walk away and they were reliant on one another for the duration of the residential was seen as a positive aspect of the residential experience. (pg 69)

An outdoor practitioner recognises that the outdoor environment would provide a useful and relevant link to academic curriculum that could be appropriately delivered, and makes a link with the Science subject as an example

> So, you know maybe in terms on school curriculum, lessons can also be brought out of... **For Science lessons, I guess, you know instead of having them to see something through the textbooks or through an online lesson, why not bring them out to have that concrete experience in the outdoors. You can see the flora and fauna at Ubin** [This is a local island, located in the north-east of Singapore, known for its rustic and natural environment that is home to some endemic flora and fauna species] per se... **You can see the species that you can find in Ubin, the spiders and so on. And I guess with that experience, it would help to enable them to learn better and to digest and understand what they are seeing and what they are learning better, rather than just reading from the book and seeing an artist illustration of what it might look like.** Ya so I guess that's one… [OPM4]

The above observations and beliefs by the school teacher and outdoor practitioner bears resemblance to Dewey's ideas on primary and secondary experiences (1938). Primary experience is the everyday experience through which a human try to do something to and undergoes by gross, macroscopic, crude subject matters. In the above examples from the school teacher, the primary experience is where the student embarks on the expedition and is immersed in this experience which allows the student to become aware of the intricacies of working with people and interacting with the environment and any other elements. Secondary experience is the experience which is made by refined and derived objects of reflection and by intervention of systematic thinking (Glassman 2001). In the above examples,

secondary experience is prevalent when the student is able to engage in the sensemaking, through reflection as such reflective and systematic thinking provides key opportunities for students to develop their metacognition. Hence the process of outdoor experiences is one that promotes the ideas of primary and secondary experiences as outlined by Dewey (1938). In conclusion, the sentiments of the teachers and outdoor practitioners can be summed up through Dewey's (1938) quotes, when he said

> …the soundness of the principle that education in order to accomplish its end both for the individual learner and for society must be based upon experience – which is always the actual life-experience of some individual. (pg 89)

and a commitment to providing education based on a sound philosophy of experience,

> The basic question concerns the nature of education with no qualifying adjectives prefixed. What we want and need is education pure and simple, and we shall make surer and faster progress when we devote ourselves to finding out just what education is and what conditions have to be satisfied in order that education may be a reality and not a name or a slogan. It is for this reason alone that I have emphasized the need for a sound philosophy of experience. (pg 90-91)

Another perspective on the prospective benefits and value that is accrued from outdoor learning is shared by a teacher, who describes that through an outdoor learning experience, students' multiple intelligence could be further enhanced. This is because the outdoor experiences lend itself naturally to the exposure to multiple intelligence (Gardner, 1993). This multiple intelligence link that this school teacher makes bears resemblance to MacFarland & Adhikary (2006) who contend that "taking typically indoor activities to the outdoors can add richness and variety to the playground and enhance the multiple intelligences each child brings to play." (pg 24). Hence, the school teacher in this study explains that the engagement of learning through the outdoor experience is believed to relate to the various multiple intelligences that is perceived to be within the students

… I believe that **these multiple intelligences are very good tool** because our kids are very narrow minded. They're developing in one straight way. So, they have to be developed in many other different ways. So, **I just sat down and looked at how rich outdoor education is. It instantaneously connects to all the intelligences**. [STM1]

4.2.2.2 Perceived outcome

In the below extract, this outdoor practitioner explains how she realised that participating in the outdoor experiences is not about building one's agility or physical prowess, but truly the benefit of values inculcation. She related that the learning accrued through outdoor learning is no different from the desired outcomes of education as an overall goal in developing students to be useful citizens. As a result of participating in the outdoor experiences and the learning that is accrued through outdoor learning, several faculties in an individual and in a team, are further given a boost. This ranges from interpersonal and intrapersonal growth such as personal confidence, mental resilience and the ability to work collegially with others. The key characteristic of the outdoors which she describes as reflective of the real-world situations, provides an environment where students execute their problem solving to respond to the emerging issues which is commonly how the real and commercial world entities expect their employees to react and respond. Hence, the value of the outdoors in bringing across this important aspect of learning and making those connections for learners and in the process develop their character, leadership is highly prized in current circumstances in Singapore where young learners are not getting the kind of exposure to appreciate the new world order, due to the affluent lifestyle

…I started to see outdoor education, or outdoor, as a platform in a different light, after my Outward Bound experience …to gain confidence or a heightened sense of awareness of self. It becomes more robust. **Other than just all the talking in class or learning just a screen, a worksheet, and then**

project work. It becomes more real, because of the settings. To a person who has not a lot of skills in relation to the outdoors, it can look like a life-and-death situation. If I'm caught in a kayak in a storm, and I have only that limited skill set on how I'm going to... I have to make sure I do it all with the team. I do it with my peers who, some of them may have strengths...I will need to learn how to follow, and at the same time I also need to learn how to lead because I may have some things that others may not have... **And the outdoor experience brought up all these dynamics without even being very deliberate. It's not about role play. It's a very real scenario that you are into** … **Scenarios are very real, because there are some things which can't control**. … I can't control how fast or how slow my team members want to work. But **through this experience, I said, I start to learn and also realise that, and that makes all the difference,** right? **Because that's what being human is about. That's what human dynamics** … **You start to learn things that typically in classroom you can try to simulate scenarios. You'll not be as real until the conflict actually happens. And in the outdoors setting actually provide that conflict, for that conflict to happen and quickly get it resolved,** because we still have to survive whatever that situation is. … You still have got to find your way back to where your home base is. Whereas in a classroom you say, because I don't care and fight lor [local slang to exaggerate the meaning of the expression], and I get dismissed by my teacher. My teacher still need to let me go off class. So, **it's a very different kind of setting and realism to the lessons that we see in terms of character development, in terms of leadership development**. [OPF1]

A teacher compares the situation in outdoor learning with a football match when individuals can take a break, have a drink, be rested and then return to the game. He shares that in outdoor expeditions, even when the individual takes something to quench his thirst or hunger, the individual will show exhaustion and the real character of the individual is experienced by the rest of the team members, which

may not be the case in sports games and competitions. This is brought about by the realism of dealing with the issues and challenges as it takes place naturally instead

> And I told this to many of my students, you know **the best time you want to see a person's character is when they're tired. It's when their totally exhausted and their energy is zero. That's when the real character is.** And you can't see that in class. There's no way. And you can see that in outdoor education. You can't see that in football, because if they're tired they just walk off, have a drink, and come back on. **But let's say you take on an expedition. You will experience at one point in time you're totally exhausted. No matter how much you drink, no matter how much you eat, you're totally exhausted. And that's when you see a person's true character coming to light.** [STM1]

The above observations are supported both by the findings of Rickinson et. al. (2004) who wrote

> There is substantial research evidence to suggest that outdoor adventure programmes can impact positively on young people's:
>
> - attitudes, beliefs and self-perceptions – examples of outcomes include independence, confidence, self-esteem, locus of control, self-efficacy, personal effectiveness and coping strategies
> - interpersonal and social skills – such as social effectiveness, communication skills, group cohesion and teamwork.
>
> (pg 6)

and Kendall and Rodger (2015) in the Learning Away report that outdoor residential bring about the following impact

- Developing relationships between teachers and students and students and students;
- Building students' resilience, confidence and wellbeing; and
- Building cohesion amongst students

(pg i, ii)

Teachers and outdoor practitioners also passionately relate occasions where the notion of academic learning is recognised as a strong and tangible value of outdoor education experiences for their students. They never hesitated in describing the favourable conditions, situated-ness and contextual circumstances that were present in the outdoor environment, which are factors that provide powerful, lasting learning memories for students. This further emphasises this conception of realism and authenticity in learning for students. Extracts that brings across this variation of the conception are in the following illustrations. This first one talks about recognising the various subjects (science, history, english, mathematics) that can be taught through the outdoors

> **Outdoor education. They are directly impacting the school curriculum. Would be contribution to some of the subjects**, okay. **For example, geography. It's a high impact on geography. History if we walk on the southern ridges, there is a lot of history there about Singapore's past. We're talking about science, right. We're talking about biology. … English, vocabulary. Certain when they write their journals. And certain words will improve their vocabulary on details, mathematics. We're talking about orienteering. We're talking about distances. So those can have a direct impact on a subject.** So, **I feel the contribution of outdoor education on any subject is great.** Okay, when I was doing the sec three [this refers to secondary three, which is the third level of progression in a secondary school in Singapore] camp, ... **We adopted mathematical intelligence approach, by Howard Gardner, right, for our camp. So, we incorporated history**, **geography, science, maths** lessons into that. …**when we were climbing Mount Ophir, right, half way through checkpoint two and half, we sat them down and we talk about the history of Gunung Ledang** [this is a mountain in West Malaysia that Secondary School teachers in Singapore bring their students], **… So that's history.** Then at night, right, because it's a place away from society, we look up in the sky and **we try to locate Orion's Belt. And we talk about how far are these? And we talk about light years, what is the**

meaning of light years? And we talk about what is astronomy? What is astrology? They may not have a direct impact onto the curriculum, they may not be examinable. But it is a life skill that they can use. We even brought an altimeter to them. Okay, we're at this height. Okay, this is an altimeter. It is an instrument to measure the height. [STM2]

The next is an account by an outdoor practitioner. He gives a fresh perspective on how school subjects can be brought out alive

> …outdoor education will give them more different kind of activities, more different kind of programme…**If you talk about science, you can go and look into the plant, clean them when doing a nature walk, or even the geography, talk about the landscape.** This also, during trekking, you can get into it. [OPM1]

More examples from another female outdoor practitioner below who describes how curriculum learning is embedded within the outdoor education experience, and in this case, besides mathematics and science, D&T (design and technology) lessons are also incorporated

> So, I know of a teacher in one of the secondary schools, who kind of works with the maths department, science department, to bring OE… **If I am pitching a tent, I can teach you about angles… If it's maths. Yes, I can teach you about how to estimate the length of the rope… So then, I can also use physics because I can use a rock for an anchor**… So, all these things can be brought in. **I can even bring in D and T, design and technology.** This is because maybe this tent is just open. **And anything in D and T that's outdoors, you supplement the tent or maybe replace the tent. So, a lot of things can be built if we are willing to see that it's a module.** It's just another subject, or another module… **You see how outdoor education supplements science lessons. Supplements like maths lesson. Sometimes D and T lessons. Supplements my CCA [co-curricular activity] lessons.** [OPF1]

The following utterances by two teachers bring up how geography, maths and english can be infused into outdoor education experiences

> **To use the experiential learning in OE to actually help in the subject matter. That means it can start from subjects that is more linked to OE, like geography, bio. These two subjects are more closely related to OE, so if I can, I would like to apply the experiential learning part of OE to actually let the students learn better. That means, for geography, you bring out for a field trip. You really go out to the open environment and measure certain elements. So, that's how I can see it. To use experiential learning as a tool to infuse into curriculum.** [STF2]

> … **outdoor education is part of experiential learning**. Some people must realise that. … it is not only PE, and it's not only outdoor education. It is actually **social studies… Even languages. I used to teach English, math. All these, you can bring them out of the classroom and you can experience.** [STM2]

And finally, a teacher talks about the practical usefulness of learning first aid when he sees that his students have applied the direct learning onto a real occasion where it is needed to be applied to help a fellow student who had suffered some injuries

> **that through OE, eg, when we teach first aid, some of them are able to apply it into their CCA.** When their friend gets injured, they know how to treat a sprained ankle, eg, and when they... when they go out, you know, and they see someone who's... who had a cut, okay… **at least they are able to help out.** [STM4]

The above belief by school teachers and outdoor practitioners that outdoor education experiences do lead to the perceived outcomes of curriculum learning and academic integration is aligned with several outdoor learning literatures. The first is in the review of outdoor learning by Rickinson et al. (2004). The authors summarise that

> School grounds/community projects have the capacity to link with most curriculum areas. Two specific examples of benefits stemming from this are positive gains in science process skills and improved understanding of design and technology-related issues. (pg 6)

Scott et. al. (2006) echo a similar sentiment on the value of the outdoors being able to deliver academic learning in their research report in the field of Geography and Environmental Science lessons, that extended previous studies of students' perceptions, where they examined the students' and lecturers' perceptions of the value of fieldwork as a pedagogic tool. The researchers defined the word 'fieldwork' as "any study of the environment that takes place outside the classroom" (pg 161). Scott et al. (2006) build on this further, that fieldtrips help themselves to teach subject-specific skills and perceive fieldwork as an essential engagement with the 'out' world. Several authors (Jordet, 2007; O´Brien and Murray, 2007) contend that the outdoor environment may enhance learning since the encounter with nature becomes holistic, where knowledge and experience interact with all senses. According to the lecturers in the study by Scott et al. (2006), field trips help students to contextualize the theory, (e.g. put the academic content in a practical applied sense). The lecturers shared that fieldtrips provide a sense of reality to the students that lead to improvements in both student-student and lecturer student relationships. This point is aptly acknowledged by two teachers in this study. The first teacher, a male shared that as a result of the camp, teachers get to see a different side of their students, which allowed them to see students in a new light as they never saw them before and as a result of this, they understood their student better and their relationship with the student is built

> fraternity colleagues who went to camp with us and everything, **they would largely agree that it was during camps that they could see a different side of the students that they could not see in the classroom.** Because in the classroom they get students, students that might be very diligent, very hardworking, and probably someone that they would never have to worry about, but these are also the same students that may turn out to be those

> that have fear of heights, may have fear of water, eg, and then when they overcome it through the sea expedition, **through the high elements or land expedition, and that's when the teachers can really see that, wow, actually these students, they have another side of them that they didn't know**, **and that definitely builds the teachers'... the relationship between the teachers and the students, yes**. [STM4]

The Learning Away report by Kendall and Rodger (2015) carries a similar observation, where the authors report

> as a result of the residential, staff had a better understanding of students' behaviour and this enhanced knowledge could be shared with other members of staff. Relationships developed out of the school environment showed staff and students a different side to one another… (pg 28)

Another school teacher in this study shares a similar sentiment on the value of the outdoors in enabling the staff to bond and connect with students below

> Okay, if you ask about teachers, right**, I really think teachers are okay about the outdoor thing. They also like.** Because sometimes they also go to… Go to the museums and all that…But sometimes outdoor, they do say like, so hot, so hot. But at the end, they say **it's also one of those days where they really connect with their students.** Because that's when **they get to pick other things out of classroom teaching**. It's not so subject-oriented. …Then **I find that we bond and connect very well**. [STF1]

In an earlier section 4.2.2.1 under the dimension of variation of 'Characteristics of outdoor education element', a female outdoor practitioner recalled that outdoor education experiences can lead to perceived interpersonal outcomes like showing care and concern, and values such as courage, trust and respect due to the environmental factors that spontaneously facilitated these for the students

> I firmly believe that outdoor education needs to be a part of the school curriculum as it exposes the students to the spirit of adventure: willingness to

take risk, **concept of care and concern becomes more authentic; concept of values such courage; trust respect, etc., becomes more real and applicable**. [OPF1]

In taking stock of the study participants who have given their views that resonate with this first conception of the belief on the value of outdoor education with the variation in the dimensions, a total of nine interviewees out of eleven interviewees described this belief with the variation which this analysis brought. This seems to indicate this belief as a strong value of outdoor education. Of the nine interviewees, whose response were captured within the variation in the dimensions, five out of six made up for the school teachers and four out of five made up for the outdoor practitioners. All the female interviewees, comprising two school teachers and one outdoor practitioner held similar belief with the variations in the dimensions. As analysis of gender responses and its meaning is not within the scope of this study, further research and analysis is needed to establish what this means.

4.2.3 Fostering social emotional growth, physical and mental robustness

The next conception of the belief in the value of outdoor education contains several references that allude to personal growth and development. The two questions in the online survey (Question 1 and Question 2) and verbal interview (Question: If you had to describe the environment and circumstances where outdoor education takes place, what comes to your mind? Elaborate this please) prompted the teacher and outdoor practitioners to describe their observations on the intricacies of outcomes of outdoor education for students. It reveals their belief in the holistic nature of personal growth for individuals who are engaged in experiences through outdoor education.

4.2.3.1 Characteristics of outdoor education elements

The first of this is a reference to the conditions and demands placed by the outdoor environment where the tasks happens, requiring the individual to work with different

people under different outdoor environmental conditions. A male school teacher believes that such experiences and situations forces individuals to adapt and adjust themselves to conditions and other people. From such experiences, prompted from an environmental focus, he believes the environmental affordances where the experience is accumulated allows the individual's character to be built, which the individual carry with them for life and becomes useful as a lifeskill

> **…will require you to work in a different environment with different people…because you have to be well-adjusted** [STM2]

An outdoor practitioner makes reference to the adventurous elements which promotes both risk taking an environment of realism and authenticity to imbue values like courage, trust and respect for the participants which comes through the extract below

> **It exposes students to the spirit of adventure, willingness to take risks, concept of care and concern becomes more authentic, concept of values such as courage, trust, respect etc, becomes more real and applicable** [OPF1]

An outdoor practitioner observes an important characteristic of the outdoor education element, of stretching the comforts of participants which brings a new realisation of their ability to cope and respond to the situations encountered. He goes onto describe another characteristic of outdoor education element, which is the debrief conducted by practitioners of the learning experience with participants. This he believes helps the individuals to manage future situations of a similar nature because they have acquired the experience. The outdoor practitioner gives a vivid description of how this happens in the following extract

> Now, what happened is that **when you in such an outdoor education programme you are put in a, you know, out of your comfort zone. During that situation you react differently, you see, and you become a person that sometimes you thought you were not.** … **They start to realise themselves, that hey, why did I do this, and all? And during the debrief portion when we**

> **talk about it, that's when people will go, like, I didn't know that such things could happen. And then we talk about it. So what exactly happened? Why do you react this way? And then they find out**, that every time they do react the same way. **Because of that, when they talk about it and when their peers start to give constructive feedback, that makes them a better person. And in similar situations or scenario happen, they will know how to handle that situation in a better format,** which I feel. [OPM2]

An outdoor practitioner and two teachers relate how adversities, challenges, and placing participants out of their comfort zone leveraged in the design of outdoor education programmes allow individuals to change as a person and become the person they grow into the future. This happens as they deal with the situation, and in the process, develop the capacity to manage themselves and work with others to get a resolution to the challenges. By being able to handle difficult and challenging situations, learners discover the reservoir of abilities they have in themselves, and in the process, reinforce that they can manage the situation and strengthens their mentality of seeking new ways to approach and deal with the challenges. In learning through experience, they develop maturity and build their self-confidence. The interview respondents candidly provide a lengthy background as a lead up before making their statements

> **I feel adversity changes a man, you know, to who he is going to be. So, this adversity is the one that makes the person to appreciate what they have a little bit more, you see. When you go through that adversity you tend to learn about yourself and be better, what is it you can do and all of that. So, outdoor education does that, you know**. They put you through different adversities and then try to see how can you work it out, and then you move on from there… **you know outdoor education does teach you that.** So, **it makes me a better person.** You know. To say that, yes, it does make you a better person. Example would be kids who has got only one parents, and all that. Many of the times you afraid of them turning into bad kids and all of that, going into gangsterism and stuff. But on the other side we can actually

> see them becoming better people, wanting to change the way they work and not becoming what was actually thought of them. **So, this mentality was given to me, based upon outdoor education.** [OPM2]
>
> …when **you want to do outdoor education based programmes and you want them to learn from it, you have to put them through a certain… You know their comfort zone has to be out. In order for that comfort zone have to be out there are certain risks that they have to go through**. [OPM2]
>
> So **in terms of the environment it must be something that not familiar to you**. And then you need to throw in challenges that will…**That's out of their comfort zone. That will throw them off balance. Then let them find their own balance again**. [STM2]

An outdoor practitioner recalls the moments when he was young and the non-interventionist approach that his teachers took in giving students space and time during their break for independent exploration so that *"we could really just do our thing and we even slide down the slope at our school premises"*. He goes on to connect this with the kind of freedom that needs to be given for students to have some discovery learning

> In of course, historically, I suppose in primary school, you know we certainly didn't face so many restrictions as perhaps students now. …. And teachers were not present and there were no teachers present to supervise. And **we could really just do our thing and we even slide down the slope at our school premises**. You know the grassy slopes... They were steep enough and we would find cardboards and slide down. [OPM3]

The value of such a setting was similarly captured by Dillon et al. (2005) in their report, who affirmed encounters of such nature made a difference to the children

> Just the pure fact of - I don't know what box you would put this in - but … children rolling down the hill. Some of them have never actually done that before, and actually for some of them it's fantastic because, possibly out of

> their whole primary career they have had here [it] is the one thing they remember. They were allowed to race down the hill. So you know, it might not be a bit of paper to show, but for the child to say that is what the child remembers, then that for me is evidence. (pg 27)

The outdoor practitioner in this study who stated the earlier utterance, continues to affirm what he thinks are important factors in outdoor learning, when combined with time for reflection for the students, provides the affordance for students to reflect and take away key learning outcomes

> **I believe that there should be some element of freedom to discover**. We can only design so much, but we cannot forget or leave out that **unforeseeable discovery or learning that is possible**. **There must be some element of uncertainty**. There was must be some element of interpersonal interaction and dynamics. **There must be some element of freedom or free playing in how the experience develops**… Of course, within the constraints of safety. It must be powerful enough **to encourage reflection so that the participants come away with that tangible learning** other than the so called skills of dealing with the environment, for e.g going out to sailing in a kayak. [OPM3]

Another characteristic of outdoor education element by a school teacher elaborates the above perspective by outdoor practitioner (OPM3) further by affirming that if a participant had experienced an extreme challenge of discomfort, unfamiliarity and able to manage the scenario, the participant would be able to handle another similar situation if the individual is faced with it again. The teacher explains that through such experiences, individuals become conditioned, familiar and comfortable with unfamiliarity and discomfort

> So, **outdoor education gives us the opportunity to practice in the most extreme condition**... So, **if you've been through the worst, if you've been through an unfamiliar ground and you're thrown in another unfamiliar ground, then you won't be so stressed, you would be able to contain yourself and, you know, carry on as usual. You can manage yourself better.** I think most students are smart enough to figure it out. But some may need

> help in understanding the relevance of doing certain things. And it's good to have some form of facilitation. But I also believe that a self-realisation is better than a realisation that is brought about by another person. Because this self-realisation is very, very strong. You discover it, hey, wait a minute, you know. Didn't I do this? **That consciousness is something that will build your character and you carry on for life. It is a life skill**. [STM2]

Another teacher shares a similar view, with a strong endorsement of this characteristic of outdoor education element built in to result in new learning about oneself as one is made to confront and solve the issues, which normal classroom teaching environment is not able to produce

> when I think of outdoor education...**I would visualise the value to be outside of a classroom for it to happen**. Again, I also visualise me as **a participant to be placed in a somewhat challenging situation, or maybe a situation that is out of the norm, something that I may not have experienced before**, because **through this**, then, I was able to... **I would be able to, you know, learn new things, because I believe that there are certain things that may not be able to**... that you **may not be able to exhibit in a classroom or actually derive out of, you know, just normal classroom teaching**, and hence **the circumstance really has to be something that has to be brand new, has to be something that is not common, so as to create, like, the opportunity for my students or for myself to really learn something new**. [STM4]

The above views by the interviewees of this study resonates with the call by Ho (2013), who after tracing the historical legacy of outdoor education in Singapore, critically reflected on the value of resilience that seems to make sense if Singapore as a nation was to benefit from outdoor education for its students.

Several authors have written about the conflation of adventure with risk to achieve uncertainty of outcome (Berry & Hodgson, 2011; Gill, 2007; Miles & Priest, 1990, 1999; Priest & Gass, 1997; Wurdinger, 1997), and its contribution to the development

of personal character as a key area of contribution that outdoor education makes. The first amongst them Gill, claims that children build their character and personality through facing risk, build their self-reliance and resilience, their adventurousness and entrepreneurialism, and ultimately that learning to deal with risk and challenge is "an essential part of living a meaningful and satisfying life" (Gill, 2007, pg 16). There is growing concern that, for a raft of reasons from educational trends to fears over health and safety, children are missing out on the vital learning that can only be offered by the outdoors. In No Fear, Gill (2007) writes about the role of risk in childhood, arguing that certain types of risk help children to learn through the acquisition of practical skills, and in understanding how to manage risk safely and keep themselves safe. He also states that children have a natural appetite for risk that should be catered for through educational and free play opportunities, while avoiding exposure to greater, unmanaged risk

> Advocates for children's play assert that active outdoor play always involves some risk, but that the risks are greatly outweighed by the health and development benefits. (pg 16)

Hence, the deliberate nature of designing learning in the outdoors to incorporate an element of perceived risk that is received by learners is so that it can create the conditions for healthy, wholesome growth and development for individuals to build their resilience by successfully overcoming challenges that are at appropriate levels for them to deal with.

As alluded to earlier, fundamental to many definitions of adventure within adventure education literature is the concept of uncertainty of outcome (Hopkins & Putnam, 1993; Mortlock, 1984; Priest, 1999). Priest suggests that "the outcome of an adventure is uncertain when information (critical to the completion of a task or the solution of a problem) is missing, vague, or unknown" (1999, pg 112). Definitions relating to the use of adventure in education—frequently referred to as adventure education or adventure programming—draw on discourses of uncertainty, risk and danger. For instance, Miles and Priest (1990) state that "Adventure education

involves the purposeful planning and implementation of educational processes that involve risk in some way" (pg 1), whilst Ewert and Garvey (2007) claim that "inherent in adventure education is the inclusion of activities and experiences that often include elements of danger or risk and uncertain outcomes" (pg 22). From the utterances by the interviewees in the examples given before this, their key ideas expressed overlap with this definition in the literature, for instance – *"a participant to be placed in a somewhat challenging situation"[STM4]; "if you've been through an unfamiliar ground and you're thrown in another unfamiliar ground"[STM4]; "There must be some element of uncertainty."[OPM3]; "When you go through that adversity you tend to learn about yourself and be better, what is it you can do and all of that"[OPM2]; and "It exposes students to the spirit of adventure, willingness to take risks"[OPF1]*

While the above evidence by the interviewees may suggest that they may have been influenced by several authors' who have written about the conflation of adventure with risk and danger as ways to achieve uncertainty of outcome, I shall hold that judgement until we present the findings of the second research question, which explores the sources that influence teachers and outdoor practitioners' beliefs about the value of outdoor education.

4.2.3.2 Perceived outcome

Within this conception of the belief in the value of outdoor education, teachers and outdoor practitioners are undivided when talking about a number of perceived outcomes that students can gain through their outdoor education experiences. The first of these was that the outdoor environment became a social leveller that allowed no one to feel that they were unjustly prejudiced or left out if they were unable to feel confident about rising to the challenges

> In terms of **the traditional hierarchical social structure in the outdoors as we know from a lot of literature it is the great leveller**. For example, if we went to, **if we were doing kayaking**, you would... We would… **it is very common that the participants, very few of them actually would say be considered as**

an expert kayaker. So, **any mistakes or any successes would equally apply to the group of participants**. [OPM3]

This is because the nature of the challenges, and tasks demands meant no single individual would be unjustly disadvantaged, or no group of individuals could form a clique and claim to have greater ability to carry out the tasks and demands unless they worked together with the rest. This observation that the outdoors was a social leveller is also captured in literature through the Learning Away report (Kendall & Rodger, 2015). The authors of the Learning Away Evaluation report recognised that residentials are a leveller where

- residentials provide a new space and context where participants are equal and existing barriers and hierarchies can be broken down;
- the sense of equity is further enhanced, because participants are engaged in activities and challenges they might not have experienced before;
- the residential context allows students to see different qualities in each other, which impacts on their interpersonal relationships, both on the residential and back in school

(pg 62)

When the outdoor practitioner made the above point, especially when students are experiencing being out of their comfort zone (this will be re-visited in the final conception), the outdoor practitioner described in his online survey question response that such moments required non-formulaic responses from students – "*The outdoors present a dynamic environment that promotes non-formulaic responses"[OPM3]*- meaning to imply that there is no ready formula response for the kinds of situation that they encounter, which mirrors real world situations where in our day to day lives, we confront situations that requires each of us to think on our feet and dig deep into past experiences to recall similar or transferable learning experiences that allow us to deal with the task at hand. In that sense, there is no set formula for each incident, situation, but it requires participants to transform past concrete learning lessons, experiences, knowledge, skills to become useful and confident together with the rest of the team in using a non-formulaic response. As it is observed that in the process of such outdoor experiences, participants learn to

work with others to jointly overcome the issues. Several interviewees, both school teachers and outdoor practitioners place value in this premium opportunity because they viewed such exposure for students to be helpful in the overall foundation setting for students since students will be working in small teams during their educational journey. The first to illuminate the above observation is found in the extract below. The school teacher describes his belief that activities through outdoor education experiences for the students improves their team work and helps them to bond and get to know each other. The teacher explains that through such experiences, students can learn about their friends and be respectful to each other. In recognising this, the teacher believes that the students' school experience becomes better as such bonding can help in their subsequent work that requires group work in areas such as science, maths projects

> And in our school, we always believe in developing someone who's useful for the community ... so **we hope that through this OE [outdoor education], our students can grow up to be more useful individuals. And also in OE there are a lot of activities that we do that, firstly, improves teamwork within the class, helps to bond the class together, and I think all these are useful in the class setting**, eg, when you go back to the classroom, if they are always quarrelling and stuff like that, it's not good for the class; I mean, talking about providing a conducive environment for teaching and studying. So, **we hope that through all this teamwork and activities, right, they are able to learn more about their friends and therefore be more respectful of their friends also. So, all these are good activities for us to apply so that as a whole their school experience becomes better**...**that generally as a whole it would definitely improve things in school or the dynamics within the class**. …, **in particular I think subjects that require group work**, eg, in our school we have this module called authentic problem-solving, where students, **it is part of their science and math projects, where they come into groups and then they have to work as groups, and the teachers, we randomise their grouping** because we want them to get to know their other friends better… **generally**

> **at the start, they are usually quiet, but towards the end there might be some conflicts, because some students end up feeling like they are not respected for their views**, and **perhaps maybe if you were to do some team-bonding activities and, you know, challenges, you know, that encompass team work, okay, or respect, at the start of the session it would help them to become better team players for their team** and this can... that being said, **this can be applied to any lesson that requires them to do group work, eg, because I think that in school, we promote a lot of collaborative learning, and then what better way than to improve their collaboration itself, and that would in turn mean that better work would be submitted as well across all subjects, I would say**. [STM4]

The above observation is similar to a reference made by Kendall and Rodger (2015, pg 27) who reported that improvements in behaviour and engagement in learning as a result of out of classroom experience, were closely linked to the development of relationships with peers and staff, which were transferred back to the school environment. The report also stated that the residential camp for the students acted as an 'ice breaker', where new behavioural norms could be established and then transferred back into the classroom context with associated consequences for improved engagement. Although the school teacher's account above did not state that there were improvements observed in the classroom subsequently, he infers that the potential for it to materialise was there.

An outdoor practitioner and a teacher talk about character development that happens for individuals through the outdoor experiences. The outdoor practitioner talks about holistically developing a person, with reference to working with others while the school teacher points to character development with moral values. Their extracts illuminate this below

> **I see outdoor education as a tool to develop a person holistically other than in terms of academics**. So, it can be in terms of **socially developing a person**,

not so much about physical, but also **how you interact with each other as a person and maybe working together** [OPM4]

when I joined the organization that dealt with adventure and outdoor per se, that's when I came to realise hey you know, **through the outdoors, we can educate people not really in terms of academics but more as a person holistically, you know character development and such** [OPM4]

Necessary and positive change. Have to apply what they have learnt the last two years and put into camp. **Not only develops character, it reviews character**. [STF2]

To me, **outdoor education, in summary, is an educative process to instil moral values into the student such that, ultimately, it strengthens their character**. And, of course, I hope to sow the seeds and to actually let the students be exposed to OE so that one day, when it germinates, then they themselves can be own… They can own the outdoors as part of their lifelong pursuit. [STF2]

A teacher also recognises that elements in the outdoor education programme also promotes students to become responsible for themselves and those whom they are with because of the nature of being impelled to be in a position of discomfort

Now, in the education system, they are more into cohort trips, overseas trips. And then, like the cohort trip they go to Malacca, like the whole Sec Twos [this refers to Secondary Two, which is the second level of progression in a Secondary School in Singapore] go, **I really realise it is very good learning thing. Because the kids get out of their comfort zone. They travel together, and then they are responsible for their belongings, then they are responsible for their own safety. So it instils so much of safety and all that**. [STF1]

Another school teacher describes how he believes students are cultivated to be critical thinkers through an outdoor education experience involving first aid learning. He felt that the inculcation of this critical thinking value is harder to instil through physical activities or sports

> we found out that **through outdoor education, right, it's really a very good platform for students to think and, you know, we are interested in creating students, or rather cultivating students, who are critical thinkers**, and largely, you know, we get students that are able to tell us, like, eg, when we infused first aid into our lessons, and then students are able to tell us, like, what is the relevance at the end, and some of them, like, how they could use it when they get injured themselves. We feel very heartened about that, because we feel that, you know, this is a very good platform for us to teach things that otherwise would be hard to teach in our curriculum, … we have designated time in our scheme of work just to deliver outdoor education, that makes the teaching of outdoor education a lot more meaningful because more funds are placed into it and then more time is placed into it. So we do not have to worry about completing teaching whatever sports to be done, finish for that term, because that term is designated for outdoor education and that itself creates opportunity for us to, you know**, inculcate more of these values that may be similarly hard to pick up when we do... when we teach just physical activities or sports, yes**. [STM4]

The following extracts strengthen the recognition of the value of outdoor experiences to develop team work and collaboration amongst students

> **In terms of instilling this independence and inter-dependence, one of my stronger examples, is when I was conducting a primary 5 camp for gifted education students**. Up to then, their main experiences were school camps and perhaps within the school compound. But **this was the first time we took them out and went to Pulau Ubin** [This is a very well-known and frequented island, located in the north-east of Singapore, known for its rustic and natural

environment that is home to some endemic flora and fauna species] **and my encounter with their teachers and as well as their parents. They talk about that mainly for this profile of students; they are still not used to working with others –** … So, our camp was designed to bring about that sense of inter-dependence. I mean, they are capable enough in their own right but **we need them to harness their strengths to contribute to the team effort. For example, outdoor cooking and setting up the tent**. [OPM3]

The above outdoor practitioner described early on in his interview the recollection of some of the perceived outcomes through outdoor experiences as a Boy Scout to foreground his belief of the value of such outdoor experiences. He says the following

> Even though there was no facilitation or debriefing of whatever intangible learning outcomes from the scouting experience, but of course**, there were other outcomes that surfaced naturally – like working as a team, you know and practising some form of leadership**. Whenever we had our scouting activities. The challenges like the hiking, and some of the meetings that you know, **it did bring out things like resilience and perseverance. So those outcomes just popped up.** Although again nobody was there to guide us through that distillation of the learning. [OPM3]

Another outdoor practitioner believes the reality of the demands of the task in outdoor learning programmes allow students to reflect and come to realise that in order to overcome those challenges, they would have to work together collaboratively with their team mates

> Well I think in, when let's say for example **when you are out there in the outdoors as a group and you are supposed to accomplish a certain task, that experience is very real. The situation you are in is very real, you feel it you see it**. And I think I feel that in this point of time where you say that I don't think I can do this alone. **I have my team mates here. If we come together, we group together as one; we are able to finish this.** So I think the outdoors

presents this real and concrete experience that you don't just see with your eyes but you are in it and you feel it. And **I think that generates that sense that hey you know we have to do this together and not just alone.** [OPM4]

In all the above examples of the extracts of the perceived outcome pertaining to interpersonal development, interviewees believed that when the design elements of the outdoor learning are incorporated into the students' experience, the students are impelled into experiences that require them to work with others.

School teachers and outdoor practitioners also affirm that through exposure to experiences in the outdoors, students are given the opportunity to be healthier, develop their mental robustness and strengthen their resilience. In the first extract below, an outdoor practitioner explains that as a result of more active time outdoors, students become healthier, emotionally and mentally resilient and adaptable

Students become more robust and healthier, as they get more time to be active…also become mentally and emotionally more resilient and adaptable [OPF1]

A teacher describes that as a result of the infusion of outdoor education into the physical education (PE) curriculum, and when they implemented it in the school described below, students were enjoying the activity as the physical education activity of exercising was done through an outdoor walk to a nearby outdoor railway station. In doing so, she felt that the objectives of the physical education teachers were achieved as well as encouraging students to have a positive image of PE

Even this PE curriculum right, they went to the railway station, that railway station that closed. **So, they go there for the walk. And then the students really came and shared a lot of things, you know. They were so happy, then they realised how difficult is it to walk on the pebbles, the hard rocks there**. Then they were asking, why must the train travel when there's such hard rocks? And they realise it was also very scenic. You know, there's the bridge on top, and then the tracks are below. So even for PE, they did a walk, I think

it's about 5 or 6KM. **So it's for exercise, but at the same time there's a lot of nature**. **At the same time they also saw birds. So it was a very good way… They didn't feel the physical pain of the exercise, because they were enjoying themselves, chit-chatting. And they also perspired, so the PE department, actually, their aim**… But at the same time the students didn't feel like, you make them run two rounds around the school, which they dread, and they say, here pain there pain. **But when they came back from that railway walk, they were so happy. So, I think such exercise is better, than making it into like a rigid thing** - you run here, you walk here. …**because the students connect with the activity. They don't see it like an exercise**. Because sometimes exercise, they see it as a punishment. But once it becomes enjoyable, they don't see it as a punishment. [STF1]

A teacher also draws from his personal experience that such outdoor experiences cultivates one's resilience as it did for him back at the time when he was a youth undergoing such outdoor experiences

> **as a student back then, there were certain times when during these activities I was put into situations that I may not necessarily be comfortable** with, eg, personally I was a child who grew up with a fear of heights, and therefore as I was doing the high elements, I was afraid, and, you know, I didn't know what to do, and of course there is that fear over there, but, you know, **but challenging these encounters allowed me to overcome my fear,** and these are things that **even still today as an educator I am able to take away and hopefully also instil some of these, you know, factors such as resilience and courage to overcome some of these challenges and to apply it to life generally as I... as I teach my students**. [STM4]

In the entire data collection, only one school teacher shared critically on the point that the results of such outdoor education experiences cannot be measured. He thinks that achieving such measures would not be feasible within the years of

education that a pupil is in school. He adds to it by raising the commonly understood immediate 'halo' effect of attending camps

> **You see, truly, we know that outdoor education cannot be measured. The KPI cannot be measured. We will probably not be able to see while they are in school, after five years of their education**. …After the camps... **of course we know that there's always this after-the-camp effect**. [STM2]

He explains from the extract below that such experiences do cultivate stronger bonding amongst the students partly due to the teachers' involvement

> But strangely after about, I think if I am not mistaken from last year it was, **we can see that the bonding is getting longer, in fact it is getting longer. That is also due to the fact that the teachers are there, very involved**. [STM2]

And expresses his uncertainty on the effect of such outdoor experiences programmes

> I wouldn't know until the result of the exam. **I want to see whether they translate this resilience and all those through their other academic, whether is it transferable? Or is it being transferred or not? I wouldn't think that it is going to be, as for now, because we are still infancy, four years, one cycle.** If we have a chance to do this even more, and more involved, that is what we should be able to see those values or not. [STM2]

Outdoor practitioners interviewed also spoke about the role of risk taking that outdoor programmes afford by design. They endorse and affirm that outdoor education programmes inculcate in participants an appetite for healthy risk taking through a need to check on the level of structure introduced to outdoor learning. Their extracts below explain this

> So, I think the environment clearly has to be safe. Safe emotionally doesn't have to be... I know it's a bit controversial. It doesn't have to be physically. Because I think some level of risk and some level of... **I think positive risk should be there, so that our senses are heightened, as well**. **And I think, for**

me, what is in all the Outward Bound programmes that I've done, the environment, in my perspective, may not be safe. When I was in New Zealand and we had the sailing team, I had no clue about sailing. And we had bad weather, so the boat was always rocking and there was no wind. We had to paddle most of the way, wherever we were going. And I was cold. I was freezing**. I was definitely not in my comfort zone. I was already shutting down, mentally. But when, at the end of it, I did it.** I sat through it. Did I like... I may not have liked it, but **I learned a new skill. And I saw how my friends dealt with it**. **At the end of every difficult day, there was still camaraderie. We didn't hate each other. And so, I think that, in relating it back to real life, don't take things too personally.** [OPF1]

I think for schools **we need to remind ourselves that the students… children or the students of that particular age group, should be encouraged to seek and to be curious and not be bounded by a set of learning outcomes**. I mean not to discount the value of learning outcomes, yes, it's good for structuring the experience but we should remember not all kids also learn within a set boundary... The challenge is how to incorporate and encourage that curiosity so that they won't come away with a lasting or permanent negative experience or impression of the outdoors. **If I may add on that "curiosity" I guess inherent to that word is "risk taking"**. So how do we encourage that? I mean back then again then you and me, when we were younger, I mean your usual, you know climb in to 'lonkang' [this is a sewage tunnel], look at the guppies, go to the fence and stick our hand in the bush to try and find spider, that all that involve risk taking. But now the teachers say don't go into that 'lonkang', don't go into that bush so where is that lah ['lah' - this is a local slang that is used to liken to 'mate']. **So, I think the biggest challenge, if I were to observe what is going on to outdoor education industry with regards to school learning is that this healthy risk taking – how to inculcate healthy risk taking**. [OPM3]

The recognition of the value of impelling young people during outdoor education experiences to confront discomfort and manage risk as part of their overall growth resonates with the English Outdoor Council (2010) research findings that reports

> There is a growing groundswell of media and public opinion that recognizes that risk is an inescapable aspect of life and that, instead of wrapping our children in cotton wool, we should help them to take greater responsibility for managing their own safety. The Risk and Regulation Advisory Council has published a very positive report which deplores disproportionate responses to risk and regulatory creep. We endorse the Council's efforts to signpost the way to achieving a consistently balanced societal response to risk.
>
> (pg 4)

The views of the outdoor practitioners in this study particularly resonate with the English Outdoor Council (2010) report which stated

> A risk-averse approach is discouraged. Instead, readers are encouraged to balance the risks and the benefits from an activity. Unnecessary risk aversion is an insidious influence which is damaging to enterprise and initiative.
>
> (pg 4)

The above point was observed by one outdoor practitioner who expressed his concern that some of the local stakeholders involved in outdoor education programme implementation are overemphasizing safety management at the expense of personal growth for the children. This is captured in his views below

> And **I feel that in Singapore that a lot of perceived risks have been seen as real risks which is quite disturbing. Because of these risks being perceived as real risks there's a lot of things that the kids will not be able to try out. And due to that, their learning has been stopped to that level. They're not able to move on to the next level or learn what is it that you can do next**. So, there are a lot of, safety issues. There's been input from industry players and all of that. A lot of that shouldn't be done, and that shouldn't be done. **An example would be… I mean…if a kid were to fall in overseas, people would say, it's okay, just get up and you've got to carry on. But in Singapore they will stop the kid from even falling down. They will actually do ways and**

> **means to make sure the kid doesn't fall down. So, I feel it stops the kid from knowing the kind of pain the kid is going to feel when you fall down, you see.** So that is the scenario that's been happening right now. [OPM2]

The above statement echoes a point in the English Outdoor Council (2010) report through a quote by sociologist Frank Furedi (2002)

> This worship of safety has influenced attitudes towards all aspects of life. It has fostered an inclination to continually exaggerate the problems facing society, which in turn has encouraged a cautious and anxious outlook. (pg 147)

In reviewing the hierarchical connection of conceptions between the first and second outcome space of this study, I wish to make reference to two statements that have made significant contribution to the outdoor education literature. The first is a reminder by Rickinson et. al. (2004) that effective and well-intended fieldwork can also lead to individual growth and improvements in social skills

> Well-taught fieldwork can lead to reinforcement between the cognitive and the affective domain with each influencing the other and providing a bridge to higher order learning. (pg 24)

The second is illustrated by a statement from the House of Commons Education and Skills Select Committee (2005) which recognises the multi-outcomes that outdoor education achieves

> Outdoor education contributes to learning in a range of areas, including: science and geography fieldwork; physical education; learning through outdoor play, particularly in the early years; history and citizenship, through visits to museums and heritage sites; art and design, through visits to galleries and experiences of the built environment; environmental and countryside education, and education for sustainable development; practical or vocational skills that cannot be practised in a classroom environment; group activities that build self-confidence and social skills; and the use of the environment as a tool to enrich the curriculum across subject areas. (pg 6)

The above quotes have relevance for this study and are appropriate at this juncture, in connecting the first and second outcome space of conceptions how reinforcement takes place and how bridges may be built between different domains. Teachers'

teaching and promotion of first hand experiences through the outdoor environment are significant. In a Norwegian study of schools that locate teaching outdoors on a regular basis, Jordet (2007) reports that the interaction between theoretical knowledge and realistic, hands-on experiences is crucial for successful teaching and makes a distinction between success and failure for many students. The opinion of the teachers and outdoor practitioners in this study is that the physical and practical learning activities that happens in the outdoors contribute to improve students' cognitive, affective, social, and physical development and open new opportunities to learn. However, more research is essential to demonstrate in what sense teaching outdoors affects cognitive, physical, and practical areas (Jordet, 2007).

For this second conception of the belief on the value of outdoor education, eight interviewees out of eleven interviewees held this belief with the dimensions of variation. This also seems to indicate this as a strong value of outdoor education. Of the eight interviewees, whose response were captured within the variation in the dimensions, four out of six made up for the school teachers and four out of five made up for the outdoor practitioners. All the female interviewees, comprising two school teachers and one outdoor practitioner continue to be fully holding similar beliefs with the variations in the dimensions. As previously stated, further research and analysis is needed to establish what this means.

4.2.4 Preparation for students' future

The last conception by teachers' and outdoor practitioners' beliefs in the value of outdoor education builds up from the first two conceptions to position outdoor education experiences as a platform that gives exposure to students that will be useful in preparing them for the uncertainties of the future when they are an adult - *"I think that's one important value that students, in fact, can bring back as an adult" – [OPF1]* or when learning from mistakes and experience is valuable to effect transfer whether it is at school, or organisation -*"I see that happening in our place, or I see that happening in my school. And how do we transfer that? – [OPF1].*

4.2.4.1 Characteristics of outdoor education element

The following extracts from two outdoor practitioners describe how outdoor education experiences help to prepare young learners when they are an adult. Both practitioners describe the value of current experiences in preparation for the future when the students are adults, alluding to how the learning from such experiences can be transferred and made relevant to help them confront such challenges in the future

> **Whether it is for the good or the bad. And during that moment, the kind of things that you can learn and bring out of it will actually really help you when you go**…When you become an adult and all of it, because there will be many instances where you'll be put in a crunch time and you need to make a decision. **Now, if you go through that crunch time in a similar setting, and you learn about it, when the real crunch time happens, you will know how to handle them**. **And that is what I learned. And I think that's one important value that students, in fact, can bring back as an adult, you know**. [OPM2]

A hint of the transformational (Mezirow, 1975) potential of such outdoor experiences seems to be emerging from the outdoor practitioner's account above. The transformative learning process, according to Mezirow, is "…learning through action [by] deciding to appropriate a different meaning perspective" (1991a, pg 56). It is through "active dialogue with others to better understand the meaning of an experience" (Mezirow 2000, pg 14) that people may make a transformational change. Familiar experiences based on habits of expectation and new experiences that challenge old meaning perspectives can be better understood when critical reflection is used to interpret experiences. Mezirow mentions that "Transformative learning is learning through action, and the beginning of the action learning process is deciding to appropriate a different meaning perspective" (Mezirow 1991a, pg 56).

From the following account, an outdoor practitioner describes the value she sees of individuals being able to learn from mistakes. She believes this allows individuals in

organisations to feel safe about failing and to learn from it going forward and such a spirit about learning from experience should be shared with others, so that they may benefit from it

> And as I said, the, whether it's a journey-based outdoor programme the actual environment does create some things, for example, that naturally, it's a bit more challenge. If not, then the question is, how do we as practitioners then have our bag of tools **to actually create a similar problem-solving activity to heighten the awareness. I see that happening in our place, or I see that happening in my school. And how do we transfer that? And the transference of learning option is that strongly about is where the creation of that safe space and environment, whether outdoors or indoors, is definitely. So, then we'll feel safe enough to say that, hey, I made a mistake. But I learned from it. And I can see this happening everywhere a lot of them being the incidents, or, yes, I made a mistake. So what? It's not relevant to my organisation or. It's a sin to not be… not be involved. So, enough space and allow them to... We need to share learning**. [OPF1]

This is not surprising as outdoor practitioners running outdoor education programmes tend to associate metaphorical transference and applications of the outcomes and experiences to the current outer world to reinforce the value of such physical experiences to demonstrate its relevance and applicability to the future. From accounts shared by the teachers and outdoor practitioners, they recognise and affirm that the outdoor experience has usefulness beyond its immediate encounter. Such encounters and moments are seen to provide students with relevant life preparation experiences that strengthens their ability to deal with future incidents. The following extract from one of the outdoor practitioners alludes to the point about being ready for the future

> You were talking about like behavioural norms, decision making, adversity, you know, EQ, that's what they call it. You know everybody looks at EQ, but nobody looks at EQ. So that is one thing that, you know, we can look at as

well. And **of course, our planning for the future. You know, what exactly future hold for you**? Yes, your subjects are going to help you, but what exactly is going to hold for you and **how are you going to use this to bring over that**? **Which is the relation that people are looking at and that's where OE will help you**. [OPM2]

A teacher and outdoor practitioner also recognise that outdoor experiences which includes elements that places students to deal with unfamiliarity, requiring them to work in different environment and work with different people during the experience, places a demand on them to adjust, adapt and strengthen this as a life skill. Inherently, it reveals a belief that teachers and outdoor practitioners have about the universal advantages of the design considerations in outdoor experiences that is future oriented as captured in this extract

work in a different environment with different people…because you have to be well-adjusted…**it will build your character and you carry on for life. It's a lifeskill**. [STM1]

The outdoor practitioner makes an interesting connection by tracing the original purpose of Outward Bound which sought to prepare young seamen for the rigours and demands of wartime. She goes on to draw parallel in current times to describe that just like how Outward Bound was started to prepare young seamen to survive the war environment at sea, outdoor education programmes can be viewed broadly to prepare young people how to be a human being to be prepare for life ahead

I think I go back in a more philosophical way. **Kurt Hahn started Outward Bound because of the need to train sailors to be more seaworthy when they are at sea, rather than dying. And what he realised is, for the younger ones, the younger seamen, are the ones who are dying. Not the more experienced seamen.** So when Outward Bound school was first started, it was really to provide that platform for the younger seamen to gain the experience before going out to sea, to be able to at least survive. **If I look at outdoor education from that perspective, it's really to provide the platform and the avenues**

that youth, or anybody actually, to gain some form of simulation of how that life would look like. Once they graduate from school, once they change careers. It's really... **I see it as a leverage for people to learn how to be human**. … **The journey is whatever you do in outdoor education is just a platform for you to have over your actions**. [OPF1]

4.2.4.2 Perceived outcome

Two teachers and an outdoor practitioner also shared that because of the outdoor education exposure, students grow to be sensible, have a good understanding of what is important in life and cultivate a balanced perspective in the matters they are passionate about. Both acknowledged that the value of outdoor education programmes is being able to immerse the learners in an environment of learning and development that opens their minds and expands their view and perspectives about issues that are being confronted and experienced. This connects to the point that such experiences are an excellent preparation for the students on the demands of the future and outdoor education experiences prepares them by giving them lifeskills to deal with such situations

It definitely expands their view and perspective about things and life [STM4]

Students become more grounded and more able to take a balanced worldview. [OPF1]

Outdoor education provides **a platform for certain lifeskills to be taught** [STM1]

Adding to the above, an outdoor practitioner explains how the outdoor experience would be able to provide an insight to the students about how and why people are as they are and why the world can be unforgiving, hence alluding to the benefit of such insights for students when handling future incidences of a similar nature

> This main point [referring to the value of outdoor education experiences] **will give them many reasons to why certain people react certain way and why the world is unforgiving** [OPM2]

An outdoor practitioner makes the link between the original purpose of Outward Bound and the actions of the local Singapore government which support outdoor education programmes and initiatives to see the larger benefit of building the next generation of Singaporeans to compete against the bigger, experienced and established countries ("*giants of the world*")

> So, when Outward Bound school was first started, it was really to provide that platform for the younger seamen to gain the experience before going out to sea, to be able to at least survive. If I look at outdoor education from that perspective, it's really to provide the platform and the avenues that youth, or anybody actually, to gain some form of simulation of how that life would look like. Once they graduate from school, once they change careers. … The journey is whatever you do in outdoor education is just a platform for you to have over your actions. **You are a little bit more prepared when you are there.** We do exhibit that. It may not be leaps and bounds. Some people won't, so that your survivability really is actually tried. And **I think, from a government perspective, it's being able to see the possibility of helping our next generation be more seaworthy, in the sense, in terms of politics, in terms of how do we survive the giants of the world**. [OPF1]

Finally, to summarise the essence of this conception, an outdoor practitioner gives a brief and precise point on his belief about how outdoor education experiences are about getting students to be able to cope with the uncertain and harsh reality in later part of their lives, making reference to when they are no longer a young person, but grown up to be a matured individual who deals with the day to day issues

> **Help students cope with reality in later part of life** [OPM1]

In concluding the review of the study participants who have given their views in response to the first research question which form the third conception of the belief on the value of outdoor education with the variation in the dimensions, five interviewees out of eleven interviewees who described their belief with the variation which this analysis brought about seems to indicate this as not a commonly held belief about the value of outdoor education. Of the five interviewees, whose response were captured within the variation in the dimensions, two out of six made up for the school teachers and three out of five made up for the outdoor practitioners. Only one female interviewee, who is an outdoor practitioner contributed to this belief within the variation in the dimensions. Once again, as previously stated, analysis of gender responses and its meaning is not within the scope of this study, further research is needed to establish if there is any meaning to be gathered.

4.2.5 What are the sources that influenced teachers' and outdoor practitioners' belief on the value of outdoor education?

The second research question of this study follows on from the first research question which seeks to find out what are the sources that influenced school teachers' and outdoor practitioners' beliefs on the value of outdoor education. Data is extracted from the both the open-ended questionnaire – (*Question 9 - "Describe what influences your beliefs about outdoor education?"*), and during the semi-structured interview (*Question 1: "What are your early encounters of outdoor education and when did this occur?"; Question 2:" What did outdoor education mean to you as a result of those encounters?"; and Question 4. "Are there any particular socio-historical reasons that had an impact on your views and beliefs about outdoor education? I would like to hear more on this from you."*). All 11 interviewees shared that they had an outdoor experience when they were in their youth. They described their early encounters very candidly and recounted their vivid memories of their experiences, which for several of them happened more than 20 years ago, (*Question 1: What are your early encounters of outdoor education and when did this occur?*).

The 11 interviewees then shared how those early encounters impacted their own meaning of outdoor education (*Question 2: What did outdoor education mean to you as a result of those encounters?*). These early encounters with the outdoors had formed their impressions of outdoor education, which have been fully presented and analysed in response to the first research question, in the first section of this chapter.

After reading the data several times, I began to group similar descriptions together and assigned a theme to each of these collections. I did this intuitively and was careful to look through both the subjects' responses to the open-ended questionnaire that was relevant to the second research question of this study, as well as pouring over the data that was obtained to the semi structured interview question that attempted to explore other factors (socio-historical reasons) that could have also influenced and shaped their beliefs about the value of outdoor education. The analysis resulted in the following key themes from the data set. The following are the themes that emerged as the sources that had an influence on teachers' and outdoor practitioners' beliefs about the value of outdoor education:

a. Personal experience
    i. Family upbringing
    ii. Past co-curricular participation in uniform group (Boy Scouts)
b. Professional experience
    i. Reading widely on outdoor education research and literature
    ii. National authority support and political advocacy

4.2.5.1 Personal experiences

There were different ways in which outdoor practitioners and school teachers expressed their personal experience and how this influenced their belief. First was a school teacher, who wrote in the open-ended questionnaire about the useful-ness gained from his outdoor education experience, and a strong conviction that those

outdoor education activities and experiences provided deeper reflections about life which influenced his beliefs about outdoor education,

> I believe in outdoor education because it was through OE related activities that I learnt a lot about life, and useful skills. [STM4]

He elaborated this further in the interview with examples about what that meant, citing the approach in outdoor education experienced that was presented as a challenge, that did not feel as if he was forced to respond, but felt impelled to respond, because he accepted the ownership and his role in making an informed decision,

> then it was doing the camp, it was a leadership camp, and then, you know, in that whole platform where I felt that I had to pick up the challenge. And then the teachers, they weren't pushing me, or the instructors, they weren't pushing me to go for it or forcing me, it was more of a challenge... challenging the process kind of thing. It's whether am I ready to accept the challenge, and which I did. And then I would say after that I was able to... overcome a lot more of the high elements that came in JC [Junior College – this is a level of education for youths in Singapore that determines entry to University] and then in uni [University] days, and then I was able to treat it more comfortably this time now, and it's all thanks to this experience that was given, which was challenging to me and definitely something that was new, because it was something that I would not have experienced if I had not gone for the camp, eg, therefore I explained about the venue being somewhere that is... or, rather I wouldn't say venue but the circumstance and the situation is something that is new and maybe something that was previously unknown to the child, yes. Okay, I think this would really largely probably stem from me being an active person as well. I would say that my family members, they aren't exactly the most active of people or, you know, really into the outdoors, but since I was young I have had this... I have had this, like, love

> towards the outdoors, going out cycling, doing mountain biking and then trekking and stuff like that… [STM3]

Next was an outdoor practitioner, who responded very briefly in the open-ended questionnaire that it was his life experience that influenced his beliefs about outdoor education, which became difficult to know where he was coming from.

> My own life experience [OPM1]

I was not sure if he referred to his years living, or years involved in outdoor education. Upon seeing his profile, he turned out to be in his late-30s and had over 10 years of outdoor practitioner experience as an independent practitioner. When he provided further elaboration during the interview about the personal gains he received through the risky opportunities he was exposed to in the past when experiencing the outdoors, and how it shaped his belief on the power of such autonomy afforded to him, it began to make some sense

> Probably, the introducing of those law and order. So when, for example, come to deal with some big organisation… Okay, during my time in poly [Polytechnic], we do things on our own. So the staff is basically someone who asks for money, they say, and running a programme is all done by student. So, when I join, the senior, so called, two, three older than me or one or two year. So, we just come together and run the programme. We plan. We do, all this. So, like safety sometime we might a bit overlook, but we really learn a lot because the staff don't involve. Then, after that like four, five years ago, I come to know that even the poly [Polytechnic – this refers to an institution of higher learning] implement the strict safety standard, which they say one must do this, must do that. And to me, it's, yes, totally change my view. I mean… When you… Because when you do this thing, then if… I was thinking, if during that time, you implement this act, I might not be what I am today. I might not have gain so experience of, so much experience I got. [OPM1]

From the above, he was relishing that he is what he is now because in the earlier periods, strict rules were not imposed when it came to students' role and involvement in the conduct and running of outdoor education activities. He compares it to now, where much restrictions are placed on how outdoor activities can be organised and conducted. He admitted that he would not be how he is now if not for the oversight of safety. On reflection, it appears that this outdoor practitioner affirms that a risk averse approach would not have benefited him, similar to the earlier observation made by the English Outdoor Council (2010) and Furedi (2002).

A female outdoor practitioner explains how her numerous personal outward bound experiences that led to personal discovery, capacity building had widened her own horizons which influenced the beliefs she held about outdoor education,

> I am the product of outdoor education. My experiences through Outward Bound (Singapore, Australia and New Zealand) brought me through the process of self-discovery, self-acceptance, competency building and widening my horizons to things bigger than myself, and thus the greater appreciation for the environment and nature at large. [OPF1]

She spoke further on her encounters with parents, teachers, principals which gave her the conviction in the value of outdoor education and its benefits. This certainty comes through her narrative in the interview,

> And I think it is, it's not so much just about whether there's an exposure to outdoor education or not. It's all about, it's a parenting value. How parents decide to bring their kids up. So, there's again another shift. So when I look at my nephews now, and their generation now, the parents are becoming more aware that kids need to have a little bit more, like, so if they run, they fall, that's fine. It's the grandparents who cannot get that. The grandparent's heart stops when the child falls. So, there is, again, another shift. If the opening of all the top, those pieces that we, what we rely on now. All young parents are bringing. It's that time and space for spending with nature. [OPF1]

A male teacher recalled his active involvement in outdoors during the formative years when he was a Boy Scout, a member of the outdoor adventure club in junior college years (17 to 18 years old) and having worked as a camp instructor that had an influence on his beliefs about the value of outdoor education,

> Having a uniform group background (Scouts), being part of the Outdoor Adventure Club in JC [Junior College] and also having worked in the Outdoor Education industry (Camp Instructors) [STM3]

He revealed further on the influence of his family upbringing who encouraged him to freely explore the outdoors that had a massive influence on his belief on the value of outdoor education,

> I think it's... You know, the growing-up process within my family was, they were very open as far as going out to play. Not just confined to the family space. I think this is one of the, throughout the growing years, the kind of values and identity that the persons instilled in us. Not so much instilled, but exposed us to that we are free to play, we are free to go out of our place, go to the playground. Go to any places that are calling to you. Also, my parents were very open to us going for overseas trips, going for climbing mountains in other countries and stuff. So, I guess that was what, in a way, shaped me towards my belief in outdoor education. [STM3]

Another male outdoor practitioner in his reply to the open-ended questionnaire recounted his personal experiences, and included his Boy Scouts experience that is part of his personal experiences to influence his belief on the value of outdoor education,

> a. My personal experiences of the outdoors from my youth; b. My professional experiences; c. My personal observation of how outdoor education programmes positively (and also negatively) impact participants [OPM3]

He tries to make sense of his past personal experience and how it had an impact on his decision to be an outdoor instructor, and its subsequent influence on his belief on the value of outdoor education, which he articulates in the following two paragraphs

> OK, well I should say that, I should say first of all I should say that I suppose that scouting itself did not by itself propel me or cause me to choose this path as an outdoor practitioner although it was a key influencing factor. Another experience I had when I was in my 20s, after graduating, I spent a summer in US, doing a summer camp. And again that camp was largely recreational but it was my first sustained exposure to that profile of participants, you know younger children in their formative years and I was doing rock climbing and zip lining with them. And it was my interaction with them that also made me discover that I have some affinity for having this sort of relationship with these participants in the, specifically in the outdoors environment. So the scouting and this time in the US – both of them combined to spark in me that this thought that I might be able to do this as an outdoor practitioner. [OPM3]

and,

> Socially I guess, speaking for myself, I had a relatively free upbringing that is to say my parents largely let me do my exploring without too much interference. My neighbourhood where I grew up was, we were on a landed property, at that time we were surrounded by some kampongs [this is a word from the local Malay language which means villages, backyard] and so my friends and I would freely we would cycle around and explore. In of course, historically, I suppose in primary school, you know we certainly didn't face so many restrictions as perhaps students now. When we go out when it was recess time. I mean we had... There was one time; the school installed these ropes from trees that we could swing around on. And you know recess time was, we would rush down because we were so excited about these ropes. And teachers were not present and there were no teachers present to

> supervise. And we could really just do our thing and we even slide down the slope at our school premises. You know the grassy slopes... They were steep enough and we would find cardboards and slide down. And the only reason the teachers stopped us was the principal said you are wearing out my grass. Not because it was unsafe or risky. That as the reason. So, I hope that's the 2 perhaps dimensions to it. [OPM3]

Hence the extent of freedom which he experienced through Boy Scouts, the summer camp in the USA, the freedom to explore in schools, had a profound impact in creating such a belief about the value of the outdoors.

This next outdoor practitioner provides an interesting account of what influenced his beliefs. He explains that it is the outdoors and nature which is able to appeal to all his senses, to enable him to realise there is much to be gained that convinces him of his belief,

> The outdoor world influences everyone. It influences me every day when I step out. Every single time, I learn a new thing that the nature can offer. As we open all our senses we tend to realise there's a lot more to be learnt. This understanding is what Outdoor Education is trying to bring to the students. [OPM2]

He gives another perspective to what else influenced his belief on the value of outdoor education by talking about outdoor experiences being able to put individuals through adversities, which gives individuals an opportunity to work out solutions and, in the process, move on and move out of the adverse situation. He cites his own example and examples where he has witnessed how such moments of adversity has allowed kids to be out of trouble (gangsterism due to single parent background as an example), and paved the way for them to become positive individuals who want to become better,

> the thing is, I feel adversity changes a man, you know, to who he is going to be. So, this adversity is the one that makes the person to appreciate what

> they have a little bit more, you see. When you go through that adversity you tend to learn about yourself and be better, what is it you can do and all of that. So, outdoor education does that, you know. They put you through different adversities and then try to see how can you work it out, and then you move on from there. Similar context, you know, same adversities has gone through for me, also. And because of that when I go through such adversities, right, when I look back and I see that, actually here, you know outdoor education does teach you that. So, it makes me a better person. You know. To say that, yes, it does make you a better person. Example would be kids who has got only one parents, and all that. Many of the times you afraid of them turning into bad kids and all of that, going into gangsterism and stuff. But on the other side we can actually see them becoming better people, wanting to change the way they work and not becoming what was actually thought of them. So, this mentality was given to me, based upon outdoor education. Because actually adversities mean that you can take it up and work around it. Be positive about it. That is how I think. Yes, connection is that I was able to make because of outdoor education. [OPM2]

The above points that he brings up is a follow up to his statement where he felt very strongly about the overly risk averse and safety conscious culture that has been promoted by one key stakeholder, the Ministry of Education (MOE), even though they advocate and support outdoor education,

> And I feel that in Singapore that a lot of perceived risks have been seen as real risks which is quite disturbing. Because of these risks being perceived as real risks there's a lot of things that the kids will not be able to try out. And due to that, their learning has been stopped to that level. They're not able to move on to the next level or learn what is it that you can do next. So, there's are a lot of, safety issues. There's been input players and all of that. A lot of that shouldn't be done, and that shouldn't be done. An example would be… I mean, a simple methodology, not methodology. Metaphorically, if I could say,

> if a kid were to fall in overseas people would say, it's okay, just get up and you've got to carry on. But in Singapore they will stop the kid from even falling down. They will actually do ways and means to make sure the kid doesn't fall down. So, I feel it stops the kid from knowing the kind of pain the kid is going to feel when you fall down, you see. So that is the scenario that's been happening right now on that level. They're not able to move on to the next level or learn what is it that you can do next. [OPM2]

4.2.5.2 Professional experiences

A female teacher recounts the fact that as a pre-service trainee physical education teacher, the fact that a module on outdoor education was included in their training affirmed and influenced her belief on the value of outdoor education as it was part of the curriculum and supported by the local authority,

> Yes, a module. Yes. So, all of us had to attend the module and it was… And it… The last event on that was the overseas outdoor adventure trip. So, throughout the module in our NIE [National Institute of Education – this is an institution that offer pre-serving teacher training in Singapore], it really strengthened my own self-belief and, as a teacher, when I graduated I know this is the benefit of OE that I'm going to bring to the students. [STF2]

She stated in the open-ended questionnaire, that there was also political advocacy given it has received strong political mandate from the Minister of Education in recognition of the character development it is able to bring about,

> Glad that it has become a national mandate (following minister's speech) to outdoor education in schools as a tool for character development. [STF2]

I view this with caution. First, on how politicians' message and words may be taken as the truth and second, the message that character is built through outdoor education should be adequately discussed and clarified, especially where there is

ongoing debate on its evidence supported by questionably designed research design and instruments purporting to measure such outcomes. Brookes (2003a) contend that "*such results are to be expected; individuals can become a 'different person' in certain situations, but those differences are not predictive of behaviour in other situations." (pg.56).* Brookes (2003a) exhort us to be careful with

> claims that OAE programs change how individuals behave; but they severely undermine accounts of OAE that claim such changes are dispositional, not situational. Changes observed in OAE situations are not predictive of changes observable on leaving the OAE situation. Character building has been a remarkably persuasive and appealing slogan but is flawed as a basis on which to base substantive claims for OAE. (pg 59)

I firmly believe this is where education, dialogue and discussion based on research locally should be pursued by Singapore researchers to verify the veracity of such claims. Such a gap calls for researchers in Singapore to embark on studies locally to deepen our understanding if indeed such claims on character development through outdoor education are valid and to further determine what we mean by these terms.

A diverse expression of professional experiences causing the belief on the value of outdoor education comes through a school teacher who attributes mentors and passionate people who gave their time to mentor and guide him in his formative years just starting to get to know outdoor education initially and planning to implement it in school,

> Mentors during my training as a PE Teacher, mentors that I have worked with throughout my time as an educator. The people that I have worked with that are passionate about the outdoors. [STM2]

He further extols the value of personal research and reading which deepened his knowledge on outdoor education and had a role in influencing his belief on outdoor education,

> Because I am very sure after I've researched all these things. And I am immersed with this framework. I start to question that, why wasn't this done earlier [STM2]

He is not the only one who was influenced by reading outdoor education research. An outdoor practitioner also mentioned this in the open-ended questionnaire on how research due to writing essays for a master's course helped him to reflect on this,

> Having been an outdoor practitioner for close to eight years. Having don some research and written essays in my time undertaking my Masters. [OPM4]

In the interview, he elaborated on the years as a practitioner which had an impact on his belief on the value of outdoor education,

> But as I was down on the grounds as a practitioner for that four and a half years, and I saw how the outdoors could lift that kind of experience for people who go through it, that I guess got me thinking about how is the education system here really doing much in terms of holistically developing our younger generation or are we just gearing them up for paper qualifications you know and then when they come out, yup you have the paper but what about the character, what about the person as a whole. So I guess through that 4 and a half years, that's the impact they had on me and I guess that's what also pushed me to want to further my studies in education since I have the experience in the outdoors as a practitioner and I want to see the other side of the coin in terms of education and see how I can hopefully marry this two together. So, I guess that's the general impact that it had on me through my experience as practitioner on the ground. [OPM4]

A male teacher gives another perspective on how his efforts to enable his peers and students to share the joy experienced whilst in the outdoor environment after an arduous journey [climbing a mountain], which has an impact on his belief on the value of outdoor education

> I think for me my beliefs in outdoor has been quite consistent. Only strengthened even more because I continue to get myself involved. And at a personal level, I've climbed a few mountains, it's not fantastic mountains. It's just some of the last… I think last two years I brought a group of teachers up

> Mount Ophir. And it was… I mean, the view up there is really fantastic. But what's more fantastic is to see your colleagues enjoying it. So that's just strengthened my resolve. You know. To get there was not easy and I feel very proud to be able to bring a group of teachers to share the joy which I experience. And I want them to experience the same thing. This year, I mean just a few weeks ago I brought a group of students up. Unfortunately, but there was thunder and lightning and we had to turn. So, we did not make it to the summit, but we brought them up three-quarter of the ways. So, it just strengthened my resolve about education. [STM1]

The above accounts resonate strongly with literature on the sources of teachers' belief by Richardson (1996), who highlighted three major sources of teacher beliefs: personal experience, experience with schooling and instruction, and experience with formal knowledge –both school subjects and pedagogical knowledge. Several other writers have also highlighted that teacher beliefs may develop because of years spent as a student watching and participating in classroom interactions (Feiman-Nemser, & Floden, 1986; Gunstone, 1989; Joram & Gabriele, 1998; Mertz, & McNeely, 1991). The many years spent as classroom observers have provided teachers with experience and insight to develop their own personal theories and powerful conceptions about teaching and learning (Dart et, al., 1998), and relating to the experiences arising out of outdoor education programmes in the context of this study. Researchers (Hollingsworth, 1989; Powell, 1992) consider these previously held beliefs and conceptions act as filter for interpreting their classroom experiences. In the context of this study, the application would be in relation to how their past experiences arising from outdoor education programmes (personally undergoing outdoor education programmes, observing their students in outdoor education programme and activity situations conducted by themselves or observing their students experiencing outdoor programmes conducted by external providers) could act as a filter for interpreting their current beliefs about the value of outdoor education for students. The personal experience connection which study participants have recounted have played a major role in them being able to recognise the

multitude of value that outdoor education is able to have on students. All of the teachers also cited their own students' reactions in such outdoor experiences that had an effect on their own beliefs, as they often quoted examples of their students. All teachers were positive of the national policy to integrate outdoors into physical education, except in the way it was implemented by the Physical, Sports, Outdoor Education Branch (PSOEB). These are congruent with Fives and Buehl's (2012) external factor that support, or hinder teachers' enactment of their beliefs mentioned in Chapter 2, section 2.6.2

Providing first hand and first person lived experiences in the outdoor as a strategy is aggressively pursued by the Ministry of Education, which revealed a National Masterplan for Outdoor Education and as part of this masterplan, all secondary three students will attend an outdoor education experience at Outward Bound Singapore from 2020 (Straits Times, 2016). The strategy for such a national masterplan approach is not new, as Beames et al. (2012) brings to attention that

> In many parts of the world, the outdoor learning movement is no longer something driven exclusively by inspired teachers and principals seeking more meaningful ways to experience, learn, and know; governments …are starting to take a much greater interest in the increased learning opportunities offered by moving beyond the four walls of the classroom. However, this interest needs support if outdoor learning is to flourish
>
> (pg 5)

We should also take a leaf from Beames et al. (2012) in making the statement about sustaining such interest with support if outdoor learning is to bloom and impact students learning in meaningful ways. Towards that, I have some reflections on the direction of the Ministry of Education's efforts and will offer some views in the concluding chapter of this study.

Chapter 5

Conclusions

5.1 Introduction

This study aimed to investigate the beliefs on the value of outdoor education of school teachers and outdoor practitioners. The findings as conceived by a sample of 11 study subjects comprising six teachers and five outdoor practitioners were presented in Chapter 4. Each participant was interviewed regarding their beliefs on the value of outdoor education. The interview transcripts were then analysed using a phenomenographic approach to explore the variations in meaning ascribed to their individual experiences of outdoor education. Several salient beliefs were identified that, when focused on and simultaneously discerned by individuals in specific ways, contributed to the conceptions of the beliefs on the value of outdoor education in the city-state of Singapore. Three different beliefs on the value of outdoor education were identified and arranged hierarchically within an outcome space along with dimensions of variation. These results have been discussed and examined in the previous sections. The main findings are summarised below and the implications for outdoor education in Singapore and future research are suggested.

5.2 Overview of findings

The two primary research questions for this study were: *1. What are Singaporean school teachers' and outdoor practitioners' beliefs about the value of outdoor education?* and *2. What influences their beliefs?* Although teachers and outdoor practitioners may personally experience outdoor adventure programmes and organise or conduct such experiences for students, they express variation in their beliefs about the value of outdoor education. As stated, the findings of this phenomenographic study outline three qualitatively different categories of description of the value of outdoor education experienced by teachers and outdoor practitioners. The findings align with Marton and Booth's (1997) suggestion for phenomenographical research outcomes whereby a limited number of categories are presented to reflect a collective description of variation. Each category is

discussed with thoughtful deliberation given the nature of experience as informed by the variations of meaning that exist within and through each category. As a figurative model shown at Figure 5.1, I illustrate how the three beliefs are organised in a nested hierarchy (a concept I had introduced in Chapter 3, section 3.8.2). Each of the three beliefs are described in the following paragraphs with critical discussion to illustrate further insights.

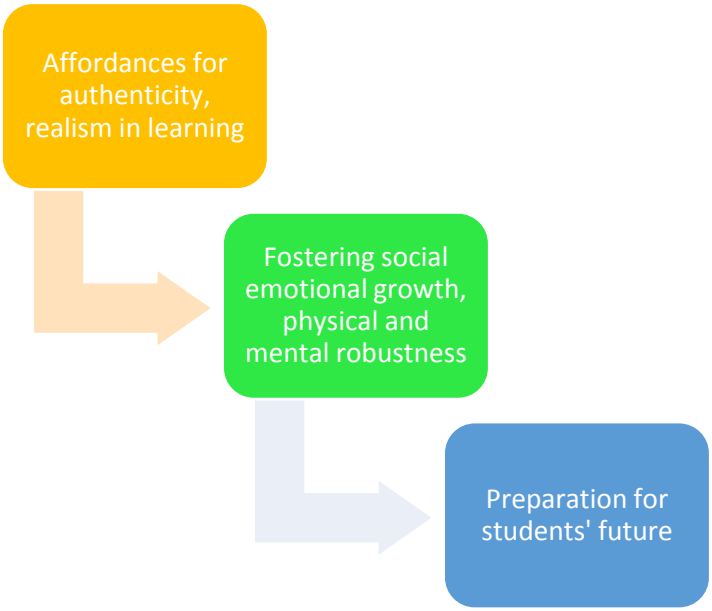

Figure 5.1: Singapore school teachers' and outdoor practitioners' beliefs in the value of outdoor education

(a) Belief in value of outdoor education as providing affordances for authenticity, realism in learning

In this first category of description, teachers and outdoor practitioners believed the value of outdoor education is in affording space that fosters authenticity, realism in learning. The realism and authenticity that is characteristic of the outdoors enables learners to connect with the object of learning that was most apparent to them, for example the process of water filtration was more rich and real when students had a learning journey to the water treatment plant, which one of the school teacher cited. They tend to focus on the quality of learning retention and authenticity of the content and subject; hence the ability to know the object and nature of the

knowledge being acquired. The real-ness of the situation makes the learning and acquisition of knowledge authentic and makes its application meaningful. Interviewees commented that this is a feature that makes outdoor education distinct and attractive, where some of the learning could not be delivered with impact in the traditional four walls classrooms. Taking the example of the water treatment process cited above, it allowed the topic to come alive and made it possible for learners to appreciate the 'real meaning' of the topic or issue. This finding is congruent with several literature pieces such as the fostering of personal qualities and inculcation of values in individuals (Fiennes et al., 2015), valuable learning taking place in the outdoor environment that makes the curriculum come alive, something that will not be acquired by students when they are in the traditional four-walled classroom (Dillon et al., 2005), 'developing a deeper and better understanding of the subject' (Kendall & Rodger, 2015), providing participants with practical, real-life learning experiences that equip them to lead good, fulfilling lives (Neill, 2001) and authenticity as it relates to learners' engagement with the 'object' of study (Bonnet & Cuypers, 2002). The full comparison to literature is provided in Chapter 4, Research Analysis and Findings, section 4.2.2.1 and 4.2.2.2.

(b) Belief in value of outdoor education in fostering social emotional growth, physical and mental robustness

In this second category of description, teachers and outdoor practitioners believed outdoor education contributed to fostering students' social and emotional growth and toughening them up physically and mentally. Teachers and outdoor practitioners recognised the physical and emotional challenges that outdoor education programmes demanded from its participants and framed their belief to endorse such characteristics of outdoor education programmes because it offered opportunities for students to develop resilience and become adaptable to challenges that students may encounter beyond their school years. Teachers and outdoor practitioners also affirmed that experiences through outdoor education encouraged students to

encounter working with different people and opened up the opportunity to explore how they could work together with others who may have a different perspective to issues and points of view. They believed that these are valuable life skills that strengthen individuals and builds upon the first category of description (as illustrated in Figure 5.1 previously) about authenticity and realism of learning content. As a result, participants broadened their social circle, developed their independence and confidence toughened up physically and mentally. The findings are comparable with several literature pieces that the outdoors provides the freedom of exploring in natural spaces for discovery learning (Dillon et al., 2005), the outdoor space and context is a social leveller where participants are equal and existing barriers and hierarchies can be broken down (Kendall & Rodger, 2015), effective and well-intended fieldwork can lead to individual growth and improvements in social skills (Rickinson et al., 2004), and teachers' teaching and promotion of first hand experiences through the outdoors are significant and crucial for successful teaching that affects cognitive, physical, and practical areas which makes a distinction between success and failure for many students (Jordet, 2007) as reported in Chapter 4, Research Analysis and Findings, section 4.2.3.1 and 4.2.3.2..

The finding from this group of school teachers and outdoor practitioners also echo Ho's (2013) point that if the purpose of outdoor education was truly to serve the Singaporean society from a historical and cultural perspective for its intended situational needs, Singapore society would benefit from outdoor education as it enhances participants' resilience and provides a platform for social emotional competencies for individuals,

> In the light of my theoretical interpretive framework, building social skills could be considered as fulfilling largely the socialisation and qualification functions of outdoor education in Singapore. (pg 11)

These beliefs on the value of outdoor education by the two actors in this study suggests that they are aligned with the Ministry of Education (MOE) Framework for 21st Century Competencies and Student Outcomes (see Figure 5.2).

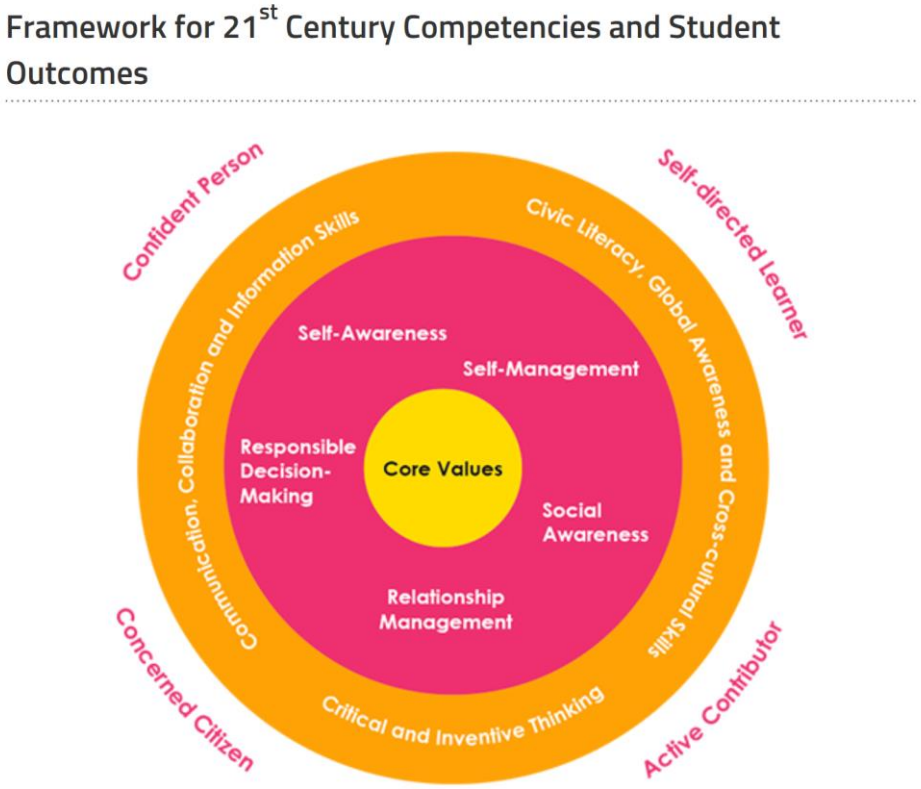

Figure 5.2: Framework for 21st century competencies and student outcomes, Ministry of Education, Singapore (Source: Ministry of Education, https://www.moe.gov.sg/education/education-system/21st-century-competencies)

(c) Belief in the value of outdoor education as preparation for students' future

The final category of description about belief in the value of outdoor education, is the conception of preparing students for an uncertain future. Descriptions in this category focused on how through outdoor education experiences and programmes, students get a taste of the changing nature of challenges and how such experiences can help to prepare them to cope and adapt to changes later in life. Some of the changes could relate to the need to be open to other ideas when being part of a team, or having to work with less resources, or adjusting personal goals, beliefs, values as individuals leave school and enter the next stage of their life in the

workforce and as an adult. This builds upon the second category of belief statement about fostering social emotional growth, physical and mental robustness. The findings here compare with literature on the transformational potential by Mezirow (2000, 1991a, 1975) as reported in Chapter 4, Research Analysis and Findings, Section 4.2.4.1 and 4.2.4.2.

(d) Reflections on sources that influenced teachers' and outdoor practitioners' beliefs

As teachers are one of the groups of stakeholders in schools who can impact the implementation of outdoor education, their pre-service exposure to outdoor education, through teacher training, could influence in the adoption of outdoor experiential approaches in teaching and student engagement. If pre-service teacher training included participation and engagement with outdoor education, pre-service teachers would experience how learning in the outdoors takes place. While not all pre-service teachers may wish to adopt outdoor education in their future work as teachers, those who do so could consider using outdoor education as one of the options to promote learning and engage learners as part of the formal curriculum and, or, as part of a broader development of social and emotional competencies and personal qualities. With such experiences gained from prior outdoor education during pre-service teacher training, teachers may be encouraged to be proactive to pursue continuing professional development to adopt such innovative methods to engage students in the overall learning. These end outcomes would support the MOE's Framework for 21st century competencies and student outcomes. Currently, data from this study suggests the adoption of outdoor education in the school curriculum is not formalised as none of the school teachers spoke about their continuing professional development in outdoor education, and I will return to comment on this in the next chapter as part of this study's concluding discussions.

In Chapter 4 'Research Analysis and Findings' section 4.2.5.2, one teacher (STF2) mention she experienced a module during her pre-service teacher training many

years ago, which had an influence on her belief. On her own, she pursued continuing professional development in outdoor education as a student taking the Specialist Diploma in Outdoor and Adventure Learning (SDOAL) offered by one of the institutes of higher learning in Singapore. Teachers involved in this study observed that the Physical, Sports, Outdoor Education Branch (PSOEB), which provides advice for policy formulation and training to teachers to infuse outdoor education into physical education needs to do more about current implementation and teacher training. The school teachers in this study mentioned that PSOEB had a poor implementation of the new initiatives of outdoor education in schools. They contended PSOEB's was inflexible and rigid in their dialogue with schools' ideas of outdoor education, hence ruling out any possibility for open dialogue on ways schools could incorporate outdoor education. One teacher lamented the lack of resources and time provided for schools to plan for a diversity in the way outdoor education can be carried out. Another school teacher commented on the unrealistic timeline for schools to implement outdoor education and inadequate training for teachers.

Two outdoor practitioners also share concerns over the implementation of outdoor education within the physical education curriculum. They feel very strongly that outdoor education and physical education are different in orientation and philosophy, a point strongly echoed by Atencio et al. (2014a)

> we purvey the view that positioning OE within a broader PE framework can be problematic, because these subject areas may find sympathy in some ways yet diverge significantly. PE can represent a limiting and constraining view of learning outdoors…certain dominant underpinnings of contemporary PE linked with obesity prevention, instilling discipline and fitness-building have been critiqued as having limited and even negative impacts upon children's and young people's overall (e.g. physical, social, emotional and cognitive) development (Jess, Atencio, & Thorburn, 2011; Wright, 2004). (pg 9)

When analysing the above reflections of the school teachers and outdoor practitioners, it is interesting that the concerns brought out by the two actors focus on different aspects of the implementation of outdoor education in schools. The school teachers were concerned with how they were not consulted or accepted their

opinions they may offer as alternative of options for outdoor education implementation, although they also admit they have not obtained any continuing professional development. So that brings me to wonder on what basis they have reasons to think they do have valid recommendations to offer when the enormous claims made for outdoor education by teachers in this study are based on no training and no continuing professional development. None of the school teachers are supporting this with theory or training. It could be argued that PSOEB did not welcome the teachers' suggestions because they do not know what they are trying to achieve. This makes it appear as a kind of tacit knowledge cultural norm. On the other hand, the two outdoor practitioners who have raised an issue about locating outdoor education within the physical education as problematic concur with critiques made by academics like Atencio et al. (2014a). In my view, the outdoor practitioners who provided those comments have presented a more critical appreciation and discernment of the way outdoor education is implemented by the MOE central authority, PSOEB. This is my reflection and would certainly be interesting to study this further in the future.

The above impressions by school teachers and outdoor practitioners echo an overall opportunity for a thoughtful implementation of outdoor education in schools, supported by a continuing professional development for teachers to implement outdoor education appropriately in school curriculum, and not just within the physical education curriculum.

From the findings for the second research question, a common feature that stood out for all teachers and outdoor practitioners in this study, was that all of them underwent a formative personal concrete outdoor education experience, and in some cases, some had multiple outdoor education encounters. They related this as a strong factor that influenced their beliefs about the value of outdoor education. Amongst them, some of them obtained further support during their profession, by applying their initiative and pursuing the deepening of their knowledge and interest by reading, researching and learning from mentors. The larger Ministry of Education support in terms of policy and unveiling the National Outdoor Adventure Education

masterplan in 2016 is a very strong sign of support at the highest level. The aspect of obtaining the different support described above whether it is for knowledge development or for policy implementation by ensuring such opportunities for outdoor education are available and supported, is congruent with Beames et al. (2012) who assert

> In many parts of the world, the outdoor learning movement is no longer something driven exclusively by inspired teachers and principals seeking more meaningful ways to experience, learn, and know; governments …are starting to take a much greater interest in the increased learning opportunities offered by moving beyond the four walls of the classroom. **However, this interest needs support if outdoor learning is to flourish**
>
> (pg 5)

It is crucial that support is available at different levels, as Beames et al. (2012) stated, whether it is part of pre-service teachers training, or deliberately fitting into school timetable for outdoor learning, making available resources and continuing professional development, and allowing sense of teacher autonomy for teachers who have had a positive experience to experiment and receive support to implement some form of outdoor education into their teaching.

I will now consider these three beliefs in terms of an overall conclusion in the context of Singaporean education, more generally.

5.3 Conclusions

One observation I made throughout the interviews with both school teachers and outdoor practitioners was the unanimous agreement that for the full potential of outdoor education to benefit the students in the school, school teachers, those teaching mainstream subjects and physical education must have a strong belief in its value for students in both social emotional development and curriculum integration, and be open, to adopting such approaches. This was echoed by the majority of the interviewees of this study and is an important finding, which would be of value for the Ministry of Education (MOE) to deliberate and determine what action is needed

both in policy, pre-service teacher training, continuing professional development and in its working relationship with external outdoor companies who are supporting the MOE goals of offering outdoor programmes for its schools. It is heartening to note as the local newspaper, The Straits Times (23 February 2017), reported, that the MOE places a stronger emphasis on outdoor education,

> The ministry will continue to enhance the professional capabilities of teachers and outdoor adventure educators to deliver meaningful outdoor education experiences. Currently, more than 600 teachers have been trained to conduct outdoor education activities. Another 500 teachers are expected to benefit from the professional development and refresher courses organised by the MOE. They will be certified to teach and conduct various aspects of outdoor education, such as the high elements challenge courses.
>
> (The Straits Times, 23 February 2017)

From this report, it appears that the Ministry of Education's focus on the role of outdoor education tends to be associated with personal development outcomes, as it alludes to the training of its teachers "to teach and conduct various aspects of outdoor education, such as the high elements challenge courses" (Straits Times, 23 February 2017). I am critical of such use of statistics (collectively 1,100 teachers as indicated in the quote above), reporting that training of school teachers on outdoor education (read the emphasis "certified to teach and conduct various aspects of outdoor education, such as the high elements challenge courses") is an attempt to convince readers that the Ministry is serious about teachers' professional development, when there is no evidence of lasting benefits of ropes course activities.

5.3.1 Poll conducted at Outdoor Education Conference 2017, Singapore

In a recent Outdoor Education Conference 2017 held in Singapore, with the theme "The only mountain worth climbing", organised by the Singapore University of Social Sciences and Outward Bound Singapore, a poll was conducted by the moderator during the panel discussion which was made up of local and international speakers. The question asked of the delegates, which comprised mostly outdoor practitioners

with few school teachers was, “What should be the role of outdoor education in Singapore” (see Figure 5.3). The response from the delegates pointed overwhelmingly to “Character development for our youths” with 75% and the least for “Complementing formal (classroom) education” with a 19% rating. This could be because the theme of “The only mountain worth climbing” resonates clearly with delegates as character development and less with complementing formal education. Given that the question was open, many of the delegates, who are outdoor practitioners, associate outdoor education with character development and remotely see a role for outdoor education to complement formal curriculum. This somewhat mirrors this study, where practitioners have not linked outdoor education with classroom learning. However, it is probably not surprising to come across such a poll result that showed that delegates associated outdoor education most with character development for youths.

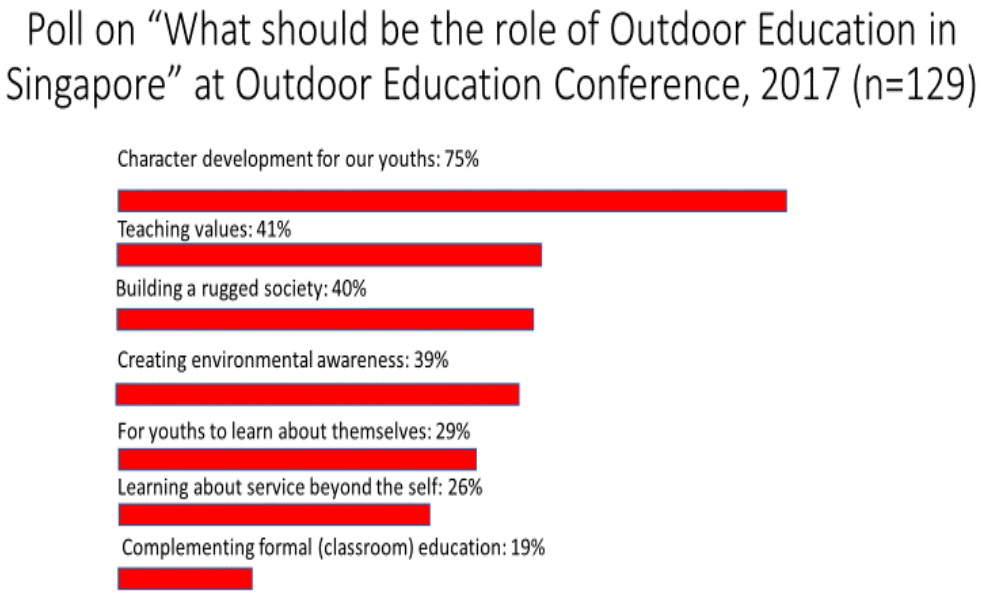

Figure 5.3: Poll conducted at Outdoor Education Conference 2017, Singapore

How does this feature against the findings of this study? For schools to benefit from the integration of outdoor learning within the curriculum for student learning, more can be done to ease school teachers into appreciating a fuller understanding of the range of outdoor learning provision and how learning in the outdoors can be implemented. This can be achieved if school teachers and outdoor practitioners can be encouraged to reflect and be made to understand the many foci of outdoor education which has been described in the literature review in Chapter 2 of this thesis. In the process, this may serve to open teachers and practitioners' minds to widen their perspectives to experiment in the outdoors. Otherwise, teachers and outdoor practitioners might be overly focused to associate outdoor education with students' personal and social development and miss the opportunity to go beyond the personal and social development, to include curriculum learning in an interdisciplinary approach, and in the process, widen and open the perspective of the learner. This missed opportunity exists, possibly due to the realisation by school teachers that the classroom and the curriculum may sometimes serve to narrow rather than widen the learners' perspective because teachers may not have understood how to think of the outdoors as a classroom.

I argue that a commitment to this endeavour to provide high quality pedagogical training as part of the pre-service teacher training and continuing professional development could help teachers integrate outdoor education across the curriculum, "rather than being regarded as an infrequent, recreational disruption to learning, taking classes outdoors should be seen as an extension of, or indeed integral part of classroom activities and used to meet the curricular and other needs of students." (Beames et al., 2012, pg 7). I have noticed in this study, the teachers, as well as the outdoor practitioners recognise that the value of outdoor education goes beyond the personal and social development outcomes commonly associated with outdoor education. Several of the teachers could relate ways in which the outdoors can be and has been utilised to deliver subject content, but it was not established through my interview if these were taught in separate subject areas (geography, science, history, maths, english) or in an integrated manner, or if there was any formal lesson

plan designed with such intentions. None of the outdoor practitioners I interviewed shared if they had co-operated with school teachers to deliver outdoor learning experience to incorporate the formal curriculum. This is a missing piece which has not been established if it has taken place, though all outdoor practitioners interviewed agreed it was possible to incorporate such elements. Beames et al. (2012) describe the benefits of an inter-disciplinary approach to learning

> There are clear benefits in teaching aspects of these subject areas in an integrated fashion both indoors and outdoors, as this reflects the interdisciplinary nature of the real world – the way we interact with each other and, indeed, our planet. These interactions are part of the 'informal' curriculum and are a traditional strength of carefully constructed and skilfully guided outdoor learning experiences. (pg 7)

For such inter-disciplinary approach to learning through outdoor education in Singapore schools, school teachers would need relevant and appropriate professional development to build a deeper and more critical appreciation of outdoor education to help them to recognise the integrative component of outdoor education across disciplines that can make learning much more authentic and real. I feel strongly that the Singapore Ministry of Education emphasis of outdoor education through PE and a focus on personal and social development may not have been helpful but serves to reinforce the narrow applications of outdoor education for learners. I recall Beames and Ross' (2010) argument that when outdoor education is situated within and across local school and community conditions, such episodes of learning can engage coherently with national curricular frameworks. Such an alignment can work to reflect learning processes characterised as cross-curricular and authentic whilst promoting higher states of student civic responsibility.

Given the growing acceptance by the Ministry of Education, school teachers and outdoor practitioners in Singapore on the value of outdoor education for students, it is timely to advocate for greater support for the professional development of teachers, to go beyond the current emphasis to impact further on students' development and learning.

In this study, school teachers and outdoor practitioners, the two key actors who play a critical role in the implementation of outdoor education for students in the city state of Singapore have reflected their views that suggest practice and policy are two key factors that influence educational development. There is a collective agreement amongst the eleven respondents on the three broad beliefs on the value of outdoor education. As a practical recommendation, such value requires significant investment in enhancing teacher pedagogy through sustained and specific professional learning opportunities, for teachers to become confident to embrace outdoor learning in more meaningful ways, as I agree with the arguments by Atencio et al. (2014a), that school "teachers based in local schools are best positioned to understand and support the needs of their own students, even if they require high levels of resource and training support." (pg 9) and the authors' support for Nicol (2010), who made the case that more localised "school-based approaches represent the greatest potential for the development and growth of outdoor learning" (pg 167). I wish to take this further to propose that if educators would accept the view that the school as the focal point where outdoor learning takes place, with students and teachers exploring proximal sites and other complementary ones for the sake of more authentic knowledge generation and pupil development, then teachers would need to consider their preparedness to operate in both indoor and outdoor classrooms.

In reflection, the findings of this study which is captured earlier in this chapter in Figure 5.1 bears some resemblance to the account by Beames and Brown (2016) about the four elements in an adventurous learning pedagogy, which I had covered in the Chapter 2 of Literature Review. If the findings of this study are not to be viewed in isolation, but instead examine how it relates with each other, elements of the adventurous learning pedagogy as Beames and Brown (2016) conceive does exist at least in our local teachers and outdoor practitioners' conception. To take this further, local teachers and outdoor practitioners could reflect on accepting Beames' and Brown's (2016, pg 20) challenge to consider an adventurous learning pedagogy in the design considerations of learning for their learners, by keeping in mind the design

elements of 'authenticity (keeping the activities real); agency (ensuring that learners have the power to shape what is learned and how it is learned); uncertainty (being willing to move away from rigid and prescribed processes and allow creativity in finding solutions); and mastery (helping learners develop applicable knowledge and skills)', so that learners are equipped to interact with a world which is changing rapidly towards the future.

5.4 Limitations of the study

This study suffered from three limitations. The first is my inexperience in conducting phenomenographical research. Phenomenography is a distinct research approach, with its unique epistemological assumptions and approaches to analysis. To my knowledge, most researchers are initiated into this approach through a form of apprenticeship – by being guided by an experienced phenomenographer. However, in my case, I had to learn the practical application of phenomenography whilst I developed my theoretical understanding of the approach, my confidence developed mainly through trial and error. I familiarised with as much literature on the philosophy and application of phenomenography as possible within the timeline of this study, and diligently spent time studying and reflecting on examples of phenomenographic research to develop a grounded understanding of the core principles. However, familiarity and theoretical knowledge are not substitutes for experience and mentorship.

As with all qualitative research studies there are assumptions made about the nature of findings being indicative and suggestive. One postulation of this study was the degree of commonality across category meanings being based on what school teachers and outdoor practitioners deem to be experiences that fall within outdoor education. With the understanding that common outdoor education experiences deemed unnecessary for this study, the reliving of personal outdoor education experiences forged from similar experience contexts is a supposition of this study. Hammersely (2011) suggests that any research activity "involves presuppositions on which it necessarily relies – without which it could not be pursued" (pg 36). To

summarise, the analysis and explanation required within this study contains something that belongs to me as well as something that belongs to the data. By providing evidence of my reflexivity within and throughout the study, I accept the presence of my own subjectivity as part of this study, although some would consider this a limitation to findings (see Hammersley, 2011).

The third limitation is the number of interview participants. As I have described in Chapter 4, despite reaching out to the Principals of all 156 Secondary Schools in Singapore, only 12 schools with 19 teachers and 14 outdoor practitioners responded to the online questionnaire, which provided a total of 33 respondents. Eventually, 11 agreed to be interviewed and it is the data from the 11 that provided for analysis of this study. In phenomenography, while researchers generally do not prescribe sample size, Bruce (1997) argues that to gather appropriately rich descriptions of people's varying conceptions about the phenomenon of interest, the sample size needs to be adequate. Both Trigwell (2000) and Dahlgren (1995) suggested that to obtain a reasonable chance of finding variation within meaning, 10 to 15 participants are sufficient in phenomenographic research. A larger sample might have produced more of the same or may have revealed a broader range of possible variations which could have provided richer data for analysis.

Chapter 6

Concluding Discussions

6.1 Introduction

The findings of this study have important implications for school teachers and outdoor practitioners engaged with outdoor education in Singapore. This section offers recommendations for policy, practice as well as further research in the field as a concluding discussion to the thesis.

6.2 Recommendations for policy

First, both school teachers and outdoor practitioners endorse the value of outdoor education. However, greater support mechanisms or a strategy ought to be negotiated and developed to assist teachers and outdoor practitioners to work synergistically and capitalise on their efforts. Currently, the Ministry of Education has identified outdoor practitioners from the private sector as vendors who are providing a service. The private sector providers on the other hand, express that they can play a meaningful and clear role to partner school teachers who may not be fully ready to undertake a greater role. There should be some options available for schools and school teachers to negotiate this tension. For school teachers, the full extent of this benefit to be realised is contingent on the abilities of the teachers who can support their students' learning confidently and comfortably. This means that in a similar way to how school teachers were trained and developed to supporting the learning and the content in the traditional four-wall classroom, there should be a plan to have similar training for teachers to equip them with the knowledge and skills to use the outdoor classroom. Since the outdoor practitioners have expressed a keenness to be a close partner to the teachers in using the outdoors, though this will require further study on what they meant about partnering the teachers and the role they can and should fulfil, so that accordingly, outdoor practitioners can benefit from relevant professional development to equip themselves adequately to partner teachers to provide outdoor experiences beyond the social and emotional development to

venture into school curriculum integration in their work. This can serve to narrow the gap between school educators and outdoor practitioners and promote a community of practice as advocated by Wenger (1998) and enhance synergistic practices of outdoor education to serve the many foci which are of immediate interest and relevance to schools.

6.3 Recommendations for practice

A good starting point to review recommendations for practice is to learn from the emerging reviews of how outdoor learning could be taken as an extension and integral part of the classroom activities to meet the curricular and other needs of the students. Throughout the interview in this study, some teachers have expressed the need to have specialist skills to adopt outdoor education approaches into their teaching. This suggest that there is a need to explore the meanings teachers ascribe to outdoor education, what they perceive as specialised knowledge within outdoor education and perceptions of their own teaching competencies. I would caution teachers to be wary how they expect themselves to utilise such specialist skills to deliver outdoor education in their curriculum teaching. This is because Beames, Atencio and Ross (2009), argue that current models of pre-fabricated outdoor education programmes provide little choice and responsibility for learners and hence results in poor transferability of learning back to their school environment, since all the activities are entirely prescribed by an 'expert'. I also strongly suggest reflecting on the narrow and broad conceptions of adventure as conceived by Rubens (1997) (see Figure 6.1), which Beames, Atencio and Ross (2009) cite in their critique of outdoor learning definition that "there is a convincing case for moving away from compartmentalised courses full of adrenaline-filled activities, and instead advocating more sustainable, local, broad adventures that involve longer time scales, and where responsibilities are placed firmly on the shoulders of the participants." (pg 34). How might this be relevant and appropriate for the case in Singapore? I discuss this further in the following paragraphs.

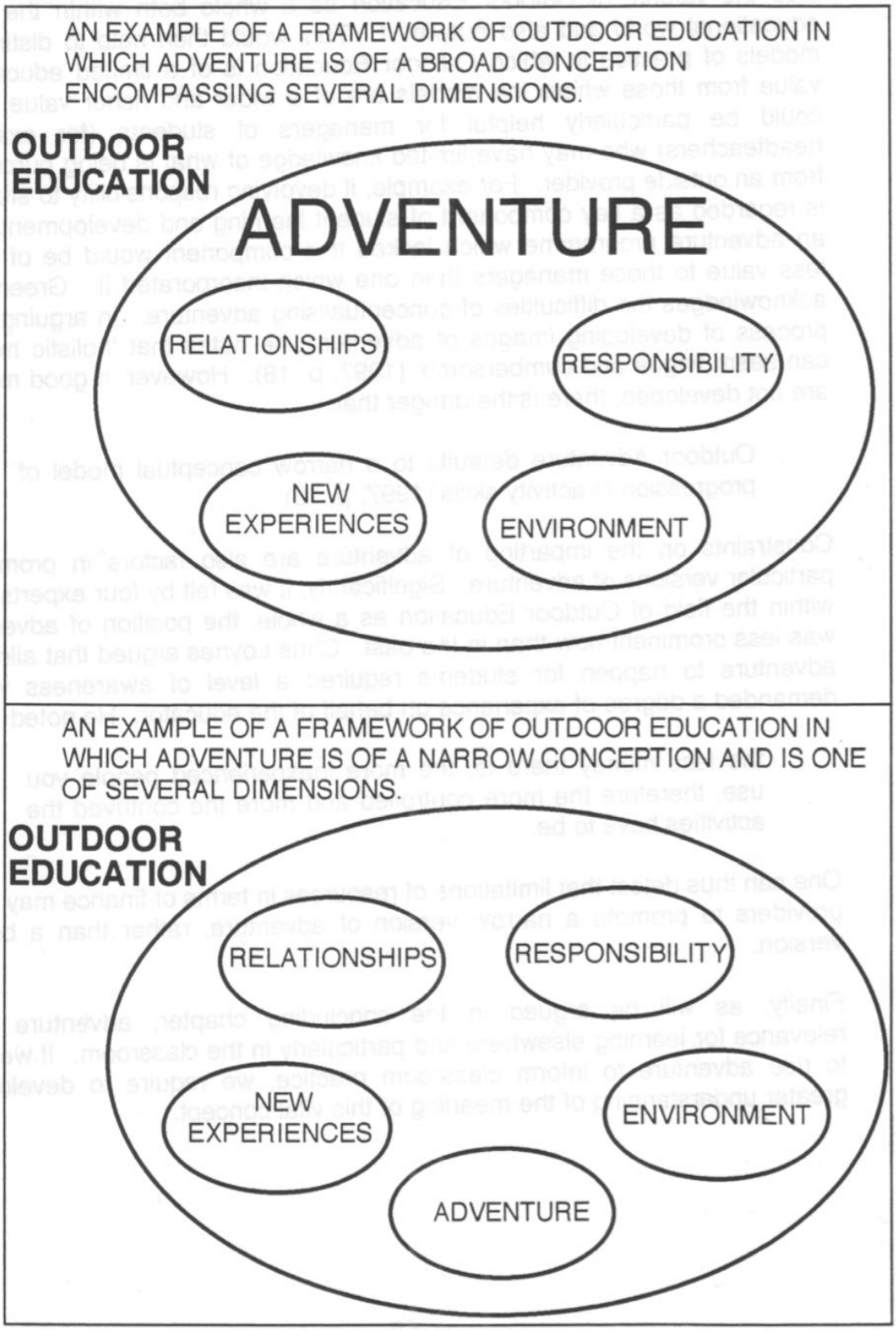

Figure 6.1: Examples of possible outdoor education frameworks (Source: Rubens, 1997, pg 39)

Beames et al. (2012) also build on the narrow and broad conceptions of outdoor education with a critique of what outdoor learning experiences can be. They argue that outdoor education has become increasingly focused on adventurous activities conducted in highly controlled environments (eg. ropes courses, climbing walls etc. hence a narrow conception of adventure). This seems to apply to the Singapore situation as well. In the case of Singapore where these happen, many of these happen far from the school locations, and in cases where schools have invested resources and facilities within the school grounds, few connections to the school curriculum are made, and involve instructions to facilitate these activities using specialised equipment. Beames et al. (2012) cite Ross, Higgins and Nicol (2007) who reported that one barrier to schools providing outdoor learning opportunities is the assumption that learners' formal outdoor experiences should occur far away from school, often at a residential outdoor education centre. Such a view gives a false impression that outdoor experiences would only be legitimate if it happened far away from schools 'out there'. The authors comment that such a view brings in a traditional conception of outdoor education, where time must be taken out of the yearly timetable, transportation arranged, and attention to aspects of the curricula timetabled at school put on hold. Finally, Beames et al. (2012) critique that such programmes described above are usually costly, demands staff with specialist skills, hardly progressive, and consequently are experienced infrequently by most children.

To address the limiting considerations of the above points, Beames et al. (2012) cite Higgins and Nicol (2002) who propose that four 'zones' of outdoor learning exist (pg 5). They implore educators to recognise learning outside the classroom which can happen in the school grounds and local neighbourhoods, before venturing out to day excursions which can take place a little further and finally overnight stays, residentials and expeditions (see Figure 6.2)

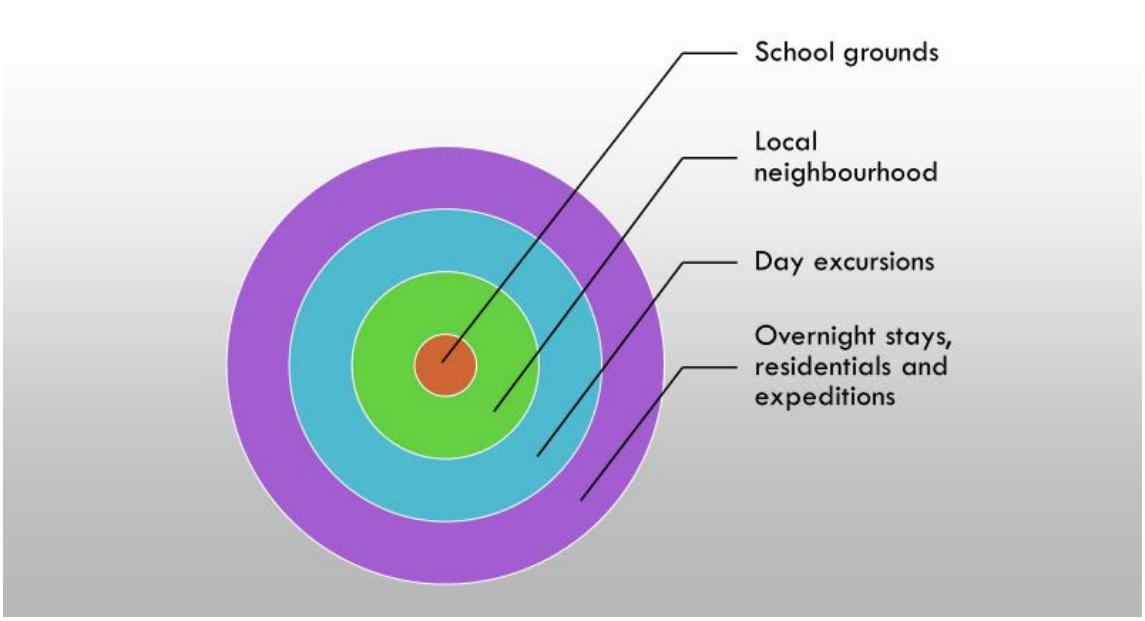

Figure 6.2: The four 'zones' of outdoor learning (adapted from Higgins & Nicol, 2002, pg 44)

Through such a critical discourse of outdoor education, which can provoke educators' thinking about design considerations of outdoor education implementation through ongoing professional development for teachers and outdoor practitioners, the practice and implementation of outdoor education can be elevated to a higher level of consciousness to produce deeper meaning and connection. Currently such professional development opportunities for educators in outdoor education pedagogy are absent. I believe that having such continuing professional development in teacher pedagogy to build their capability would be the examples of *'support'* which Beames et al (2012) refer to *"if outdoor learning is to flourish" (pg 5).*

The Singapore Ministry of Education can take this advice from Beames et al. (2012) and work in a mid and long-term plan on the knowledge, skills and attitudes teachers need to acquire to realise the potential promise and value of outdoor education in a city-state like Singapore beyond the current focus of social and emotional development. In Chapter 2, I had discussed that according to Martin and Ho (2009), developing local spaces for outdoor learning to occur remains a crucial issue within

a small urbanised island city-state on a land area of 719 square kilometres with 5.5 million inhabitants. One might be tempted to predict or think that places like Singapore, which is highly urbanised does not hold a lot of promise and value for outdoor learning. Quite the contrary has been noted by Nicol (2010), who argued that more localised "school-based approaches represent the greatest potential for the development and growth of outdoor learning" (pg 167).

Nicol's (2010) statement reinforces the view that the school should be the focal point where outdoor learning takes place, with teachers using and exploring these sites and other complementary ones for more authentic knowledge generation and students' development. While this vision of school-based approaches to outdoor education reflects a departure from the complexities of leading 'high thrill' activities, Atencio et al. (2014a) have expressed a huge concern on the abilities of Singapore school teachers to "make the leap from indoor teacher to outdoor teacher" (Nicol, 2010, pg 167).

Herein lies a huge opportunity to capitalise on Singapore's locally based urban environment, in terms of nearby and readily accessible spaces, such as parks and gardens, school grounds or their local communities and neighbourhoods which pupils are familiar with, as spaces for outdoor learning.

This in turn affords an opportunity for MOE to invest in the continuing professional development of teachers to develop their capacity to make use of the whole of scarce local outdoor urban spaces as the outdoor classroom. I recall many years ago, the MOE indeed used 'the outdoor classroom' as its tagline to describe that students are learning in authentic settings in the outdoor classroom beyond the traditional four-wall classroom, as a showcase of preparing students for the future. So, if learning is indeed happening beyond the four-wall classrooms and in the great outdoors, there ought to be a strong continuing professional development for school teachers with an emphasis on developing confidence in teachers to support learning in the outdoors. Such professional development may not be necessarily focused on contemporary outdoor instructor skills development, but as Beames et al. (2012)

explain, rather the focus is on the principles and guidelines to be considered and used to inform an integrated, holistic approach to teaching in the outdoors.

It is remarkable that none of the teachers who were interviewed in this study had undergone any training or continuing professional development in outdoor education, but yet they are able to provide claims for what they believed the value of outdoor education is. As I have written in Chapter 5, this for me, seems to suggest an acceptance of a cultural norm of relying on tacit knowledge on what they perceive as working, instead of examining evidence-based practice, or engaging in reflective practice. It may become of increased importance and concern because if this continues to be unresolved, the Singapore education system could have some practices of outdoor education based on different teacher's tacit knowledge, and miss an opportunity to engage in robust, rigorous debate and action research in its attempt to embrace outdoor education for teaching and learning innovation.

A model I suggest which can be adapted for a highly urbanised setting like Singapore is Beames' (2006) three-dimension of outdoor learning (see Figure 6.3). This approach moves away from compartmentalised courses and single episodes of 'high thrill' adventures, situated in the history, ecology, culture, and stories of the place they are in (Baker 2005; Brookes 2002a, 2002b; Knapp 2005; Nicol & Higgins 1998; Stewart, 2004), while adopting a more 'generative' approach (see Loynes 2002), where knowledge is co-constructed by the learner and facilitator together.

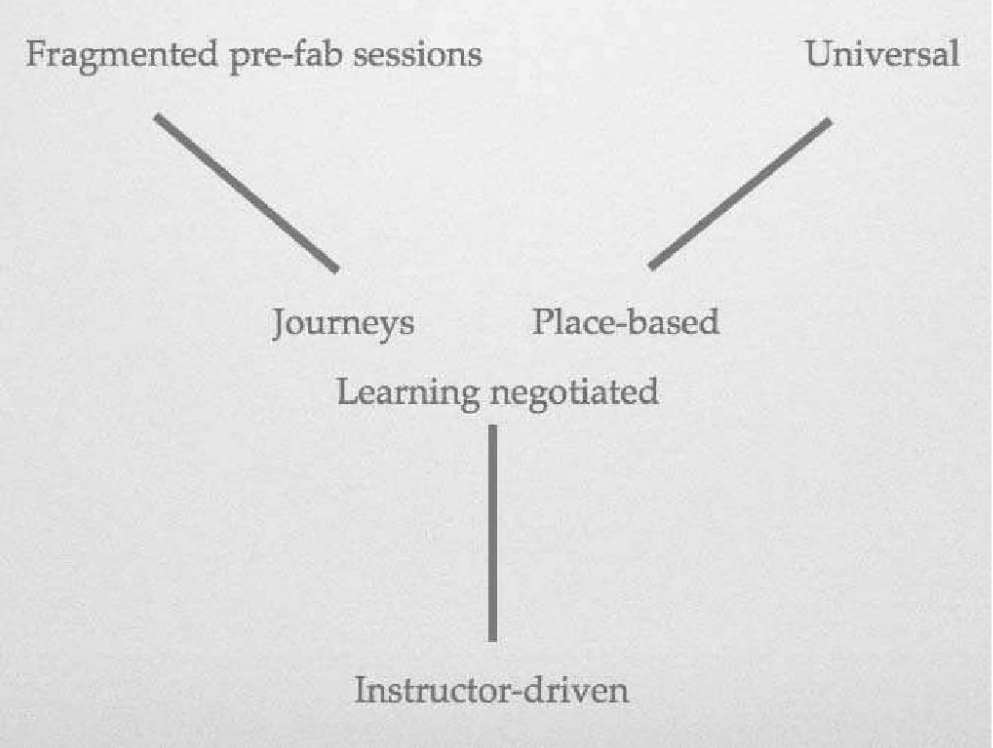

Figure 6.3: Three-dimensions of outdoor learning (adapted from Beames, 2006)

The Physical, Sports, Outdoor Education Branch (PSOEB), being the department that oversees the professional development of school teachers for its outdoor education implementation policy could consider supporting teachers continuing professional development with such initiatives to incorporate such alternative evidence-based practices by Beames (2006). A culture of continuing professional development for school teachers already exists for Singapore teachers through the Academy of Singapore Teachers (https://www.moe.gov.sg/about/org-structure/academy). The PSOEB is instituted within the Physical Education and Sports Teacher Academy (PESTA) within the Academy of Singapore Teachers. It makes good sense that the Academy of Singapore Teachers leverage on their organisational structure and mission to facilitate the inclusion of outdoor education continuing professional development for teachers, given the views of the teachers in this study about teacher continuing professional development, unhelpful consultations and poor timeline with regards to the implementation of outdoor education from PSOEB. There is

certainly much scope to improve in continuing professional development for Singapore teachers through this. For outdoor practitioners, the new Outdoor Learning and Adventure Education Association (OLAE), seeks to represent the local outdoor practitioners and promote partnership, dialogue with the Ministry of Education, as far as policy implementation of outdoor education provision for local school students. The OLAE should also partner and dialogue with MOE in cross professional development, to explore any opportunity for a model of synergy between school teachers and outdoor practitioners for stronger outdoor education implementation in Singapore schools.

6.4 Recommendations for research

As far as I am aware, this is the only study to use a phenomenographic approach to study teachers and outdoor practitioners' beliefs about the value of outdoor education locally in Singapore. Although a relatively unknown methodology outside the context of higher education, phenomenography has demonstrated utility in providing a methodology to study learning and identify aspects of the phenomenon critical to improved educational outcomes.

This study has demonstrated the potential value and possible role for outdoor education based on meanings derived by school teachers and outdoor practitioners. One of the strengths of this approach to researching stakeholders' views on the value of outdoor education, is that a coherent collective understanding of outdoor education can be formed, whilst the data generation, and the analysis, can be based on personally relevant and idiosyncratic beliefs about the value of outdoor education. This study has demonstrated the utility of using the methodology of phenomenography to understand the different ways in which the value of outdoor education has come to be formed by two key stakeholders of outdoor education implementation in Singapore.

As part of the epistemological reflexivity processes, I have considered recommendations relating to the design of this research study. Through

phenomenography which is focused on understanding the "collective instances of a way of experiencing" (Lindner and Marshall, 2003, pg 272), and a constant focus on reliving past personal experience, the research design utilised in this study is perhaps well situated to be used to explore meaning within other outdoor education settings. One interesting and relevant example would be to explore pupils' account of lived outdoor education experiences at different life stage and what this means for outdoor programme providers and teachers who have a full school of pupils across a longer timescale (for instance, Year 1 to Year 6 in the IB curriculum). Furthermore, use of the research design utilised in this study has the potential to extend the scope and type of outdoor education research questions to be investigated and in the process, contribute to the ongoing efforts to situate outdoor education practices and deepen Singapore teachers and outdoor practitioners' knowledge on outdoor education as it happens in Singapore. For instance, Åkerlind (2008) states that "phenomenography is most effectively used to inform teaching design decisions" (pg 638), thus research questions targeting the design of outdoor courses might benefit from the application of such a research framework. Research questions that inquire on teaching design decisions of incorporating outdoor education elements within curricular which uses a phenomenographic approach would seek to gather the variations in meanings associated with such a teaching design for instance and allow teachers to learn from the findings and gain insights on the nature of teaching design decisions.

Two other possible research areas which this study did not include, is to explore gender comparisons, as well as beliefs of school teachers and outdoor practitioners at different stages (early and experienced) in their careers how it would contribute to the ongoing social, cultural construction and maturation of Singapore identity of outdoor education as echoed by Martin and Ho (2009)

> Outdoor education is not a universal value. Rather, outdoor education's contributions need to be grounded in time, place and culture. (pg 79)

6.5 Concluding comments

For me there is an objective significance about how the findings of this study are utilised to inform teacher education and outdoor practitioner development programmes. The findings of this study suggest that teachers and outdoor practitioners bring upon variations in their belief about the value of outdoor education. The findings of this study offer such an opportunity whereby insight into the collective belief of the value of outdoor education by school teachers and outdoor practitioners obtained through empirical research can be used to explore the adoption and integration of outdoor education into teaching practices of the next wave of teachers in schools.

To raise the profile of outdoor education in schools and Singapore, practice and research represents two sides of the same coin, and a core requirement is to devote attention to achieving collective understanding and development of research-informed practice and developing best practice across the two sectors. Further discussion on the findings of the teachers and outdoor practitioners' belief also suggest a missed opportunity to embed outdoor education within curricular learning with schools as focus of implementation, to recognise outdoor education's contributions of moving beyond personal and social development outcomes. This is important because the place of outdoor education in the curriculum is at cross-roads as suggested by Atencio et al. (2014a)

> We accordingly speculate that OE must be given significant curricular focus and space; teachers should be supported to draw upon the natural outdoor environment as a point of entry for facilitating more reflective, exploratory, student-driven and situated learning experiences. (pg 10)

The findings of this study are of educational significance as they relate to the positioning of outdoor education experiences in Singapore students. Developing an understanding of the value of outdoor education experiences is vital to assess the role of these experiences in the education system. This study of teachers' and

outdoor practitioners' beliefs on the value of outdoor education contributes to that endeavour.

Appendix 1: Online Survey Questionnaire for School Teachers

Open-ended Questionnaire

Dear Teacher

I am a Singaporean currently pursuing my doctoral studies at the University of Edinburgh, UK. I am embarking on this study to contribute to the local knowledge base about issues related to outdoor education in the city state of Singapore and therefore further our identity as Singaporeans. Broadly this study is seeking to gain insights into teachers' beliefs regarding the value and purpose of outdoor education. I hope you can find time to help me with this by completing this online questionnaire. If you agree to participate in this study, it will take about 20 to 25 minutes to complete. The questionnaire will remain until 29 February 2016 so you can save your responses and come back to it again later.

I would like to assure you that the responses and information you give is completely confidential. Your name and your institution will not be reported or published and as your contribution is voluntary you may withdraw from the study at any time. I hope your participation in this study can help to enrich a deeper cultural understanding of outdoor education in Singapore and contribute to the growing local literature on this topic in our city-state. If you need further clarification regarding this study, please feel free to contact me, Abdul Kahlid (abdul.kahlid@gmail.com; or s1064307@sms.ed.ac.uk). I thank you for making this study possible.

Best Regards,

Kahlid

---

* **A. Informed Consent**

Please read the following information carefully:

1. I confirm that I have read and understood the purpose of this research and what my contribution will be.

2. I agree to participate in this survey that will take about 20-25 minutes to complete online.

3. I understand that my confidentiality will be maintained as described in the information above.

4. I understand that my participation is voluntary and that I can withdraw from the research at any time.

5. I agree to take part in this research.

By selecting “Yes”, you indicate that you have read and understood the information and give your consent to participate in this study. (Select one option)

Yes

No

***B. Personal Information**

*1a. What is your gender? (Select one option)

Male

Female

* 1b. What is your age range? (Select one option)

Between 21 to 25 years old

Between 26 to 30 years old

Between 31 to 35 years old

Between 36 to 40 years old

Above 40 years old

* 1c. How long have you been teaching? (Select one option)

Below 2 years

Between 2 to 5 years

Between 6 to 10 years

Above 10 years

1d. State your designation/position in your School (e.g., Subject Teacher, Subject Head, Level Head, Head of Department, etc.)

1e. I am from (indicate name of School)

1f. Subjects I teach students (please indicate name of subjects)

1g. I am in charge of the following CCA for students (please indicate name of CCA if applicable)

***C. Main Questionnaire**

2. What do you think outdoor education is?

---

3. What does outdoor education mean to you as an educator?

---

4. Does outdoor education take place in your school? If yes go to Q5/ If no, go to Q6

---

5. In which areas of the school curriculum does outdoor education take place in your school?

---

6. Why does outdoor education not take place in your school? (If Q4 answer is NO)

---

7. What are your beliefs about the value of outdoor education to the school curriculum? Why do you say so?

---

8. What are your beliefs about the value of outdoor education for students? Why do you say so?

---

9. Describe what influences your beliefs about outdoor education?

---

10. I would be grateful if you were willing to participate in a follow up interview session. This will be conducted between mid-February to end-March 2016 (Select one option)

Yes

No

---

11. Please leave the following details for us to contact you for the follow up interview session

*(a) Full Name

_____

*(b) Telephone

_____

*(c) Email Address

_____

Thank you for participating. Your time and response is much appreciated. Keep in touch :)

Appendix 2: Online Survey Questionnaire for Outdoor Practitioners

Open-ended Questionnaire

Dear Outdoor Practitioner

I am a Singaporean currently pursuing my doctoral studies at the University of Edinburgh, UK. I am embarking on this study to contribute to the local knowledge base about issues related to outdoor education in the city state of Singapore and therefore further our identity as Singaporeans. Broadly this study is seeking to gain insights into outdoor practitioners' beliefs regarding the value and purpose of outdoor education. I hope you can find time to help me with this by completing this online questionnaire. If you agree to participate in this study, it will take about 20 to 25 minutes to complete. The questionnaire will remain until 31 January 2016 so you can save your responses and come back to it again later.

I would like to assure you that the responses and information you give is completely confidential. Your name and your institution will not be reported or published and as your contribution is voluntary you may withdraw from the study at any time. I hope your participation in this study can help to enrich a deeper cultural understanding of outdoor education in Singapore and contribute to the growing local literature on this topic in our city-state. If you need further clarification regarding this study, please feel free to contact me, Abdul Kahlid (abdul.kahlid@gmail.com; or s1064307@sms.ed.ac.uk). I thank you for making this study possible.

Best Regards,
Kahlid

---

* **A. Informed Consent**

Please read the following information carefully:

1. I confirm that I have read and understood the purpose of this research and what my contribution will be.
2. I agree to participate in this survey that will take about 20-25 minutes to complete online.
3. I understand that my confidentiality will be maintained as described in the information above.
4. I understand that my participation is voluntary and that I can withdraw from the research at any time.
5. I agree to take part in this research.

By selecting "Yes", you indicate that you have read and understood the information and give your consent to participate in this study. (Select one option)

Yes

No

---

*1a. What is your gender? (Select one option)

Male

Female

* 1b. What is your age range? (Select one option)

Between 21 to 25 years old

Between 26 to 30 years old

Between 31 to 35 years old

Between 36 to 40 years old

Above 40 years old

* 1c. How long have you been working in this role as an outdoor practitioner? (Select one option)

Below 2 years

Between 2 to 5 years

Between 6 to 10 years

Above 10 years

1d. State your designation/position in your company (e.g., Instructor, Trainer, Senior Instructor, Outdoor Consultant, etc.)

1e. I am from (indicate name of company)

2. What do you think outdoor education is?

3. What does outdoor education mean to you as an educator?

4. In what ways do your company's outdoor education programmes fulfill the schools' student development needs? Please elaborate.

5. Consider your company's outdoor education programmes. In which areas of the school curriculum does your company's outdoor education programme fulfill?

6. What are some examples of the outdoor education programme for school students? Please elaborate.

---

7. What are your beliefs about the value of outdoor education for students? Why do you say so?

---

8. What are your beliefs about the value of outdoor education to the school curriculum? Why do you say so?

---

9. Describe what influences your beliefs about outdoor education?

---

10. I would be grateful if you were willing to participate in a follow up interview session. This will be conducted between mid-February to end-March 2016 (Select one option)

Yes

No

---

11. Please leave the following details for us to contact you for the follow up interview session

*(a) Full Name

_____

*(b) Telephone

_____

*(c) Email Address

_____

Thank you for participating. Your time and response is much appreciated. Keep in touch :)

Appendix 3: Letter to Data Administration Centre, Ministry of Education to obtain approval for data collection

30 November 2015

Mdm Toh Puay Huay
Deputy Director
Data Administration Centre
Ministry of Education
21st Floor, 1 North Buona Vista Drive
Singapore 138675

Dear Madam Toh

RESEARCH ON NATURE AND SCOPE OF OUTDOOR EDUCATION IN SINGAPORE

My name is Abdul Kahlid and I am a doctoral student at the University of Edinburgh, Scotland. I am currently Assistant Director at Republic Polytechnic, Singapore. My background is in training and development, having spent 15 illustrious years with Outward Bound Singapore overseeing outdoor programmes with national schools in Singapore and overseas. In the last 10 years at Republic Polytechnic, I started the first Diploma in Outdoor and Adventure Learning (DOAL) and Specialist Diploma in Outdoor and Adventure Learning (SDOAL). Many students from Singapore schools have gone on to undertake the DOAL as a post secondary option. Many adult learners have also gone on to complete the SDOAL.

2. 2015 marks 50 glorious years of independence for our nation. In this half a century, we have also witnessed many remarkable initiatives in our education system that has brought worldwide recognition. Since independence, outdoor education has played a vital and evolving role throughout the Singapore education system. As a fitting tribute to the role of outdoor education in schools, the subject of my thesis is investigating Singapore teachers and outdoor practitioners' beliefs about outdoor education/ outdoor learning in local secondary schools. The title of my doctoral research is "The Nature and Scope of Outdoor Education in the city-state of Singapore".

3. I would like to invite Secondary Three Singapore school teachers to participate in this study to contribute to the data collection.

4. This is a University of Edinburgh approved research that has been accepted by the University Progression Board (see document following this letter). All data will be protected and its use will only be for the purpose of the doctoral study. No names of individuals or organisation will be revealed and only aggregated data will be reported. Participation is voluntary and the participant is free to drop out anytime without fear of prejudice. There are two phases of data collection as part of the research design – an online open-ended questionnaire, and (if keen) face to face interviews to further extrapolate on the responses to the online questionnaire.

5. If the MOE Data Administration Centre approves this request, I would be writing to the School Principal with the url link to invite their Secondary Three teachers to participate.

6. I am formally writing to seek approval from the MOE Data Administration Centre to contact Singapore schools to conduct this research.

Yours sincerely

Abdul Kahlid
Doctoral Candidate
University of Edinburgh

MOE Approved EdD
data collection inform

Appendix 4: Ministry of Education approval for data collection

1 North Buona Vista Drive
Singapore 138675
Robinson Road P.O. Box 746
Telephone : (65) 68722220
Facsimile : (65) 67755826
Website : www.moe.gov.sg
Email : contact@moe.gov.sg

Ministry of Education
SINGAPORE

EDUN N32-07-005

Request No.: **RQ07-16(01)**

22 January 2016

Mr Abdul Kahlid
Blk 419, Choa Chu Kang Avenue 4
#02-314
Singapore 680419

Dear Mr Abdul Kahlid,

THE NATURE AND SCOPE OF OUTDOOR EDUCATION IN THE CITY-STATE OF SINGAPORE

I refer to your application for approval to collect data from schools.

2. I am pleased to inform you that the Ministry has no objections to your request to conduct the research in **154 secondary schools**, subjected to the following conditions:

a) the approved research proposal is adhered to during the actual study in schools;
b) the data collected is kept strictly confidential and used for the stated purpose only; and
c) the findings are not published without written approval from the Ministry.

3. When conducting the data collection in the schools, please ensure that the following are carried out:

a) consent is obtained from the Principals for the study to be conducted in the schools;
b) written parental consent is obtained before conducting the study with the students;
c) teachers are informed that participation in the study is voluntary and they do not need to provide any sensitive information (e.g. name and NRIC No.);
d) participation by the schools are duly recorded in Annex A; and
e) the data collection in schools is completed within 6 months from the date of this letter.

4. Please show this letter and all the documents included in this mail package (i.e. the application form, research proposal and research instrument(s) marked as seen by MOE) to seek approval from the Principals and during the actual study.

Yours sincerely

Terence Foo Sheng Jie
Research Analyst, Management Information/Corporate Research 1
Planning Division
for Permanent Secretary (Education)

Note to Principal: Please refer to MOE notification PA/25/12 for the Guidelines on Data Collection from Schools.

Request No: **RQ07-16(01)** **Annex A**

THE NATURE AND SCOPE OF OUTDOOR EDUCATION IN THE CITY-STATE OF SINGAPORE

School Participation Record

Please ensure that the following numbers are not exceeded:-

1. ***Total Number of Secondary Schools*** ***: 154***
2. ***Total Number of Teachers*** ***: 40***

No.	Name of School	No. of Teachers	Date of Interview/Survey	Signature of Principal/VP
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

REQUEST FOR APPROVAL TO COLLECT DATA FROM SCHOOLS

(This form will take you 10 minutes to complete. You may need your research proposal and research instruments to complete this form.)

Title of Project

The Nature and Scope of Outdoor Education in the city-state of Singapore

Brief Description of the Purpose of Data Collection

Purpose of data collection is for doctoral study research. The study is seeking to gain insights into teachers' beliefs regarding the value and purpose of outdoor education in Singapore schools.

Brief Summary of Methodology: Survey/Interview/Observation

Online Open-ended questionnaire
In-depth face to face interview

Description of Sample and Sample Size

Target Participant(s): 25~40 Teachers

Provide names of schools (if available): As this is a qualitative study, as long as at least 25~40 Secondary 3 Teachers respond, it would help to facilitate rich data gathering through their qualitative responses and interviews. The target Secondary 3 teachers which this study seeks would be from those who are familiar or have some experience with outdoor education/ learning, which is the phenomenon being explored. This is a purposive sampling strategy and the rationale for this is due to the methodological approach of this study stated in page 20 of the proposal.

No. of Schools		No. of Teachers	No. of Students	No. of Classes
Primary	NA	NA	NA	NA
Secondary	All	Secondary 3 Teachers: Response rate: 25~40	NA	NA
Junior Colleges/ Centralised Institute	NA	NA	NA	NA
Total	All Secondary	Secondary 3 Teachers	NA	NA

Number of visits per school	Estimated duration of each visit
1 visit per school	1 hour

Date of commencement of data collection	Date of completion of data collection
January 2016	April 2016

Expected Outcome of Research

Tick one or more boxes, where applicable:
(In addition to the completion of a report/thesis as part of the requirements of an academic course at the institution attached to.)

- ☒ Publish the findings as an article in a journal.
- ☐ Publish the findings as a book.
- ☐ Publish the findings on the web.
- ☒ Present the findings at a conference (or any similar platform).
- ☐ Give an interview on the findings to the media.
- ☐ Others (please specify): _____
- ☐ There is no intention to publish the findings.

Personal and Contact Details

Name	: Abdul Kahlid
Singapore UIN/FIN	: S1793057E
Mailing Address	: Blk 419 Choa Chu Kang Avenue 4, #02-314
Contact No.	: 93825414
E-mail Address	: abdul.kahlid@gmail.com
Name of Institution	: University of Edinburgh, United Kingdom
Name of Employer	: Republic Polytechnic

I agree to the following conditions:

1 To adhere to the original proposed research study. Any amendments to the original proposed data collection must be cleared by the Ministry before proceeding with the data collection in schools.

2 To keep the data collected as strictly confidential and to use it for the stated purpose only.

3 To seek clearance from the Ministry before publishing any of the findings from this study.

Signature :  Date : 11 December 2015

Attachment Checklist

	Attached	Not Applicable
Research Proposal/Research Write-up	☒	☐
Signed Letter of Recommendation from Supervisor/Organisation	☒	☐
Survey Form(s)/Questionnaire(s)	☒	☐
Interview Guide(s)	☒	☐
Parent/Guardian Information Sheet and Consent Form	☐	☒
Others: _____	☐	☒

Appendix 5: Email to School Principals to participate in data collection

Principal
School Name
Address

Dear Principal

RESEARCH ON NATURE AND SCOPE OF OUTDOOR EDUCATION IN SINGAPORE

My name is Abdul Kahlid, a Singaporean pursuing my doctoral studies at the University of Edinburgh, Scotland, and currently workinmg full time at Republic Polytechnic. My background is in training and development, having spent 15 illustrious years with Outward Bound Singapore which has provided a strong baseline and the professional knowledge in outdoor education. 2016 marks more than 50 glorious years of independence for our nation and during this time outdoor education has played a vital and evolving role throughout the Singapore education system. In the recent addendum to the President's address, the Acting Ministers of Education reaffirmed the role of outdoor education in students' holistic development. Coincidently, the thesis of my doctoral research is investigating Singapore teachers' belief on the value and purpose of outdoor education.

My motivation for this study is prompted due to recognizing secondary schools as a key agent as they embrace outdoor education, outdoor learning to achieve the desired outcomes of education and prepare learners for the 21st century. As little is known on the cultural interpretation of what and how outdoor education, outdoor learning happens in schools, this study is timely. Hence, I would like to seek your support to invite your teachers to participate in this study and contribute to the cultural interpretation of what outdoor education is.

This study is approved by the Progression Board of the University of Edinburgh. The Ministry of Education Data Administration has also given its approval to approach Secondary School Principals for support to encourage their Secondary 3 Teachers to participate (see attached documents). The profile of teachers that this study is targeting are secondary 3 teachers who have a role that may require them to use outdoor education, outdoor learning in the course of student learning/ holistic development. Teachers who may have some experience with outdoor education are also a suitable profile. Participation is

voluntary and the participant is free to drop out anytime without fear of prejudice. All data will be protected and its use will only be for the purpose of the doctoral study. No names of individuals or school will be revealed and only aggregated data will be reported. There are two ways to participate – an online questionnaire, and (if keen) face to face interviews to further extrapolate on the responses to the online questionnaire. If any teacher from your school participates in the study, an executive summary of the study will be made available upon request after the completion of the study.

If you think some of your Secondary 3 Teachers may be able to contribute and support this study, I seek your assistance to forward the prepared email below to them.

"Dear Teacher

As a tribute to 50 years of nationhood, I have embarked on a doctoral research about outdoor education in Singapore. If you are a secondary 3 Teacher, who have a role that may require you to use outdoor education, outdoor learning in the course of student learning/ holistic development or who may have some experience with outdoor education, your views would be valuable to this research. I would like to invite you to this link and contribute http://goo.gl/forms/G8xecE2ayW

Its is an open ended questionnaire and take about 25 minutes to complete. It will be open till 29 Feb 2016. Thank you for your time and contribution.

Sincerely

Abdul Kahlid
Doctoral Candidate/ University of Edinburgh"

I thank you for your attention to my email and hope to receive your support for this study. If you have any specific queries, you are most welcome to email me at s1064307@sms.ed.ac.uk or abdul.kahlid@gmail.com

Yours sincerely

Abdul Kahlid
Doctoral Candidate
University of Edinburgh

Appendix 6: Questions for in-depth interview (School Teacher)

Personal thoughts/beliefs on OE

1. What are your early encounters of outdoor education and when did this occur?
2. What did outdoor education mean to you as a result of those encounters?
3. In the online open-ended questionnaire, you described your beliefs of outdoor education as _____. Could you provide some examples to further elaborate?
4. Are there any particular socio-historical reasons that had an impact on your views and beliefs about outdoor education? I like to hear more on this from you.
5. If you had to describe the environment and circumstances where outdoor education takes place, what comes to your mind? Elaborate this please.

OE and the professional context

Since 2014, MOE had announced and infused outdoor education into the PE curriculum.

6. What are your views on this?
7. Has this had any particular impact on your beliefs about outdoor education? Please say more on this.
8. Do you think the potential of outdoor education is fully maximised in your school?
    a. If yes, how?
    b. If no, why?
9. How do teachers in general think about learning in the outdoors?
10. In what ways do you perceive outdoor education can contribute to the school curriculum? Why? [if no, don't proceed to next Qn]
11. In which areas of the school curriculum do you perceive outdoor education can make a contribution? Why?
12. Do you have anything else to add?

Appendix 7: Questions for in-depth interview (Outdoor Practitioner)

Personal thoughts/beliefs on OE

1. What are your early encounters of outdoor education and when did this occur?
2. What did outdoor education mean to you as a result of those encounters?
3. In the online open-ended questionnaire, you described your beliefs of outdoor education as _____. Could you provide some examples to further elaborate?
4. Are there any particular socio-historical reasons that had an impact on your views and beliefs about outdoor education? I like to hear more on this from you.
5. If you had to describe the environment and circumstances where outdoor education takes place, what comes to your mind? Elaborate this please.

OE and the professional context

Since 2014, MOE had announced and infused outdoor education into the PE curriculum.

6. What are your views on this?
7. Has this had any particular impact on your beliefs about outdoor education? Please say more on this.
8. Do you think the potential of outdoor education is fully maximised by Singapore schools?
    a. If yes, how?
    b. If no, why?
9. How do outdoor practitioners in general think about learning in the outdoors?
10. In what ways do you perceive outdoor education can contribute to the school curriculum? Why? [if no, don't proceed to next Qn]
11. In which areas of the school curriculum do you perceive outdoor education can make a contribution? Why?
12. What would be the roles of Teachers and Outdoor Practitioners in order for outdoor education to fully benefit schools and students?
13. Do you have anything else to add?

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